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Futures Methodology as an Analysis and Planning Tool within the Commercial Real Estate Industry, an Interpretative Study

Dominika Brodowicz
Technological University Dublin

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Dublin Institute of Technology
School of Spatial Planning
College of Engineering and Built Environment

**Futures Methodology as an Analysis and
Planning Tool within the Commercial Real
Estate Industry, an Interpretative Study**

Dominika P. Brodowicz MA

Submitted for the award of PhD
June 2013

Supervisors:
Professor Marek Bryx
Dr. Elżbieta Krawczyk
Dr. Lloyd Scott
Professor John Ratcliffe (Honorary Supervisor)

Abstract

Currently, the majority of methods used in the commercial real estate analysis and planning processes have retrospective and quantitative roots and are based on historic data and trend extrapolation. This approach is based on the assumption that the relationships among key commercial property market variables and trends are constant and develop in a predictable manner into the future. Meanwhile, contemporary real estate companies, which are the subject of this study, are faced with rapid change, often of a discontinuous nature, in their external and internal environments. Furthermore, some of the challenges facing this industry, like social sustainability and a shift towards green development, are complex and difficult to quantify.

This study addresses the issue of incorporating innovative and qualitative future oriented approaches into traditionally quantitative commercial real estate analysis and strategic planning. The aim of the research was to formulate a set of proposals for the effective and systematic use of futures approach in the real estate field. Specific objectives of the study were an in-depth examination of long-term planning approaches and application of futures methodologies in the commercial real estate industry.

The study identified several propositions concerning the use of futures methodologies in the commercial real estate industry analysis and long-term planning. The research also recognised that futures methodologies are linked inextricably with the strategic planning field and both should be used together to exploit and create new and different future opportunities for the commercial real estate industry.

Key words: commercial real estate industry, strategic planning, Foresight, Prospective

Declaration

I certify that this thesis which I now submit for examination for the award of Doctor of Philosophy, is entirely my own work and has not been taken from the work of others, save and to the extent that such work has been cited and acknowledged within the text of my work.

This thesis was prepared according to the regulations for postgraduate study by research of the Dublin Institute of Technology and has not been submitted in whole or in part for another award in any other third level institution.

The work reported on in this thesis conforms to the principles and requirements of the DIT's guidelines for ethics in research. DIT has permission to keep, lend or copy this thesis in whole or in part, on condition that any such use of the material of the thesis be duly acknowledged.

Signature _____ Date _____

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List of Abbreviations

APREA	Asian Public Real Estate Association
ARES	American Real Estate Society
ASEAN	Association of Southeast Asian Nations
BEF 2030	Built Environment Foresight 2030
CEFTA	Central European Free Trade Agreement
C&W	Cushman & Wakefield
CLA	Causal Layered Analysis
CO2	Carbon Dioxide
CSR	Corporate Social Responsibility
DEGEST	Demography, Economy, Government, Environment, Society and Technology
EREC	European Challenge in Real Estate
ERES	European Real Estate Society
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GW	Global Workplace Innovation
IAS	International Accounting Standards
ICI	Information, Coordination, Integration
IPD	Investment Property Databank
IRES	International Real Estate Society
ISDRS	International Sustainable Development Research Conference
IVSs	International Valuation Standards
IVSC	International Valuation Standards Council
JHR	Journal of Housing Research
JLL	Jones Lang LaSalle
JREL	Journal of Real Estate Literature
JREPE	Journal of Real Estate Practice and Education
JREPM	Journal of Real Estate Portfolio Management
JRER	Journal of Real Estate Research
JSRE	Journal of Sustainable Real Estate

LEED	Leadership in Energy and Environmental Design
MIPIM	Marché International des Professionnels d'Immobilier
N	Number
NAFTA	North American Free Trade Agreement
NAREIT	National Association of Real Estate Investment Trusts
NGOs	Non-profit Organisations
NPV	Net Present Value
NIEs	Newly Industrialised Economies
PEST	Policy, Economy, Society and Technology
PESTEL	Political, Economic, Social, Technological, Environmental, Legal
PPP	Public-Private Partnership
PWC	PricewaterhouseCoopers
Q1-8	Questions 1-8
RAND	Research and Development Unit
R&D	Research and Development
REESA	Real Estate Equity Securitisation Alliance
REITs	Real Estate Investment Trusts
RICS	Royal Institution of Chartered Surveyors
SPSS	Statistical Package for the Social Sciences
SRI	Socially Responsible Investment
SWIFT	Structured What-If Technique
SWOT	Strengths, Weaknesses, Opportunities and Threats
TODs	Transport Oriented Developments
UECs	Urban Entertainment Centres
UK	United Kingdom
ULI	Urban Land Institute
ULI ESDC	Urban Land Institute European Sustainable Development Council
UNU	United Nations University
US	United States
USA	United States of America
WCED	World Commission on Environment and Development
WFS	World Futures Society
WFSF	World Futures Studies Federation
WTO	World Trade Organisation

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Chapter 1: Background to the Research

1.1 Introduction

In the past few decades the business world has been undergoing radical transformation mostly triggered by economic, technological and environmental changes. The driving forces of change, primarily the process of globalisation, have transformed economic markets and made them more accessible and transparent. On the one hand, these changes, combined with the information and technological innovations have triggered growth and created opportunities for co-operation among international business sectors; on the other hand, the extended connectivity and interdependence of markets have increased the number of possible risks. In case of the commercial real estate industry the challenges lying ahead may be formidable. Based on the recent problems in the Eurozone caused by banking sectors in countries like Greece and Spain, and specifically the downturn in the commercial real estate industry worldwide, which started in 2007, it can be said that property professions are facing an arduous task in developing and implementing the best policies and strategies. For that reason there is a growing need, more than ever before in the history of capitalism, for an approach towards analysis and planning reaching beyond the quantitative considerations and including societal and environmental challenges influencing the growth and future of the organisations.

Current approaches to decision-making in the commercial real estate industry are based on quantitative methods, which can oversimplify complex issues and trends. Futures methodologies like Foresight and Prospective can be used to address this matter. In the past these methodologies gained recognition in the public and private sector. There are

numerous examples of futures projects in national and regional planning, and technology field but not many in the property industry. This doctoral research has been undertaken to address the issue of development of a structured and rigorous future-oriented process supporting analysis and planning in the commercial real estate industry represented by commercial property companies.

1.2 Planning in the commercial real estate industry

As signalled in the introductory section current rapid and unpredictable changes in business environment can create considerable challenges for corporations around the world and concerns not only in day-to-day operations, but also strategic planning and long-term decision-making processes (Hamel and Prahalad 1994; Wilson and Eilertsen 2010; Kunc and Bandahari 2011). Therefore, companies operating in complex and fast transforming environments face the need to plan ahead not only for growth and prosperity but also to react to risks and challenges (Mintzberg 1994; Mintzberg et al. 2003). Following Schwartz's (2009) point of view, nowadays companies are confronted with more complex and dynamic changes than ever in the history of organisations. Therefore, it seems that one of the major tasks for managers is to react through suitable planning and strategies, which are described in the literature as strategic management (Hunger and Wheelen 2003; Pollard and Hotho 2006; Hill and Jones 2007). This field is not a novelty; it has been already applied in practice for many years now, and it requires improvements (Kunc and Bandahari 2011). The majority of contemporary management approaches are developed on linear foundations assuming that most events can be predicted (Curnow and Reuvid 2003; Davenport, Leibold and Voelpel 2006). Current

challenges affecting global economies like the financial crisis are in many cases non-linear (Sherman 1989; Drucker 2001); therefore, scholars and professionals of strategic management face a phase in which this approach should be revised, otherwise, creativity and innovation could be eliminated from the strategic process (Stacey 2003). Also, it is important to emphasize that not only procedures but also mind-sets need to change. Managers and academics need to adopt a ‘new attitude’ that tackles complexity and changes not only in economic, but also in social, natural and environmental areas (Ratcliffe 2006).

The real estate market belongs to one of the most cyclical markets along with automotive and energy. Small fluctuations in the overall economy can often lead to a recession in the property industry, which is highly driven by consumer confidence and capital liquidity (Hewlett and Kaufmann 2008; Downs 2006, 2009). Therefore, strategic planning could be one of the crucial elements of market development and success. However, according to Hewlett and Kaufmann (op. cit.) most of the commercial real estate companies engage in strategic planning efforts when they are faced with certain catalytic events like conversions in economic and real estate environments and changes in ownership or leadership of the corporation.

In recent years, the growth of almost all real estate markets has been restrained and commercial property companies are facing challenges to growth on a scale never seen before (Downs op. cit.). The economic situation urges corporations to rethink and reshape their planning processes not only to operate through the downturn but also to prepare themselves for an upturn phase in the future (Ratcliffe 2009). New issues emerge, for instance, sustainable development of existing urban areas, reduction of

carbon dioxide emissions and transparency of business transactions (Lockwood 2009, 2009a). These challenges require divergence from prevailing methods and mind-set focused on short-term decision-making. According to Ratcliffe (2008), traditionally used research and forecasting methods - scientific, trend-based and quantitative in nature - are not capable of supporting researchers or decision-makers in exploring, explaining and reacting to multiple and interrelated factors and issues influencing the current and future shape of the built environment, including the commercial real estate industry.

1.3 Futures approach in the commercial real estate professions

The futures approach can be described as an ability to look ahead through learning from the past to support planning processes concerning long-term policy creation (Slaughter 2001, 2002). Use of futures methodologies, like Foresight or Prospective (discussed in detail in Chapter 3), could enable organisations to bring together leading thinkers to identify and agree areas of strategic policy, develop a consensus on priorities and make decisions that must be made to attain a shared vision (Ratcliffe 2006). They can be briefly described as intelligence gathering and vision building processes (FOREN 2001), allowing identification of weak signals and possible future trends (Tsoukas and Sheppard 2004). In essence use of futures methodologies, like Foresight, can support (Slaughter 1995; FOREN 2001):

- communication between parties concerned;
- concentration on the longer term;
- co-ordination of research and development process;
- reaching consensus created on future directions and policies; and,

- commitment generated among those responsible for implementation of policy.

Futures approaches and methods can support managers in anticipating what lies ahead for their companies, by looking beyond predictable solutions (Ringland 2008; Schwarz 2005). The scenario technique is one of the examples of these methods, and companies like Shell, Lafarge, Mercedes, Nestle, and Renault apply it in numerous projects (Godet 2001). In the commercial real estate industry there are several corporations, for example, King Sturge, Johnson Controls and Arup, which make use of futures methods to explore economic environment and search for new business ideas. Despite these examples, generally property industry has a poor record in the use of futures in a systemic manner compared with technology or oil industry companies (Ratcliffe 2006). This research has been undertaken to explore possibilities for applying the futures-oriented approach in strategic planning processes among real estate companies.

1.4 Research question, aim and objectives

The main research question posed in this thesis is:

”How futures methodologies, such as Foresight or Prospective, can be applied to support analysis and long-term planning processes used by the commercial real estate professionals?”

To address this research question, the main aim of this work was formulated as follows:

“to explore the potential for application of futures methodologies and associated futures methods in the commercial real estate industry, and to develop a futures framework for market analysis and strategic planning processes used by commercial property

professionals to respond to change and growing complexity in their business environment.”

In order to achieve this aim a set of specific objectives include:

1. Examination of main approaches applied by commercial property professionals towards the long-term planning procedures and use of market analysis methods.
2. Exploration of procedures and methods used in the Futures Research, specifically Foresight and Prospective methodologies in relation to the strategic planning and data analysis methods applied by the commercial property professionals.
3. Examination and critical assessment of the “Built Environment Foresight 2030: the sustainable development imperative” case study focused on its’ participants opinions to determine how futures methodology and selected methods could be used as an analysis and planning tools by commercial property professionals.
4. Formulation of a set of recommendations in the form of a framework for use of futures methodology and selected futures methods by commercial property professionals to analyse the market and develop long-term business strategies.

1.5 Contribution to knowledge

Since the 1950s, a qualitative Futures approach have been successfully applied to numerous projects from business and politics to technology field (McGeehin 2002; Amsteus 2011), yet it is still not fully recognised in the real estate literature and practice (Knight and Ruddock 2008; Ratcliffe 2008). The theoretical contribution of this thesis to knowledge is the development of a Futures-oriented framework for application in analysis and strategic planning in the commercial real estate industry. Additionally, this study offers detailed discussion and reflections on the testing of the Causal Layered

Analysis method (CLA) not applied before in the real estate field. It also proves a link rarely emphasized in the literature between Futures field and strategic management and contributes to the endorsement of Futures thinking in the property industry through testing and assessing the futures methodology used in the investigated case study. This doctoral study provides a portrait of the industry in the phase of rapid economic change between 2007 and 2010 and also identifies a number of areas for further research. All contributions are discussed in detail in section 7.6 Thesis Contribution to Knowledge.

1.6 Research methodology

After careful consideration of the nature and character of this thesis, based primarily on non-numerical sources of information, its methodological foundations have been assessed to be qualitative. It has been recognised that constructivism and interpretivism represent the philosophy and strategy of the inquiry of this study. Crystallisation and triangulation have been adopted as strategies for achieving credibility and reliability in this qualitative research (see Figure 1.1 for theoretical framework of the study).

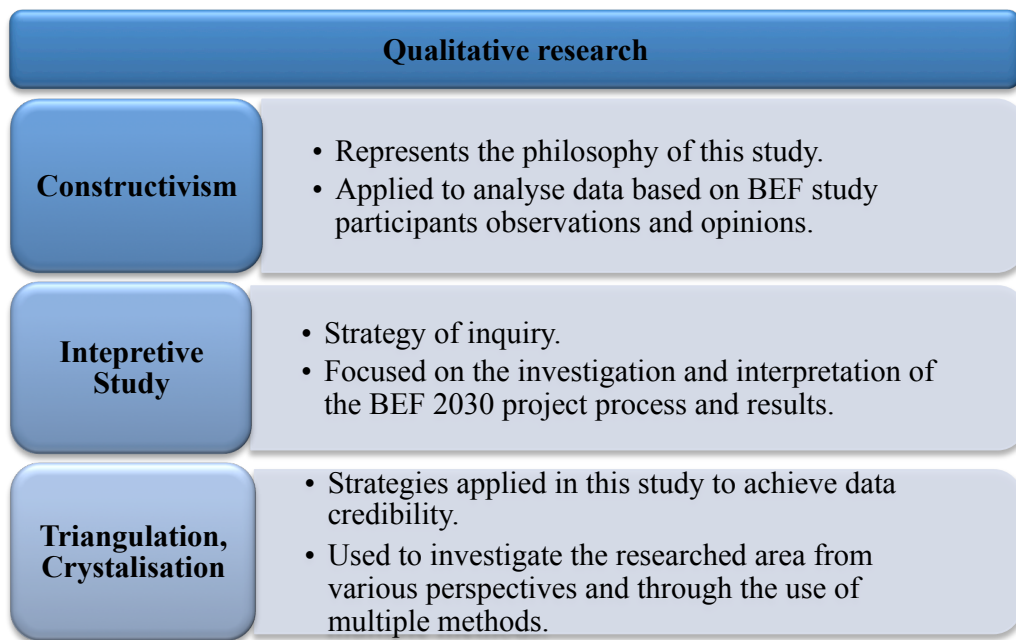


Figure 1.1 Theoretical framework of the study

Qualitative studies are described as inquiries which involve the use of numerous empirical materials collected on the basis of case study, interviews, texts that describe situations, problems, and meanings in societies, groups or individuals' lives characteristic for qualitative research (Denzin and Lincoln et al. 2005; Denscombe 2007). In this study, the qualitative approach was used to gain insights and personal views of study participants to gather information about perspectives for the commercial real estate industry. This doctoral research relies on opinions and insight of individuals representing various sectors of commercial real estate industry. On this basis, the philosophy of this study is represented by constructivism and interpretivism and interpretative study was chosen as a strategy of inquiry. According to Creswell (2007) constructivism in many cases can be combined with interpretivism. Firstly, constructivism is a worldview, in which individuals look for understanding of the surrounding reality. Secondly, interpretivism is focused on “understanding and meaning-making, as opposed to explanation, as the main purpose of research”

(Bhattacharya 2008:464). The purpose of studies based on interpretative and constructive paradigms is to gather data based on participant's views and opinions on the situation. The role of the researcher is to analyse and interpret them (Creswell 2007).

To ensure the results' credibility and reliability, two strategies: crystallisation and triangulation were applied in this research. Firstly, crystallisation is based on the rule that the same problem should be presented from various points of view. It is dictated by the notion that the specific situation or issue could be understood and perceived differently by individuals (Denzin and Lincoln et al. 2005). The second strategy, triangulation, is a process based on the use of various perceptions to clarify meanings and prove the repeatability of observations (Denzin and Lincoln op. cit.). In this study, both crystallisation and triangulation were used for in-depth exploration of the researched problem and confirmation of data credibility. Both strategies are discussed in the methodological chapter, in section 4.3.2 of this thesis. In the process of data gathering and analysis qualitative and quantitative methods were used, like statistical tests, and futures methods, such as futures workshops and strategic conversations. Futures tools used in this study occurred in a dual role - as research tools and a subject of the inquiry. Chapter 4 of this thesis includes a detailed presentation of the research methodology, including the philosophy, methods applied in the data gathering, analysis and presentation.

1.7 Built environment case study

This doctoral research is based on a case study: "Built Environment Foresight 2030: Sustainable Development Imperative" (referred further as BEF 2030), described in

detail in Chapter 5. BEF 2030 study was undertaken by The Futures Academy at Dublin Institute of Technology (DIT) between 2007 and 2009 to explore the challenges facing the built environment and specifically commercial real estate industry by using futures approach. The author of the thesis was a Project Researcher in the BEF 2030 and was personally engaged in and responsible for study preparation, data gathering, analysis, interpretation and presentation. The BEF 2030 project was a three-phase global comparative study undertaken by The Futures Academy in collaboration with King Sturge and the Royal Institution of Chartered Surveyors Foundation (RICS Foundation). The general aim of the study was to:

“(...) gain a better understanding of the possible outcomes, along with the key trends and events that might shape the built environment and related professions over the coming years” (BEF 2030:3)

BEF 2030 results and experience gained by the author as a project researcher are used in this thesis as sources of primary data analysed in Chapter 5. BEF 2030 is exploited as an interpretative case study on how the Futures approach can be applied in analysis of emerging trends and creates recommendations for strategic planning. Discussion on BEF 2030 study is complemented with author’s observations and participants’ views on the Futures process.

1.8 The outline of the thesis

This doctoral thesis is divided into seven chapters. It includes the origins of the research; discussion on characteristics of analysis and planning in the commercial real estate industry and futures methodologies and methods based on the literature review;

methodology applied in the doctoral study; discussion on the primary research results and finally, conclusions and recommendations. Brief descriptions of each chapter are presented below:

Chapter 1: Origins of the Research

First chapter sets the context of the doctoral thesis. It outlines the current trends and challenges affecting the commercial real estate industry and raises the need for a structured long-term planning processes reaching beyond the frames of traditional quantitative analysis. Then, the future-oriented concepts, like Foresight and Prospective, are presented as possible approaches to long-term planning processes. The next section introduces the research question, the aim and objectives. Furthermore, the methodological foundations and epistemological roots of the research are presented. The last section includes the outline of the study.

Chapter 2: Analysis and Strategic Planning in the Commercial Real Estate Industry

The second chapter is based on the review of concepts and theories related to the principles of the real estate market, business cycles and strategic planning. It portrays commercial real estate industry and is focused on the property advisory services companies. Major aspects discussed in this chapter are issues shaping the industry and influencing long-term planning, like market cycles, and asymmetry of information. It also includes discussion concerning analysis and planning procedures applied within the industry.

Chapter 3: Futures Methodologies and Strategic Planning Field

The third chapter includes a description and discussion of similarities and differences between futures methodologies and strategic planning field. Initially, origins of the Futures field and terminology characteristics for this field are discussed. Then, specific methodologies like Foresight and Prospective are described in detail, including their origins, characteristics, processes, and methods. Furthermore, the main challenges concerning the use of Futures methodologies in the corporate planning are discussed. Finally, the examples of Futures projects and exercises conducted in commercial real estate are analysed.

Chapter 4: Methodology of the Study

The fourth chapter presents methodology of the study. It includes the epistemological foundations, research strategy, and methods applied to obtain primary data. At first, the methodological framework is outlined. Then, the qualitative character of the study, concepts of constructivism and interpretivism, crystallisation and triangulation are discussed. Next, individual techniques like survey questionnaires, futures workshops and environmental scanning are reviewed. Finally, qualitative and quantitative methods of data analysis and presentation used in this doctoral research are described.

Chapter 5: Built Environment Foresight 2030 - Interpretative Study Findings

Chapter 6: Futures Methodologies Questionnaire - Findings

Primary research data is discussed in Chapters 5th and 6th. Chapter 5 includes analysis of the BEF 2030 case study, in which futures methodology was applied to consider the commercial real estate industry future. Chapter 6 presents and explores the results of the survey questionnaire on futures methodologies conducted among real estate market

scholars and professionals engaged in the BEF 2030 project between 2007 and 2009 as well as experts familiar with its results.

Chapter 7: Theoretical Futures Planning Framework

The penultimate chapter is focused on recommendations regarding the use of a futures framework for supporting the industry planning and operational processes by the commercial real estate professions. The proposition is based on primary and secondary data and experience gathered by the author involved in the BEF 2030 study.

Chapter 8: Summary, Conclusions and Recommendations

The final chapter concludes the thesis. It includes summary of the research, and discussion on the proposed theoretical framework for systemic use of futures approach in the property industry. This chapter précis the benefits of using futures approach in the commercial real estate industry analysis and strategic planning process. It ends with discussion of the significance of the study and implications for further research.

Chapter 2: Analysis and Long-term Planning in the Commercial Real Estate Industry

2.1 Introduction

This chapter examines issues related to the commercial real estate industry analysis and planning. It starts with the discussion of real estate characteristics, market segmentation and a brief description of the property advisory corporations. Next, major challenges for the real estate companies and issues like risk, market cyclicalities and change are examined. Then, the approaches used in the real estate analysis and planning are discussed in the context of the strategic management field.

2.2 Segmentation of the real estate market and the commercial real estate industry

The entire commercial real estate industry is strongly influenced and shaped by characteristics and features of its products - properties. They are immobile and their geographical location is constant (Floyd and Allen 2002; Larsen 2003). They cannot be developed in one place and sold somewhere else to gain higher profit like other consumer goods. Globalisation of the commercial real estate industry refers to services, capital flows and financial operations on the market but not properties itself (Cortesi 1999). The property market is considered as less flexible in comparison to other consumer goods markets, because of a fixed amount of land, high investment costs, and slower adjustment of demand and supply levels. Owners, tenants, investors, developers, architects and appraisers all meet in the real estate market, which is a place of properties and services as well as information exchange (Bryx 2006). Properties and the real estate

market have various functions that form important parts of everyone's life from being a home and shelter or workplace to investment or mortgage security (Larsen 2003). The real estate sector creates a significant part of the gross domestic product (GDP), which is measured as the value of all goods and services produced during a year within a specific country. On average, the real estate sector contributes to over 10% of the GDP in developed countries like the US or UK (DiPasquael and Wheaton 1996; Larsen 2003). Property taxes are often a significant part of local governments' budgets; for instance, Belniak (2001) evaluated that in the case of Poland, the income created by the real estate taxes amounts to approximately 11% of all local yearly revenues. The entire industry creates a significant number of workplaces and engages specialists from fields including investment and management and engineering (DiPasquale and Wheaton 1996; Galaty, Allaway and Kyle 2003; Bryx 2006).

There are various criteria developed by academics and practitioners to segment the market. The functional division (Floyd and Allen 2002; Frej and Peiser 2003; Bryx 2006; Jacobus 2009) assumes that the real estate market consists of interrelated sub-segments, which are:

- Brokerage - brings together parties representing the demand and supply side of the market like buyers and sellers, tenants and landlords. Usually agencies and licensed specialists (called brokers) mediate in transactions, including property sale or lease.
- Investment - contributes to the growth or improvement of the property stock. Anyone can be an investor in the real estate market, but the major barrier is the high cost of the investment in comparison to other consumer goods.

- Management - focused mainly on the physical product, which is the building. In case of larger properties, like office buildings property managers representing the owner manage and administrate buildings' daily operations and the search for tenants¹.
- Financing - provides financial solutions, like loans, investment funds used in the investment, development and even management sub-segments when refurbishments are required.
- Development - includes activities like property building and renovations of single house units and office buildings, and entire city districts.

Market practitioners often create separate segmentations based on their experience and specific market characteristics. The Urban Land Institute (ULI) and PricewaterhouseCoopers (PWC) frequently use the operational classification and categorise the market into segments including commercial and residential properties² (ULI and PWC 2009, 2010):

- Retail, like shopping malls, newsstands, grocery stores;
- Hotel and resort, from one- to five-star hotels, theme parks and seaside resorts;
- Office, including public and private offices, single bureau units, office buildings and headquarters;
- Industrial, like warehouses, distribution centres and logistic parks; and,
- Residential, like apartments, houses, dwellings and residences.

¹ Another important profession emerging from the property management is facilities management (Thomson 1993). It can be defined as “the process of coordinating the physical workplace with the people and work of an organisation” (BOMI Institute 2002), and it includes planning, establishing and maintaining a work environment. Facilities management combines physical maintenance and operation of properties with engineering, architecture, business management and even human resources (Alexander 2003, BOMI Institute 2002).

² This type of market classification was used in the BEF 2030 study.

At this point it is important to emphasize that this doctoral study focuses on the commercial property industry and investigation of the BEF 2030 case study, in which participants described their own functional divisions of the industry, and this was reflected in the categorisation used in survey questionnaire 4. Figure 2.1 below presents the general scheme of industry segmentation developed on the basis of information given by the commercial property professionals participating in the BEF 2030 research project.

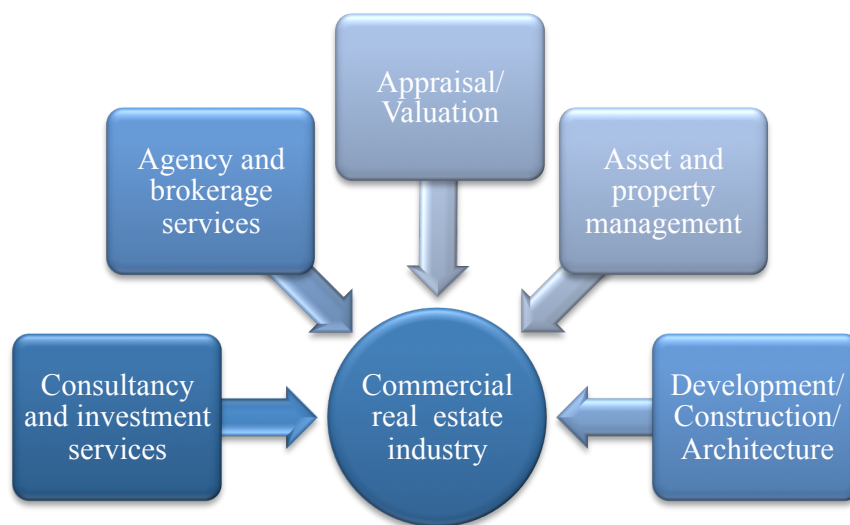


Figure 2.1 Functional division of the commercial real estate industry

Source: Author's own elaboration based on the basis of functional divisions proposed by the BEF 2030 participants

In the final chapter of this thesis the functional division proposed by the study participants was confronted with the RICS's (2004) scheme of the commercial real estate industry focused on actors appearing at specific stages of the property life-cycle from land acquisition, design and costing, through obtaining permission and financing, construction, letting/sale, to property management and evolution for sale purposes (see Figure 8.1). The aim of setting professions with the specific property life-cycle stage

was to illustrate arguments for applying Futures by commercial property specialists discussed in section 8.3.

2.3 Challenges for the commercial real estate industry in the 21st century and the need for long-term strategic planning

The contemporary business environment creates multiple challenges for companies, including commercial property industry. Adjustment to evolving market condition and response to issues can require a change of management styles, planning approach, objectives, introduction or withdrawal of products or services (Benjamin and Sirmans 2000; Drucker 2007; Horrigan 2010). On the global scale there are numerous challenges potentially threatening the future of corporations. Their importance for a specific company may vary significantly depending on the market and industry in which a particular organisation operates. Among the general issues pointed out by numerous authors throughout the recent decade are, for example, demography, ethics, global criminal activities and virtual data safety (Glenn and Gordon 2003, 2009; The Futures Academy 2004; Lassarre 2007; Howard 2010; Appleton and Lehmann 2011). Figure 2.2 presents the list of some of issues and factors challenging the survival and future success of companies operating globally together with the most common approaches towards the change and their theoretical influence on the property industry.

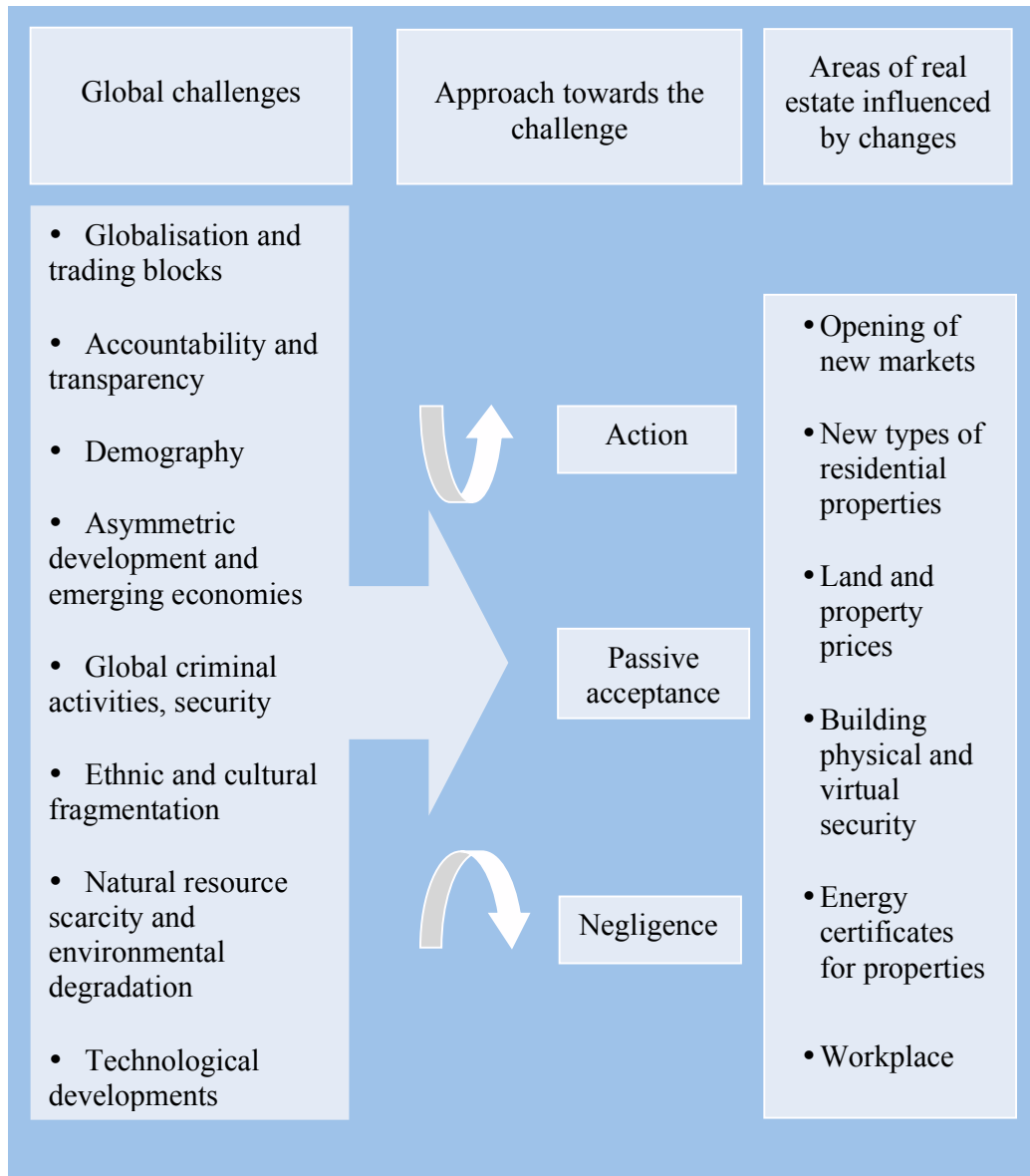


Figure 2.2 Global challenges and the global corporation

Source: Based on Glenn and Gordon (2002), The Futures Academy (2004), Lasserre (2007), Howard (2010), Appleton and Lehmann (2011), United Nations (2011)

The first challenge concerns *globalisation* and *growing interdependency of international markets*. Globalisation itself is not a new phenomenon; historic sources prove that at the end of the nineteenth century colonial world was actually more ‘global’ than it is today. Trade barriers between empires like Britain and France and their colonies were limited. There was also a freedom of movement for people and goods comparable to the current rules of the European Union (EU) (Lassarre 2007;

Duczowska-Piasecka 2009). Then the events of the First World War provoked protectionism and restrictions on exchange of goods, which was gradually restored after the Second World War in the form of bilateral and international agreements between The Association of Southeast Asian Nations (ASEAN), World Trade Organisation (WTO), North American Free Trade Agreement (NAFTA), Central European Free Trade Agreement (CEFTA), and the EU internal market (Archer 2001). In the commercial real estate this considers mostly investment sector. This leads to further challenges - *accountability* and *transparency*. Following the highly publicised ENRON and Parmalat scandals corporations have come under harsh scrutiny (Vinten 2002). There is a growing expectation from the society and regulator towards companies to comply with accountability standards and transparency³ (Kotler 1997; Kotler and Lee 2005).

Another challenge regards *demography*. Growing global population⁴ and its uneven distribution, with rapid birth rate in the developing countries of South America, Asia and Africa, and gradual birth rate decrease followed by increased life expectancy in the developed countries in Europe and North America (Demeny and McNicoll 2006). This demographic change combined with asymmetric economic development poses a question for commercial real estate companies like what; where; how and for what price to develop and sell properties.

³ In terms of market initiatives these challenges more often become part of corporate social responsibility (CSR). In the current literature there is no single definition of CSR; in general it is a way of managing the strategic and operational activities of a company to produce an overall positive impact on stakeholders and image of the company (Fuller and Tilley 2005).

⁴ Global population is expected to reach over 10 billion by century's end (UN 2010).

Subsequent challenges considered as significant for the future of the global firm are the *globalisation of criminal activities* and *ethnic and cultural fragmentation*. According to Huntington (1997) future conflicts could be rooted in cultural differences between civilisations (like attacks of 11 September 2001). This issue is closely linked to another challenge - *security*. In the context of the property market security refers to physical security of buildings, as well as virtual security of information stored on office and house electronic appliances (The Futures Academy 2004). Also, rapid changes in the natural environment, such as scarcity of natural resources and growing energy demand raise the issues of energy security and conservation (Lockwood 2007, 2009). Unsustainable business practices persist and are one of the core issues to be solved by the commercial real estate industry (Cooke and Keeping 2011; Harrison and Seiler 2011). The ecological challenge requires formulation of strategies preserving natural resources and consume less (David 2001).

Last but not least are technological developments in information technology, renewable energy, nano and biotechnology (Arup 2006). In the context of real estate, technological developments can revolutionise the entire industry: to mention but a few - applications that will allow buildings to adjust to weather conditions, wireless communication devices that change the concept of working place, or development of new sources of renewable energy (Lockwood 2007).

Identification of challenges is important, but even more important for the successful future of the commercial real estate companies is analysis and adjustment to change through proper planning. Some challenges lying ahead of commercial real estate industry like environmental and social responsibility are not fully quantifiable, yet their importance should not be neglected without proper analysis (Dyllick and Hockerts

2002; Edwards 2005). In the global scale around estimated 60% of all materials is used by the construction industry and 60% of the world's energy is used by buildings' operations (Sell 2007). Energy and materials savings can reduce costs and be used as image boosters for property companies, especially since customers and public opinion are becoming more appreciative of companies that operate in a way that "mends rather than harms the environment" (David 2001:255).

2.4 Change, risk and market cycles in the business environment including commercial real estate industry

"In today's business environment, more than any preceding era, the only constant is change." Waterman (1987:22)

After over two decades Waterman's (1987) statement describing change as a constant and inevitable force on the market has not lost its relevance. On the contrary, taking into consideration recent financial crisis, it can be said that change is a fact of life in any organisation. The magnitude, speed or direction of change may vary by different markets and time but no organisation is immune to shifts within the industries (Longenecker and Rieman 2007; Bordum 2010).

2.4.1 Change

No company can avoid change. In the business environment change can be caused by numerous factors, such as new tax rates, social unrests, aging of the population or an

increasing number of corporate mergers (David 2001). In companies' microenvironment it can be initiated by employees, clients or more often by groups of stakeholders (Ransom and Knighton 1996; Longenecker and Rieman 2007). Nowadays, change in its various dimensions including frequency, magnitude, and complexity take place rapidly. It is far less certain or sequential than it was two or three decades ago (Ratcliffe 2008); therefore, strategists are faced with numerous discontinuities that are difficult to predict or manage (Thomson and Martin 2005; Lassarre 2007). Van der Heijden (2005) identifies three main types of uncertainties: *risks*, *structural uncertainties* and *unknowables*. The first type, *risks* occur when similar events from the past allow strategists to estimate the probability of current and future outcomes. The second type, *structural uncertainties* describe unique events whose probability is difficult to estimate. The third type, *unknowables* are not foreseeable events.

Change can be neglected or resisted by companies and decision makers, while it raises anxieties and requires modifications in the developed businesses plans (Drucker 1995). Despite difficulties with managing change, identification and analysis of factors, market shifts and trends could be important for the future success of companies (Lassarre 2007). Facing uncertainty and rapid economic collapse companies often need to reconsider their aims, plans and operations to adjust to new market conditions. This can lead to what is described in the management literature as '*strategic change*' (Drucker op. cit.). It can include development of new business procedures, operations, the launch of a new product or service, expansion and also withdrawal from the specific market (Henry 2008). Strategic change is necessary for enterprises to ensure a fit between their capabilities, the resource base and the changing market environment. In essence, it is the way, in which a company adapts to external change (Drucker 1993).

Drucker (Ibid.) points out that business failure often occurs when managers follow their assumption about market conditions while facing new uncertainties. This includes faulty assessment of change in legislation, taxes, patents, distribution channels and many other external factors. To adjust to change properly, companies need access to reliable information and critically analyse market data used in planning. Well-known multinational corporations like Nestle, Unilever and Coca-Cola developed mechanisms for scanning the external environment (Drucker 2007) but in general and in the context of the recent economic downturn, there is still a room for improvement (Downs 2009). The need for information on the external environment where threats and opportunities are likely to arise becomes increasingly important. In the commercial real estate industry, which is far less transparent than other industries, companies deal with information asymmetry and scarcity (Bryx 2006); this primarily concerns transaction prices. Data concerning economic situation, social issues or environmental changes is available to real estate companies as much as to any other companies.

Change within the organisation alone can be divided into two general categories: revolutionary and evolutionary (Henry 2008; Smith and Graetz 2011). Revolutionary change describes turmoil periods in company's life. It refers to a rupture of existing business practices over a short period of time. Usually, it has an origin in the external environment, like economic shocks. Evolutionary change is gradual and consists of various small changes. It takes place over prolonged periods of economic growth stage of the cycle with no rapid shifts in the organisational structure or practices. Revolutionary and evolutionary change can both have similar results, but take place in different timescales and market circumstances. Successful companies manage change through continuous adoption of strategies, products and distribution channels to

changing internal and external circumstances (Silberman 2003; Heldman 2009). As pointed out by David (2001) adjustment to change should be based on constant monitoring of external and internal environment. The forces surrounding the organisation, like trends and issues, can be assessed according to two measures (Lynch 2009):

1. Changeability - the degree to which the environment is likely to change. It comprises complexity (degree to which the organisation's environment is affected by factors), and novelty (degree to which the environment presents the organisation with new solutions).
2. Predictability - the degree with which such changes can be predicted. Its two important elements are rate of change (slow, moderate or fast) and visibility of the future (availability of accurate data for forecasting).

2.4.2 Risk

Business activities, including those performed by the commercial real estate professional, are generally exposed to risk, and therefore it is a measure of the potential inability of an organisation to achieve objectives within defined costs, schedule and technical constraints (Conrow 2004). It usually consists of two components. These are: likelihood (probability of failing to achieve a particular outcome) and impact (determining consequences of failing to achieve that outcome). Depending on the type of business risks, they can be classified as: market, financial, operational, purchasing power risks and other, described in Table 2.1. For instance, in property management it could be loss of tenants, withdrawal of a major client, economic slump in the property market or a drop in prices per square meter.

Type of risk	Description
Market risk	This type of risk is inseparably related to all economic activities and considered as systematic risk. Factors constituting this type of risk are beyond the control of market participants. In the case of the commercial real estate industry this could be a natural disaster stopping property construction or a terrorist attack in the building.
Financial risk	Financial risk is associated with the use of any type of external financing. If costs of external financing are higher than company's income, risk that the firm will not have adequate cash flow to fulfil all financial commitments occurs. For commercial real estate companies this could be lack of external funding from banks or problems with repaying the investment loan.
Operational risk	Includes disruption to supplies and operations, loss of access to essential assets, failures in distribution, which in the case of commercial real estate companies is often associated with a human error.
Reputational risk	Loss of business partners' or employees' confidence, damage to reputation caused by socially irresponsible investments and practices. In the case of commercial real estate this could be a human labour exploitation, poor safety standards at the construction site.
Purchasing power risk	In the economic downturn, capital recovered from a property investment can be worth less in terms of the current purchasing power than the capital initially invested. For the commercial real estate industry this type of risk is one of the most important ones to avoid, due to liquidity issues and the size of investment.
Other risks	Legislative risk, like unexpected changes in tax law, property rent controls or enforcement of standards like energy certificates for all new and rented commercial buildings in the EU.

Table 2.1 Types of risk

Source: Based on McNeil and Frey (2005), Vose (2006), Hopkin (2010)

Considering the possible negative outcomes of neglecting or ignoring the risk, such as loss of liquidity or even bankruptcy, companies initiate procedures to manage the risk (Downs 2009). The risk management process, which could be also applied in the commercial real estate industry, includes anticipating and analysing risks to effectively manage or eradicate them (Fraser and Simkins 2010). As presented in Figure 2.3 it

generally includes 5 phases and starts with risk planning, assessing risk issues, developing treatment options and monitoring risks.



Figure 2.3 Risk management process

Source: Adapted from Conrow (2004), Fraser and Simkins (2010)

1. Risk planning – involves developing and documenting an organised, comprehensive and interactive strategy and methods for identifying and tracking risk factors, performing assessments to determine how risks have changed, developing risk handling plans, monitoring the performance of risk handling actions and assigning adequate resources (Ibid.).
2. Risk identification - determining existing or anticipated risks or hazards and discovering their characteristics, such as described in Table 2.2 operational, financial and political risks. At this stage both the qualitative and quantitative approach can be used (Conrow 2004; Melnikov 2004; Hopkin 2010), for instance, environmental scanning covering demographic, economic, governmental, environmental, social and technological issues. (This method is described in detail in Chapter 3; additionally, a list of risk identification methods is presented in the Appendix 1 - Risk detection methods).
3. Risk analysis - includes examination of identified risks and hazards to increase the likelihood of meeting cost, performance, schedule and other objectives. It is based on a structured approach to thinking through threats, determining the influence, likelihood and cost of occurring risks (Christodoulakis and Satchell 2008; Hopkin

2010). Risk analysis techniques can be of qualitative and quantitative character (Conrow 2004), for example, the Structured What-If Technique (SWIFT), which is a broad, loosely structured questioning in the form of brainstorming sessions or Monte Carlo analysis that uses random samples and other statistical methods for finding solutions (Hopkin op. cit.). See Appendix 2 for additional quantitative risk detection methods.

4. Risk treatment - includes identification, evaluation, selection and implementation of solutions and measures to modify and diminish risk through (Melnikov 2004):
 - Avoidance - not to become involved in activities burdened with risk.
 - Transfer - moving risk to third party.
 - Acceptance - there is a general understanding of risk and acceptance of consequences and likelihood of risk.
5. Risk monitoring - systematic tracking and evaluation of risk treatment actions against established metrics. It provides inputs to strategies amendments and should be finalised by documenting the risk management program for the future reference (Fraser and Simkins 2010).

2.4.3 Market cycles

The terms ‘business cycles’ and ‘market cycles’ are often used as synonyms and describe the economic growth and drop patterns on the markets (Onwumere, Stewart and Yu 2011). Indicators like the GDP, industrial production levels, interest-rate-spread levels, unemployment rates and consumers’ confidence presage the cycle stages (Belongia and Garfinkel 1992; Basu 2010; Onwumere, Stewart and Yu 2011). The average business cycle can last for about 8-10 years with 4-5 year expansionary and

contractionary segments (Cooley 1995; Tvede 1997). In the economic theory Schumpeter (1939) divided cycles into short, medium and long; for example, Kitchen's cycles reaching from 3-4 years could be qualified as short, whereas Juglar's 9-10 year as medium and Kondratieff's on average 54-60 year cycles as long.

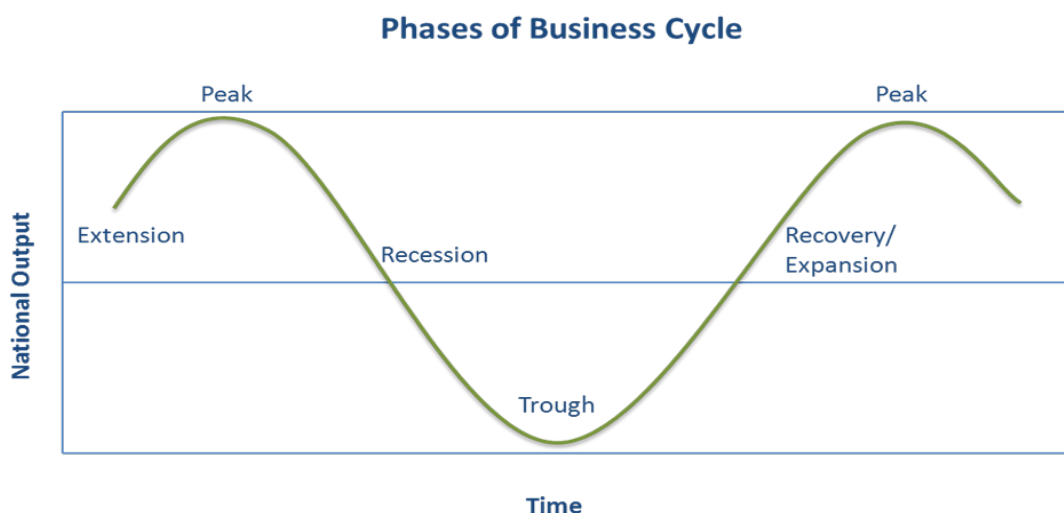


Figure 2.4 Phases of the business cycle

Source: Based on Knoop (2009); Mullineux (2011)

Generally, changes and upcoming stages in the cycles are indicated by the GDP level, which can be influenced by a number of factors (Figure 2.4 presents phases of the business cycle). For instance, Veblen's theory (1904) assumes that resource prices, investment levels and expectations of the future developments are the most crucial variables that influence the GDP, whereas Keynes (1964) distinguished consumer prices, consumption levels, and employment. Generally economists like Friedman (1953; 1970) indicate that combination of factors like corporate profits, interest rates, resource prices, and disposable personal income strongly influences GDP levels and cycles. Among the main theories on economic cycles are:

1. Veblen's theory (1904) was developed at the beginning of the 20th century and built around the effects of the rate of profit and credit used to expand the business. During

an upturn, the rate of profits grows, together with the credit value. After reaching the breaking point, profits decline, credits lead to debts, which force liquidation of assets and shrinkage of values.

2. Schumpeter's theory (1927) is based on the assumption that innovations, such as new products and services and new technologies generate cycles. According to Schumpeter (Ibid.) markets are in a state of equilibrium until innovation is introduced, which initiates activity of investors, new investments and products. This leads to oversupply of a specific product or service, reduction of price levels and profits, and results in a downturn, which continues until a new market balance is reached.
3. Friedman (1970), known for his liberal opinions concerning corporate responsibility, assumed that cyclicity is a result of external shocks in the economic system and reactions of governments and market players to it. Friedman's (1953) view on cycles is based on the assumption that the economy has self-correcting mechanisms leading towards the equilibrium point and the role of policy makers is to set clear rules for the market players, and not to interfere in the case of the shock.

Cyclicity is one of the forces which influences real estate companies to plan ahead and monitor new developments on the market. Changing economic environments often require new approach towards property financing, management and development. On the one hand, during the downturn phase of the cycle investors, corporations as well as developers seek new mechanisms to strengthen or salvage yield on real estate investments (LaPier 1998). On the other hand, dynamically growing markets lure investors, developers and ignite innovations (Ibid.) Shifts in the markets are almost a certainty. The challenge for the companies is not to predict the next downturn (bear

market) or upturn (bull market), but to anticipate the upcoming change and to be prepared for it (Ratcliffe 2008). The aim is to maintain the operations throughout the tough times and not to overlook the recovery stage (Zarnowitz 1992; Kay 1993; Tvede 2001). To achieve this, a company has to monitor the market and gain understating of the current stage of the cycle (Basu 2010).

Every market, including the real estate market, is under the influence of changing factors that cause cyclicity. Challenges, threats and opportunities for the real estate market participants differ significantly in each phase of the cycle. Therefore, strategies and operations should be adjusted to the market situation. Proper reactions to changes and shifts in the business environment require companies to implement at market scanning and analysis. This can be summarised by the following statement:

“Every company should put in place processes (formal or informal) to monitor the marketplace and their business and, most important, should have strategies in place and the discipline to act differently in the face of changing conditions.”

Hewlett and Kaufmann (2008:141)

Companies should monitor the markets and search for early warning signals but in many cases managers fail to recognise the change and focus main resources on short-term gains (Ratcliffe 2001, 2006). A proactive approach towards change can contribute to achieving the competitive advantage and secure survival of the company (Nilsson and Rapp 2005). Monitoring early warning signs does not have to be an expensive activity; numerous indicators are easy to notice in the business environment. Most efficient systems are based on the selected indicators relevant to the organisation's business activity, like metropolitan and national economic indicators, capital indicators,

metropolitan and national area real estate market indicators and company performance factors (Jackson, DeNesi, Hitt 2003). See Figure 2.5 Real estate indicators for examples.



Figure 2.5 Real estate indicators

Source: Hewlett and Kaufmann (2008:143)

2.5 Data analysis and market research in the practice of commercial real estate professions

In the 1960s and 1970s, trend projections, mathematical modelling and market surveys were used extensively as long-term planning and decision-making tools (Ratcliffe 2008). Then, from the late 1970s and towards the 1980s the view of the future and possibility of change started to be seen differently. This was induced by economic

disruptions. Change, uncertainty and complexity became recognised as important factors shaping businesses and influencing the future but even when the corporate world responded relatively quickly to this, professions of the commercial real estate industry were slower to react and this is also a case in current times (Ibid.). Commercial real estate companies are more likely to be directed towards hard outputs such as forecasts and models (Leishman 2003), then to use of the futures approach (Ratcliffe 2002). Real estate analysis and prognosis are primarily based on quantitative data like prices per square meter, or demand and supply levels. Forecasts are frequently used in the decision-making process by investors, developers, landowners and buyers (Leishman op. cit.).

Most analysis and forecasts concerning real estate are based on quantitative methods (McMahan 2006). In property valuation the procedures are based on law regulations and industry standards (Maczynska 2008), for instance, International Valuation Standards (IVSs) introduced by The International Valuation Standards Council (IVSC). IVSs describe compulsory procedures and techniques required while undertaking the task of assessing the value of property; this includes valuation principles, concepts and definitions. Globally, there are dozens of national valuation organisations, as well as corporate and institution members of IVSC committed to application of IVSs framework in practice (IVSC n.d.). It is also important to mention RICS professional standards of valuation, generally known as the 'Red Book', which comprises description of best practices, rules for undertaking asset valuations and mandatory for all RICS members. Standards of valuation described in the 'Red Book' are consistent with IVSs to ensure compliance with the highest professional standards (RICS 2013).

Generally, methods used in this sector are derived from the quantitative field and are focused on market data like rent volume or transaction prices. Major approaches to property value estimation are of a quantitative nature, for instance, the cost approach (calculation of total cost required to develop property that provides the same utility as the valued property) or the income approach (present value of the calculated future income generated by the property becomes basis for the current worth of the property) (Larsen 2003).

Properties are tangible assets; while they exist in a physical sense they are less liquid than shares and more capital-intensive than other consumer good like clothing or food (Floyd and Allen 2002). Therefore, financial feasibility and the estimated profitability of the project are crucial pieces of information for decision-makers. Investors employ a number of financial methods which are derived from the quantitative field, to determine the feasibility of the project. These include, among others, payback period and internal rate of return (Larsen 2003, Maczynska 2008):

1. Payback period illustrates the years required for the recovery of initial investment.
The general rule of this methods can be described as - the shorter the payback period, the greater the possibility that investment will not fail.
Payback period = Equity investment/ Annual after tax cash flow
2. Net present value (NPV), method used to discount future cash flow to its present value. NPV is a difference between present value of cash inflows and the present value of cash outflows. It is used to evaluate whether an investment is able to generate enough cash flow to generate a return. Investment can be accepted if $NPV \geq 0$, but if $NPV < 0$ investment should be rejected.

Most of real estate models and forecasts are of a quantitative character and as most tools used in the statistical or economic field use simplification and data aggregation, which can lead to errors and misjudgements of trends and issues (Geltner et al. 2006; Brooks and Tsolacos 2010). Quantitative forecasts are appropriate when historical data is available and when the relationships among variables are expected to stay constant in the future (Anderson 2005). As historical relationships in the researched area become less stable, quantitative forecasts can become less accurate and produce false results (Ratcliffe 2008). In the case of real estate market forecasting and analysis reasons for inadequacy and errors can lie in the nature of the market alone. As described in section 2.2, the real estate market is imperfect, while it consists of a number of distinct yet interlinked sectors and information flows about the value of transactions are poor (Leishman (2003)).

Accurate forecasts can build a competitive advantage for organisation, significantly support strategic management processes and contribute to the success of companies (Passemar and Kleiner 2000; David 2001). Quantitative forecasting based on econometric and statistical models became accessible to a growing number of companies with the advancements in computer software (Leishman op. cit.). Presently available software packets like Statistica enable business analysts and researchers to almost automatically generate complex models based on the time-series data and elaborate calculations (Sweeney et al. 2013). Additionally, quantitative forecasting techniques are in many cases cheaper and faster than qualitative methods (David op. cit.), but researchers like Brooks and Tsolacos (2010) note that quantitative methods are more often used without validity and adequacy. Ratcliffe (2007), tackling the issues of overuse of quantitative techniques in the commercial real estate industry, points out that

this approach is rational, linear, trend based and not adequate for exploring and explaining multi-various factors, trends, issues and challenges facing and shaping contemporary real estate markets. Ratcliffe (2009) advocates more frequent use of a qualitative approach to the analysis of the contemporary real estate markets, which is already employed in various economic fields in analysing imperfect markets. This includes the problem with information scarcity, lack of historical data and complex system variables prone to change.

2.6 Strategic planning in the commercial real estate industry

This section is focused on the meaning and methods of strategic planning applied by real estate companies in the commercial property market. Discussion is initiated with a brief overview of origins and purposes of strategic planning and importance of this field for the commercial real estate companies and followed by comparison between quantitative and qualitative approach towards long-term planning in business strategies.

2.6.1 Approach towards strategic planning in the commercial real estate industry

“The past is history and strategic management is concerned with future action, but the best evidence about the future may derive from what happened in the past.”
Lynch (2009:83)

Starting with a brief overview of the field it needs to be pointed out that strategic planning as a part of strategic management field⁵ originated in 1950s and gained importance in the business world 1960s and 1970s. In the 1980s, as a consequence of economic shocks and the rate of change, various planning models and methods were cast aside by many practitioners as not fit for the market reality (Lassarre op. cit.). Dynamic changes taking place on the markets in past decades forced adjustments in the approach towards planning, decision-making and business operations among companies from practically all economic sectors, like banking, investment, logistics, and real estate. Planning became a more complex task with the expansion of companies into new markets and the race for competitive advantage in the 1970s and 1980s (Porter 1985, 1998, 2005; Lassare 2007; Henry 2008). Since then it became an import tool to identify and explain opportunities, minimise effects of adverse conditions and changes and encourage forward thinking and favourable attitude towards change (Greenley 1986).

Although the field is not a novelty there are numerous pitfalls, which are repeated by companies including non-systematic analysis leading to accumulation of vast quantities of data and information without proper analysis and understanding and implementation of too formal planning style, which does not allow creativity and flexibility. The response to these issues could be the Futures approach, which is the subject of this thesis.

⁵ Frequently the term strategic planning is used synonymously with the term strategic management in the business and academic world (David 2001). Contrary, for Thompson and Martin (2005), and Lassare (2007) strategic management is a broader field than long-range planning alone, and is divided into three areas: strategy formulation, implementation and evaluation. For the purpose of this doctoral dissertation distinction and separation of strategic planning from the strategic management is important to emphasize. The author of this study follows views of Thompson and Martin (2005) and Lassarre (2007).

The strategic management process requires development of a set of decisions, commitments and actions needed by an organisation to succeed on the market (Chambers and Taylor 1999; Pearce and Robinson 2005); it is performed by practically all business enterprises in a structured or less formal form (Hitt, Freeman, Harrison 2005; Hitt, Ireland, Hoskisson 2007; Morden 2007). The concept of strategic management process has four major components, which are inter-related and inter-dependent (Rowe, Mason and Dickel 1994; Sadler 1998). These are:

1. Strategic analysis and planning – focused on internal capabilities and external environment of the company. Its aim is to identify internal strengths and weaknesses, together with external opportunities and threats facing the organisation. This includes political, social and environmental factors crucial for operating and growth of specific enterprise. The analysis contains possible source of value addition and competitive advantage, as well as limitations and constraints threatening the achievement of aims and objectives (Henry 2008). Planning⁶ is the attempt to anticipate the future factors and environment changes, which can directly or indirectly influence the enterprise and its operations (Pettigrew and Whipp 1991).
2. Strategy formulation and strategic decision-making - in this phase of the strategic management process company's mission, vision, objectives and strategy are developed. Using the results of the strategic analysis and planning phase decision-makers chose how to formulate plans and strategies, define alternative strategies and crisis management procedures, decide how to allocate company's resources, and set controlling mechanisms (Lassarre 2007).

⁶ This doctoral research is focused on strategic analysis and the planning phase of the strategic management process in the context of commercial real estate companies' practice.

3. Strategic choice - it is applied to identify the alternatives available and to the company (Morden 2007). It includes decisions about: expansion into new markets, change of suppliers and growth of market share, launch of new products and services or closing of the production line, mergers, acquisitions and new investments. The aim of this phase is to choose the most appropriate strategies from available alternatives identified in the previous stage of the process, which will fit the objectives.
4. Strategy implementation - in essence it is putting the chosen strategies and plans into practice. It is a key element of the strategic management process and is highly dependent upon managers' skills and knowledge, resources availability and financial standing of the company (Ward and Peppard 2002; Morden 2007). Figure 2.6 below presents components of the strategic management process.



Figure 2.6 Components of strategic management process

Source: Based on Morden (2007:17)

For number of reasons strategic planning could be important for companies from the commercial property field. This could be market cyclicality, a high unit price of properties, as well as information asymmetry. As signalled in the introductory chapter, certain catalytic events force enterprises to engage in planning. Hewlett and Kaufmann (2008) describe six types of events that are catalysts for real estate companies to engage in strategic planning (see Figure 2.7).



Figure 2.7 Reasons for strategic planning among real estate companies

Source: Based on Hewlett and Kauffman (2008)

Changing economic and real estate environments are frequent phenomenon usually occurring with shifts in the business cycle. Changes in ownership or leadership in a real estate company can increase the need to review the strategy or adjust it to new circumstances. Mergers and acquisitions can be another reason for a change in strategies of companies involved in the process. Merging companies often search for synergy and common objectives. In case of acquisition the buyer usually imposes its strategy to the purchased company (Addo 2000). Tremendous growth can be a positive signal and stimulus to the successful company to review its strategy and plan according to new objectives. Challenges to growth and legacy in any real estate company are likely to occur at each stage of the economic cycle. Their source can lay, for instance, in loss of financial liquidity, adverse marketing and a decrease in sales, image or reputation

problems. These challenges are likely to cause rationalisation of expenditures, reduction of employment level, services and products offered. Responding to market changes often requires difficult and courageous decisions concerning inter alia operational structure, finances, and marketing (Leinberger 1993; Bennis and Naus 1997). Prevailing methods and often managers' mind-sets are focused on short-term decision-making and positioning the business in the existing competitive space instead of developing of long-term strategy (Ratcliffe 2006).

Numerous authors point out that strategy can be divided into Henry (2008), Johnson, Scholes and Whittington (2008), Wittmann and Reuter (2008):

1. Corporate strategy, concerning the broader issues of industries, in which the organisation wants to compete and it deals principally with mergers and acquisitions.
2. Business strategy, or competitive strategy describing how a company is planning to compete within a particular industry or market sector and how it will achieve a competitive advantage.
3. Functional strategy (Operational), it deals with functional issues and decisions about research and development (R&D), marketing, and finance.

McMahan (2006) emphasizes that the commercial real estate industry is often considered as the one having difficulties in adopting management concepts and tools already successfully used in other industries; reasons for this can be found in the lack of organisational leadership, high levels of financial leverage, and functional organisation of real estate enterprises (Muhlebach and Alexander 1997; Geltner et al. 2006). However, these objections can be addressed to most of industries or companies (Ohmae 1982). Historically, real estate companies had a local focus, and in most cases, small

and medium companies still do (Das and Pani 2005). McMahan (Ibid.) also points out that the primary focus of real estate companies is on the product rather than the customer. This approach did not foster long-term relationships with clients and did not require long-term planning. Also, strategic planning was not adapted by commercial real estate companies as fast as by other industries, for instance, the automotive or technological industries (Hewlett and Kaufmann 2008).

2.6.2 Quantitative versus qualitative approach towards market analysis and planning with the commercial real estate industry

Overall, real estate market studies and analysis can be divided into two broad categories: general and specific (Larsen 2003). General studies are used in real estate to determine the conditions, constraints and potentials of the market. A specific study concerns a particular property, location or client. Quantitative methods, statistical, econometric, and mathematical, are used extensively in both types of commercial real estate industry studies. Brokers, property managers, surveyors, investors and developers use a quantitative approach for models building, forecasting and predictions concerning market conditions and dynamics, property value, rents or investment return estimation and financial reporting (Leishman 2003; Brooks and Tsolacos 2010; O'Mahoney 2010).

Leishman (2003), Evans (2004), McDonald and McMillen (2007) and Suarez (2009) see the strengths of applying quantitative methods in the commercial real estate industry practice in the following issues:

- Numerical data are easy to compare with each other, for example, apartment transaction prices in different cities or countries.

- Results are simple to present graphically in the form of charts, graphs.
- This type of data allows minimisation of subjectivity, which is crucial in property valuation and estimation of return on investment.
- Researchers do not interact with subjects personally, but they evaluate data sets and make conclusions based on statistical and mathematical calculations (avoidance of researcher bias).
- Allow studies on large number of subjects and data sets covering long periods, like decades long market cycles, historical data from previous years.
- Usually are less expensive to conduct than methods requiring personal contact with subjects and including travel costs, phone and other electronic media costs.

According to the same authors, one should be aware of weaknesses of relying only on quantitative data in the market analysis and planning Leishman (2003), Evans (2004), McDonald and McMillen (2007), Suarez (2009):

- Problems with access to reliable market data, for instance, actual transaction prices for selling an apartment or renting the office space, which could be purposely understated to reduce the taxes.
- Static character of the data reflecting past situations, whereas trends do not always extrapolate from them. This can lead to omission of new developments like forthcoming financial downturn or mortgage crisis.
- Representative sample can be difficult to identify, while real estate market has a local character, properties are heterogenic and comparisons between cities or countries can be inadequate and lead to false conclusions.
- Similarly to the previous point there is also a possibility of over simplification of the reality in the process of data gathering and analysis.

In the property business emphasis is set on the quantitative approach towards analysis, and planning (Leishman 2003). On the one hand, sampling theory, investment return estimation or rent determination models cannot and will not be replaced by qualitative methods in property surveying, management or brokerage. On the other hand, extensive use of quantitative methods raises the issue of keeping a balance between comprehensiveness and details, and relevance and clarity of the results. Ratcliffe (2008, 2009) argues that the domination of the empirical and retrospective approach in real estate can lead to oversimplification of the market reality and oversight of change signals and trends, which potentially can have a great importance for the future of the industry.

The main weakness of the quantitative approach is that in the property industry datasets regarding transaction prices and valuations can be limited, incomplete and are often expensive (David 2001; Leishman 2003). These constraints and conceptual limitations, along with the recent adverse market conditions, raise an argument that a combination of quantitative and qualitative approaches may lead to more valuable analyses and planning in this industry (Ibid). Qualitative methods can be useful when historical data are not available, the number of trend discontinuities increases and variables change (David 2001). Among other reasons for applying qualitative methods in real estate companies are internal and external premises including (McMahan 2006; Henry 2008; Ratcliffe 2008):

- Progressing the shift in the commercial real estate industry from product to customer orientation.

To clarify clients' needs or develop new services concerning properties creative thinking and interpersonal skills could be valuable;

- Importance of benchmarking the competition with a growing number of real estate corporations and expansion to international markets property companies, once facing local competition, now need to face global competition. Through benchmarking ‘best practices’ can be identified and applied in company in order to enhance attractiveness and strengthen its competitive edge;
- Significance of monitoring the external environment, including political and social trends, which can be used for identification of new services, products, and entire new strategies for companies.

Qualitative methods, like any other methods, are not universal and cannot be applied without critical consideration of their relevance and value to the specific problem. Most significant strengths and weaknesses of applying qualitative methods identified on the basis of work of authors like Leishman (2003), Evans (2004), McDonald and McMillen (2007), Suarez (2009) include:

- Possibility to obtain personal insights, comments from the professionals, for instance, during the interviews, focus groups or expert panels.
- Flexibility in data collection. Depending on participants’ choice, their time-commitments or circumstance beyond one’s control, focus group or brainstorming session can be easily changed to one-to-one interview conducted face-to-face or over the phone.
- Opportunity to investigate the phenomenon beyond the numerical evidence. A chance to gain information about the context of specific investment decision, and to ‘look behind the scenes’, to understand why specific investment succeed or failed for reasons other than finance.

- Chance to define new categories, issues and ideas emerging from interviews, context and participants insights and intuition.

Despite numerous advantages, qualitative approach applied in the profit driven industry like commercial real estate can also create considerable amount of weaknesses discussed by authors like Evans (2004), McDonald and McMillen (2007):

- Hazard regarding researcher bias caused by personal interactions with subject of study influencing judgments of a situation.
- Difficulty to compare the results of studies without coding and defining the terms, like for example, safe or liveable neighbourhood, or affordable housing.
- Lack of consistency leading to false conclusions in case of obtaining multiple and different responses.
- Gathering of non-numerical data can be a time-consuming process. In case of conducting interview could require an hour or longer, workshops and expert panels could be planned for couple of hours to even several days demanding from the participants to take time off the work.

Drucker (2007) pointed out that in the business world tools alone are not as important as the concepts, approaches and intentions hidden behind them. To survive in the current business environment understanding and ability to use information to create future plans and actions is far more important than analysis of data sets from the past and duplication of already existing solutions (Ratcliffe 2008). In the commercial real estate industry use of qualitative approach towards planning and market operations is still a novelty (Geltner et al. 2006). Although qualitative methods and cannot replace quantitative methods the combination of both can offer many benefits to companies (David 2001),

as organisations need to be aware of the events taking place in the environment and be able to estimate numerically the impact on industry and their own business (Henry 2008). There are property companies, among them ARUP, King Sturge and Johnson Controls, which look at ways of combining both approaches in their market analysis and planning, including futures projects.

2.7 Synthesis

This chapter highlighted mechanism and numerous issues concerning analysis and long-term planning performed by companies from the commercial real estate industry. Among them were general problems affecting majority of companies. For instance, growing pressure on accountability and operational transparency, causing specific difficulties for real estate companies like security of physical and virtual space, costs of buildings' operations, and law-enforced carbon dioxide emissions cuts for buildings' operations. These challenges, often neglected as not relevant to the business or not taken into account by decision-makers, require more frequent application of analysis and planning methods going beyond numerical data, especially in the case of issues regarding social and cultural matters like responsibility, values or ethics.

Factors like change, risk and cyclicity on the market and a greater global competition entail from commercial property companies more often than, for example, in the 1980s or 1990s to monitor their external and internal environment and search for early warning signals and new trends. Market practice described in this chapter proves that in comparison with chemical or automotive companies, property firms fail to recognise the change and focus main resources on short- term gains.

Consideration of the qualitative approach to use as a support of existing analysis procedures is needed not only due to changing economic conditions and socio-environmental factors but also due to information asymmetry and lack of transparency. Scarcity of reliable data and data sets leaves space for speculations, which can destabilise the market and misinform analysts and planners. Although there is a progress in information sharing and data availability forced by law regulations, market demand and expansion of information technologies, the discussion conducted in this chapter demonstrates the gaps between the quantitative approach towards analysis and planning among property firms and challenges of qualitative nature.

Reflecting on the arguments presented in this chapter, it becomes apparent that there is a need to consider also possibility of applying a qualitative approach; this needs to be executed in a structured and rigorous manner complementing traditionally applied quantitative methods to allow deeper analysis and understanding of forces shaping the market. To test this proposition the following chapters present theoretical discussion on qualitative methods derived from the Futures field and investigative case study, in which futures methodologies and methods were applied to analyse complexity, uncertainty and change in the built environment, particularly in also commercial real estate industry, to produce a global property perspective for sustainable development of initiative.

Chapter 3: Futures Methodologies and Strategic Planning Field

3.1 Introduction

This chapter provides an overview of the key concepts underlying the Futures field, its methodologies and methods. It begins with a discussion of the Futures origins and definitions of Futures Studies, Futures Research, Foresight and Prospective and then major futures methodological processes and methods are presented and examined in detail. This chapter also includes discussion outlining similarities and differences between futures methodologies and strategic planning processes. Finally, it concludes with an investigation of the main challenges and examples concerning the use of futures methodologies in the strategic planning processes, with specific consideration of the commercial real estate industry.

3.2 Origins of the Futures field

Interest in the future accompanies people for centuries. Jemala (2010) reminds us that the roots of long-term forward thinking can be traced back to ancient Egypt (about 3000 BC), the Oracle of Delphi (about 600 BC) and the Chinese military strategy (722-481BC). In those times the desire to anticipate or foresee the future was manifested in the form of prophecies. Later approaches included forecasting and also long-term planning discussed in the previous chapter. In case of the Futures field traces of the systematic futures thinking can be found in the concept of ‘Professors of Foresight’ originated by Wells (1932). He recognised the growing need for specialists able to explore future outcomes of present developments. In other words, Wells signalled the

urgent need for a proactive, rather than reactive approach towards analysis and planning. Wells' essay could be considered as a manifesto of his concept. It was presented on BBC radio on 19 November 1932. He justified his viewpoint in the following way:

“It seems an odd thing to me that though we have thousands and thousands of professors and hundreds of thousands of students of history working upon the records of the past, there is not a single person anywhere who makes a whole-time job of estimating the future consequences of new inventions and new devices. There is not a single Professor of Foresight in the world. But why shouldn't there be? All these new things, these new inventions and new powers, come crowding along; everyone is fraught with consequences, and yet it is only after something has hit us hard that we set about dealing with it.”

(Wells 1932)

The emergence of a structured future-oriented field known as Futures Studies is largely a phenomenon of the last few decades (Schwarz and Svedin 1982). The interest in a discipline focused on the future and forward thinking was ignited by the events of World War II, invention of the nuclear weapon and further by the information technologies revolution (IT), as well as economic markets globalisation (Masini 1993, Bell 1997, Ratcliffe 2002). Since shortly after the Second World War, the field has expanded and moved into numerous directions in the public and private domains, science and life.

Like in the case published in 1972 for the Club of Rome⁷ by Meadows, Randers and Meadows “Limits to Growth” and updated in 2005 as “Limits to Growth: The 30-year Update” the main questions addressed in the study looked at the adequacy of policies leading to a sustainable future and the possibility of creating an economy that could provide sufficiently for humankind. Specific for this study was that the project team working on the publication applied “system dynamics theory and computer modelling to analyse the long-term causes and consequences of growth in the world’s population and material economy” (Ibid.: ix).

The Futures approach was also explored in the military field. Research and Development Unit (RAND) created by General H.H. Arnold in 1945 in the US Army (Bell 1997), contributed significantly to the developed of Futures field. Its early research was conducted for one client - the U.S. Army Air Forces, and was focused exclusively on the U.S. national security (Rand Corporation 2012). Over the years the company became recognised on the market especially because of Herman Kahn and Anthony J. Wiener, who published “The Year 2000, A Framework for Speculation on the Next Thirty-Three Years” in 1967. It included numerous forecasts of the year 2000 (Masini 1993), to mention, but a few: new sources of power for ground transportation, widespread use of nuclear reactors, automated banking systems, personal pagers and phones (Kahn and Weiner 1961). The work of the RAND Corporation contributed to

⁷ Club of Rome was founded in 1968 as an informal, international group of businessmen, statesmen and scientists who are long-term thinkers interested in global issues and challenges. Club aims to identify and communicate crucial problems, which can determine the future of humanity through structured and forward-looking analysis (Vester 1999; Meadows, Randers and Meadows 2005; Club of Rome 2012).

the Futures field in numerous ways; the company developed such essential futures tools as scenario planning (Kurz and Beukema 2000) and Delphi technique (Landeta 2006).

In the 1960s Futures became also a domain of academia. At that time, French futurist Bertrand de Jouvenel wrote a theoretical study of the future, “The Art of Conjecture” (1967), Wendell Bell taught the first future course at Yale University (1963) and Jim Dator at the Virginia Polytechnic Institute (1966). Soon academic institutions like the University of Hawaii (1971) and Finland Futures Academy followed (1998). Also between the 1960s and 1970s two major futures organisations were established, the first one in 1967 in the US called the World Futures Society (WFS) and the second one, in 1973 in Paris, the World Futures Studies Federation (WFSF) (Masini 1993; Bell 1997).

Since the 1960s there has been a shift in the Futures field from “emphasis on predictive approaches to more exploratory studies, and from one-off studies to more continual iterations of the process of envisioning future challenges and opportunities” (FOREN 2001:10). Around 1980s and 1990s Futures concepts and methodologies became a field of interest of strategic planners, although they were often oversimplified as a basic ‘environmental scanning’ tool (Fuller and Tilley 2005; Will 2008). One of the reasons for this was a theoretical difference between two areas. The Futures approach aims to investigate the problem in various contexts and to enhance a chance of detecting as many variables as possible (Hines 2006; Hideg 2007). On the contrary, strategic planning seeks to reduce the scope and concentrates on placing objectives in the close future, to ensure their accomplishment (Ratcliffe 2006).

Looking back at the economic and political history it can be noticed that the first futures planning initiatives were undertaken by the US and Japan around the 1950s and followed by France, the Netherlands, Germany and the UK (Jemala 2010). National Foresight programmes from the recent years (including the UK, Germany, the Netherlands and the US) were mostly conducted at government level and carried out for a variety of reasons including the promotion of research and industry competitiveness (UNIDO 2005). Also, numerous corporations engage more often in futures activities, for example, British Airways (Moyer 1996), Finnair (Future Scenarios 2008), but perhaps the best known and widely quoted example is Royal Dutch Shell (Energy Scenarios to 2050). This shows that it is still a developing field of knowledge and is trans-disciplinary in nature (Slaughter 1996; Inayatullah 1998).

3.3 Terminology

The Futures field is a relatively young but dynamically developing discipline. It is affected by the diversity of approaches practiced by different groups (governmental bodies, academics and business professionals) and applied to various problem-solving projects (military, spatial planning, technology, education, health and demography), and cannot be characterised by a single definition (Masini 1993). Among many descriptions drawn from the literature one can find such basic terms associated with the discipline as: Futures Studies, Futures Research, Foresight or Prospective.

1. Futures Studies

Futures Studies can be described as an exploration of what could happen and what we want to become in the future, based on the present issues, trends and challenges (The Futures Academy 2004). It can be classified as the ‘academic face’ of the Futures field, in contrast to the Futures Research discussed in the next section, which is perceived as a ‘professional face’, and focused on decision-making and policy creating (Ibid.). The term “Futures” often describing the field refers to one of the main assumptions of Futures Studies that one determined future does not exist. Instead, potentially there are numerous futures that may emerge. Masini (1993) organised potential futures into four groups:

1. Possible - what can or could be.
2. Probable - what is likely to be.
3. Plausible - most likely to actually happen among Probable Futures.
4. Preferable - what ought to be.

The exploration of all futures starts with the examination of the present situation, major issues, trends and challenges concerning the researched problem. There could be numerous possible futures, among which the most probable and plausible are identified, and the most preferable are also considered. The strength of this approach lies in the investigation and consideration of various unfolding futures in the context of continuity and discontinuity of the present conditions, not only one most plausible future (The Futures Academy 2004).

Futures Studies is a dynamic and evolving field. That is why there are numerous perspectives and contexts, in which Futures Studies is being described. For Slaughter

(2002), it represents a field that allows people to choose their priorities in the complex present situations and deal proactively with uncertainty and forthcoming change. Inayatullah (2005) emphasizes the importance of the human factor and points out that Futures Studies is about exploring the reality created by humans and deliberating on changing it. Schwarz (2008) offers a similar approach focused on people and their roles in creating the future by making informed decisions through consideration of possible and probable futures prior to decision-making. Fundamental purposes of Futures Studies are to develop, examine and evaluate visions of the future (Bell 1997). Slaughter (1996) highlights that among numerous purposes the field could be used for raising issues of common concern that could be overlooked in the conventional short-term view and publicising the emerging picture of the medium-term future in order to involve the public in the decision-making process.

The possibility of applying a structured and systemic approach to prepare for future change and tackle often complex uncertainties attached to it, is especially important in the modern world, where shifts and shocks are rapid and interconnected like the recent mortgage and financial crisis (Downs 2009). Growing interest in the long-term thinking and planning contributed not only to the development and progress of the field, but also made it more diverse and complex. Ambiguity concerns even the Futures field definition. Authors like Glenn and Gordon (2003), or Ratcliffe (2002) regard Futures Research, Futures Studies, Prospective and Foresight as different methodologies. Others, like Martin and Irvine (1989) consider Foresight and Prospective as terms referring to the same methodology, expressed in two languages: English and French. Therefore, it is important to emphasize that in the context of this thesis Futures Studies

(or Futures field) refers to the entire discipline, and Foresight and Prospective are discussed as two major futures methodologies.

2. Futures Research

Futures Research is an approach referring to the application of futures methodologies and methods in practice to “systematically identify the consequences of policy options and to identify alternative futures with policy implications for decision makers” (Glenn and Gordon 2009). It can also be defined as a strategy for understanding change in the external environment including politics, society and technology. It is focused on decision-making and provides an overview of the forces and issues influencing the subject under investigation to enable considered decisions (Ibid.). It can include research projects and activities carried out by organisations, think tanks and academic bodies aiming to provide decision-makers with reliable information and insights about the possible futures important to consider in the planning processes (The Futures Academy 2004).

Weingand (1995) stressed that Futures Research should not be limited by the use of certain methods and instead multiple methods can be applied. The choice of specific methods depends on the subject under investigation, the project’s budgetary and time constraints, and the researcher’s experience and preferences. Its practitioners usually do not share a common academic background and create project teams consisting of experts from multiple fields.

Historically, one of the best-known examples of the Futures Research unit, already mentioned in the previous section, is RAND Corporation. This corporation evolved from the military field and currently offers analysis, research and consultancy services in areas: energy and environment, health and healthcare, infrastructure and transportation, international affairs, population and ageing, science and technology, as well as terrorism and homeland security (Rand Corporation 2012).

Apart from RAND, nowadays there are numerous companies, research institutes and projects regarding specific areas or issues, which could be classified as Futures Research activities. One of them is “The Millennium Project”. This global Futures Studies and Research project was launched in 1996 and was preceded by a feasibility study conducted by the United Nations University (UNU), Smithsonian Institution, Futures Group International, and the American Council for the UNU (UN n.d.). It is a global participatory Futures Research think tank formed by futurists, academics, business strategic planners, governments, non-profit organisations (NGOs) and many others interested in the global futures. Participants share their views and opinions on various topics, such as global climate change, food and agribusiness in the selected countries, futures of business organisations, gender stereotypes and many others. Its primary products include reports and studies in the field of education, business organisations, food and agribusiness and climate change (Ibid.).

Other examples of Futures Research include academic institutes, organisations and single research units, to mention, but a few: Finland Futures Research Centre (University of Turku n.d.), Hawaii Research Center for Futures Studies (University of

Hawaii at Manoa n.d.), Work Futures Research Centre (University of Southampton n.d.) or City Futures Research Centre (University of New South Wales n.d.). Some of them specialise in one specific area, others conduct projects in various fields from the built environment, spatial planning, energy security, as well as social and cultural change to creative industries.

3. Foresight

The term ‘Foresight’ can be used in relation to processes, studies and techniques for looking at the future and is mainly used in the English-speaking states (Horton 1999; Major et al. 2001; Amsteus 2008). In various studies concerning the long-term perspective Foresight is used primarily as a process and a tool to achieve a specific aim (e.g. Horton 1999; Ratcliffe 2002; Voros 2003, 2006; Fink et al. 2005). Horton (1999) defined and stressed the purpose of Foresight as a tool for developing an understanding and focusing on views and perceptions of process participants:

“... the process of developing a range of views of possible ways in which the future could develop, and understanding these sufficiently well to be able to decide what decisions can be taken today to create the best possible tomorrow” (Horton 1995:5)

A definition created by Coates (1985) in the context of government policy-making refers to Foresight as a mean for creating a common ground, enabling dialog and “fuller understanding of the forces shaping the long-term future, which should be taken into account in policy formulation, planning and decision-making” (Ibid: 343). From the variety of Foresight projects and initiatives undertaken in the recent decades numerous

definitions and approaches were developed (see Appendix 3 for the outline of Foresight history). The overarching and perhaps one of the most recognised definitions of Foresight comes from “A Practical Guide to Regional Foresight” (FOREN 2001), which includes detailed explanation of the systemic and participatory character of Foresight as “a convergence of trends underlying recent developments in the fields of ‘policy analysis’, ‘strategic planning’ and ‘future studies’” (Ibid: v). The aim of Foresight exercises is not to elaborate on the utopian image of the future, but to enable creative discussion and structured anticipation in an interactive and participatory manner (Ayers and Axtell 1996; Will 2008; Borodako 2009). An example for this approach towards the application of Foresight is practice of companies like BASF, Decathlon and Philips. These corporations use Futures as a tool in strategic planning processes (Rohrbeck 2010, Rohrbeck and Gemuden 2011).

3. The Prospective

The French-origin term ‘Prospective’ describes the preferred future developed on the basis of an in-depth study including discussions, workshops and scenario exercises with experts from the research field (The Futures Academy 2004). In essence, it is a structured study of the future aiming to “to develop a strategic attitude of the mind with a long-range view of creating a desirable future” (Glenn and Gordon 2003:6). It is based on preactivity (understanding) and proactivity (influencing) as compared to Foresight that is based mainly on preactivity with the proactivity concept missing (Godet 2001). Referring to the metaphor of ‘hearing’ Foresight is the capacity to hear, whereas Prospective is the ability to listen to particular things (Ratcliffe 2002; Glenn and Gordon 2003), in other words to distil from the flows of information and data, specific issues,

which potentially can have the greatest influence on and shape the future of the researched area.

Prospective embraces not only the study of the preferred future and an evaluation of its possible consequences against given policy decisions, but also the ambition and desire to influence the future and to shape it according to society's wishes. Berger (1957), one of the prospective school founders, formulated guidance regarding the mind-set that should be adopted while applying this methodology. It includes advices to:

- view far away, as Prospective is a long-term activity;
- see breadth-ways, in order to examine interactions;
- look in-depth, so as to become aware of the most important trends and issues; and,
- face risks, because new adventures can lead to the change of long-term plans.

According to The Futures Academy (2004) Prospective should be constructed through consideration of the principles including:

- Visualisation - it is crucial to be able to imagine the preferred future, while pursuance of numerous futures can be an exhausting process leading to no conclusions and valuable result.
- Intelligence - efficient and well thought through use of available resources, time and networks can be rewarding in the process of creating the preferred future.
- Communications - ability to convey and convince decision-makers, stakeholders and other parties active in the research field to support the process is crucial.

- Integration - the real value of this methodology lies not in the results but actually in the process itself. It can become a platform integrating people and ideas, and creating long-term relations and understanding of mutual goals and threats lying ahead.

The division between Prospective and Foresight is ambiguous. For some authors, like Martin and Irvine (1989) they are two terms describing the same futures methodology, but expressed in two different languages - French and English. For others, like Ratcliffe (2002) and The Futures Academy (2004) they are different methodologies. In the context of this doctoral study Foresight and Prospective are recognised as two separate methodologies.

3.4 Futures methodological process

“Methodology is taken to be the overall activity or discipline, with an associated intellectual domain, by which to approach a subject or problem.”

(Ratcliffe 2002:11)

Foresight and Prospective can be both considered as futures methodologies. They are built around the assumption that participation is one of the main benefits of conducting the process (Horton 1999). People play a considerable role in the design and implementation of long-term strategies, their involvement in this type of processes can provide them with the knowledge about possible futures and help to take actions in their specific organisations in order to prepare for the future (Ibid.)

3.4.1 Foresight methodological process

Foresight process requires a combination of creative thinking about the future, eliciting expert views on the future and constructing alternative futures to inform policy making (Andriopoulos and Gotsi 2006; Fuller and Warren 2006). Horton (1999) describes Foresight as a process in which multiple visions regarding the future are developed and actions are taken to achieve the best one possible. Specific procedure used in the process depends mainly on its purpose, aim and subject. Taking into consideration various types of Foresight such as national, regional or corporate (see Appendix 4 for types of Foresight), one should understand that it is impossible to distinguish a single universal process which could be used in all types of projects. Here, the main ones are being discussed. Researchers like Martin and Irvine (1989) distinguished three phases of the process Pre-Foresight; Foresight; Post-Foresight. Each of these phases consists of a number of steps. The Pre-Foresight phase includes search for partners, funding, project managers and participants. Foresight phase, which lies in the centre of the process, involves contacting and consultations with experts and stakeholders, gathering and verifying the information. Post-Foresight phase is focused on communicating the results to all parties concerned with the specific topic.

Horton (1999) also divides the process into three phases (see Figure 3.1 Foresight Process):

1. Phase One: Inputs - collection, analysis and summarisation of data and knowledge regarding trends, ideas, issues, warning signs and wild cards from various sources such as experts groups, academia, business networks, share- and stakeholders.
2. Phase Two: Foresight - conversion and interpretation of gathered data and knowledge into future visions and implications of specific future for a particular

organisation. In other words it is a ‘translation’ of the knowledge gathered in the first phase into terminology and procedures used in the organisation conducting the process. According to Horton (1999) the gathered material should be interpreted in the context of the specific organisation and it could be useful to ask the following questions:

- What does it all mean for the organisation?
- What are the implications for the organisation?
- What can be done today?

3. Phase Three: Output and Action - assimilation and evaluation of future visions to create understanding and commitment to action plans based on the possible futures. Results of Foresight are communicated openly to all stakeholders and preferably used in planning processes by decision-makers.

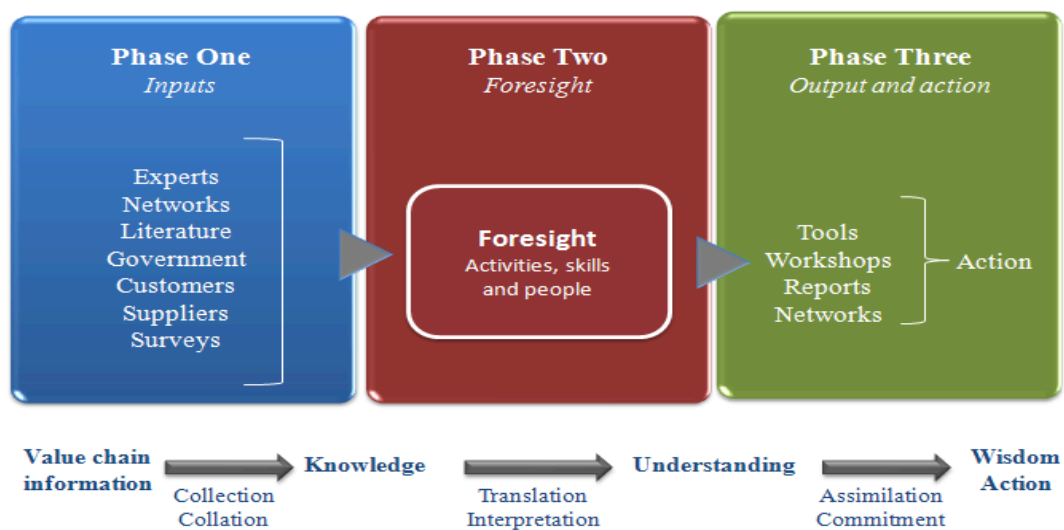


Figure 3.1 Foresight process

Source: Horton (1999:6)

Foresight processes can vary depending on the subject, investigated area, approach, budget or techniques applied in the specific project. For business entities, which are a

subject of this study, Erdmann and Behrendt (2006) propose the following four-step approach:

1. Conduct a scoping study to determine goal and system boundaries, such as time, and scale.
2. Gather and systematise information regarding organisation's environment- internal strengths and weaknesses, external threats and opportunities.
3. Develop alternative visions - scenarios to present possibilities and enable understanding of factors that influence organisation and its operations.
4. Communicate visions concerning the long-term perspectives to staff and transfer them into business tactics.

Specific Foresight projects and their results may differ significantly but the majority of them are based on the structured anticipation and projections of long-term trends. Another feature of many Foresight initiatives is interactive and participative character of the process, which is often perceived as important as the more formal products such as reports and lists of action points. To sum up, crucial aspects and characteristics of the Foresight process can be described as (Martin and Irvine 1989; FOREN 2001):

- concentration on the medium- and long-term view;
- anticipation and examination of long-term trends;
- use of interactive and participative methods, involving a wide variety of stakeholders;
- stakeholders networking, which is often equally important as the final product, such as reports; and,
- development of strategic vision based on scenarios, trends and issues identified in the process.

3.4.2 Prospective methodological process

Similarly to Foresight, there are numerous types of Prospective methodological processes. This section is focused on the methodology applied in the BEF 2030 case study investigated in this thesis as a main source of primary data. Inspired by the work of futurists like Berger (1957), de Jouvenal (1967) and Godet (2001) ‘Prospective through Scenarios’ methodology was developed by The Futures Academy almost a decade ago. Since then, it was applied by the Academy in numerous projects examining the future of cities and spatial planning, for example, “Twice the Size? Imagineering the Future of Irish Gateways” (2008), “Global Real Estate Scenarios” (2001), also “European Real Estate Scenarios: Nirvana or Nemesis” (2005). The first one was undertaken to investigate and promote public discussion about the long-term future of eight Irish gateways designated in the National Spatial Strategy. Two others were undertaken in collaboration with King Sturge. They were focused on driving forces of change and produced scenarios for global and European property industry. Their results became the basis for the BEF 2030 project examined as a case study in this thesis. ‘Prospective through Scenarios’ is:

“(…) the capability of organisations to perceive creatively what is going on in their environments, to think imaginatively through what this means for them, and then demonstrate the readiness to act decisively upon this new knowledge.”

The Futures Academy (2004:11)

This methodology consists of ten consecutive steps and employs numerous futures methods. Each step with adequate methods assigned to it is discussed below and presented in graphic form in Figure 3.5:

1. Set the Strategic Question

At first the research question is defined. Depending on the individual area and setting it can concern a specific organisation, group, policy, nation or country or even a global problem. Critical to this stage is the correct identification and definition of the issue under investigation, for which a future perspective will be explored in the study.

2. Identify Driving Forces of Change

Driving forces of change can be identified on the basis of monitoring developments and trends in sectors like demography, economy, government, environment, society and technology (DEGEST) (David 2001):

1. Demography - migration, births to deaths ratio, average age of population.
2. Economy - trade volumes, currency exchange rates, return on investment, production and consumption of goods and services, infrastructure and transportation.
3. Government - law regulations, taxes, political stability, political conflicts, elections.
4. Environment - climate change, natural disasters, pollution, renewable energy sources.
5. Society - cultural clashes, crime, gender discrimination, education, homelessness and poverty.
6. Technology - information technology, communication and mobility, physical and virtual security.

Other sector approaches (Henry 2009) used to identify the driving forces of change are PEST (Policy, Economy, Society, and Technology) and PESTEL (political, economic, social, technological, environmental and legal issues). Common methods used in this part of the Prospective process) are also interviews with experts, workshops and targeted questionnaire surveys.

3. Determine the Main Issues and Trends

Issues and trends are factors which can have a significant influence on the future. Wack (1985) distinguishes two major types of events shaping the 'future world'. First, predetermined events including issues and trends already evident and influencing all possible futures. Second, critical events concerning issues and trends likely to define or alter the possible futures/scenarios.

As in the case of the driving forces of change, main issues and trends can be identified using environmental scanning, futures workshops, strategic interviews and survey questionnaires. Crucial at this stage of the process is the focus on the most significant critical uncertainties, to avoid information overload hindering the process of data clustering into themes and groups.

4. Clarify the Level of Impact and Degree of Uncertainty

At this stage issues and trends are evaluated through the prism of the degree of uncertainty and their possible impact on the strategic question. Figure 3.2 presents a quadrant matrix often used to clarify and simplify this part of the process. Two areas, uncertainty and impact are used as axes creating dimensions for building scenarios. Methods used to clarify the level of impact and degree of uncertainty, are research tools like futures workshops, strategic conversations and survey questionnaires.

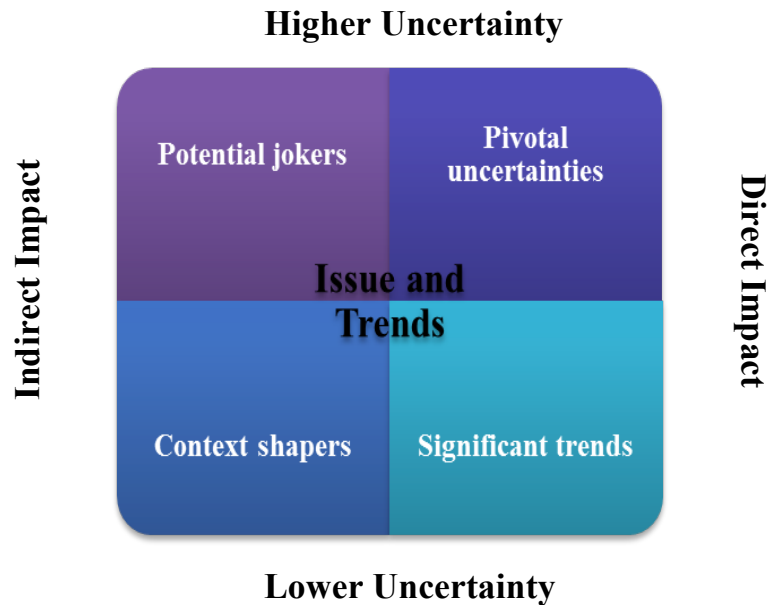


Figure 3.2 Positioning issues and trends

Source: The Futures Academy Compendium (2004)

Four areas within the matrix created by impact and uncertainty axes define the following factors (The Futures Academy 2004):

- *Potential jokers* – issues and trends uncertain to occur and with low impact on the investigated issue, but important to monitor in case of gaining importance and transforming into pivotal uncertainties. In the scenario building process they can be used as factors bringing unexpected elements, which will distinguish a scenario from other stories.
- *Pivotal uncertainties* – factors likely to have a strong direct impact on the researched area but with an uncertain outcome, which could be positive as well as negative. They are classified as key issues and trends constructing and determining the plots of alternative scenarios.
- *Context shapers* – relatively certain to occur with a comparatively low impact on the future developments in the investigated area, usually included in the storylines of all alternative scenarios in the same context.

- *Significant trends* – factors most certain to have a strong direct impact on the future of the researched problem and their effects should be possible to anticipate. Similarly to context shapers, they can be also included in each scenario but the way in which they are merged with the storyline of each alternative scenario differs.

5. Establish Scenario Logics

Scenario logics are central to Prospective process. They are established on the basis of most critical forces, issues and trends identified in the previous stages and grouped into clusters describing their level of uncertainty and impact. The logics can be presented in the form of 2x2 matrix or narratives.

6. Create Different Scenarios

In the heart of the process are scenarios - tools supporting policy creators and decision-makers, developing views of the future, providing insights concerning external and internal business environments with high levels of uncertainty (Stacey 2003). They can differ in:

- methods - like workshops or focus group discussions;
- forms - like narratives, graphic representation;
- time-scale - from couple of years to decades, or even centuries ahead;
- number - most commonly three or four, but there are also cases when numerous scenarios are developed; and,
- approach - deductive or inductive.

Despite the differences each scenario should include three sections (a beginning, middle, and an end); title; time-line and key events. Scenario method is discussed further in section 3.5.2.

7. Test Policy Options

After creating the scenarios, the next step is to confront them with the questions formulated in the initial phase of the process. Testing the policies against the scenarios (called ‘Wind Tunnel Testing’) requires consideration of aspects like strategic implications, possible options, robustness of chosen strategy and possible and required changes in the strategy (The Futures Academy 2008)

At this stage core and contingent (‘back-up’) strategies should be identified. Contingent strategies are produced in case of occurring of ‘unthinkable’ events, which could make the core strategies irrelevant and out of date.

8. Identify Turning Points

Turning points describe indicators, which could potentially have a significant impact and cause positive or negative shifts and changes in the researched field. It is a stage, when possible threats and opportunities should be identified and analysed for their potential consequences (Schwartz 1996).

9. Produce the Prospective

Prospective describes a single preferred future. It is produced on the basis of scenarios, policies and identified turning points. It should propose “a path towards real, implemented action” (The Futures Academy 2008:36), that could support the strategic planning and “influence the future and shape it according to society’s wishes” (Ibid.).

10. Move to Strategic Planning

This futures process assumes use of Prospective in practice, through its application in the strategic planning. As described in section 3.3.2 this pro-active approach differentiates it from Foresight. According to Ratcliffe (2006, 2007) this methodology can be used in the strategic planning to guide the formation of plans and development of shared views among people with power to act.

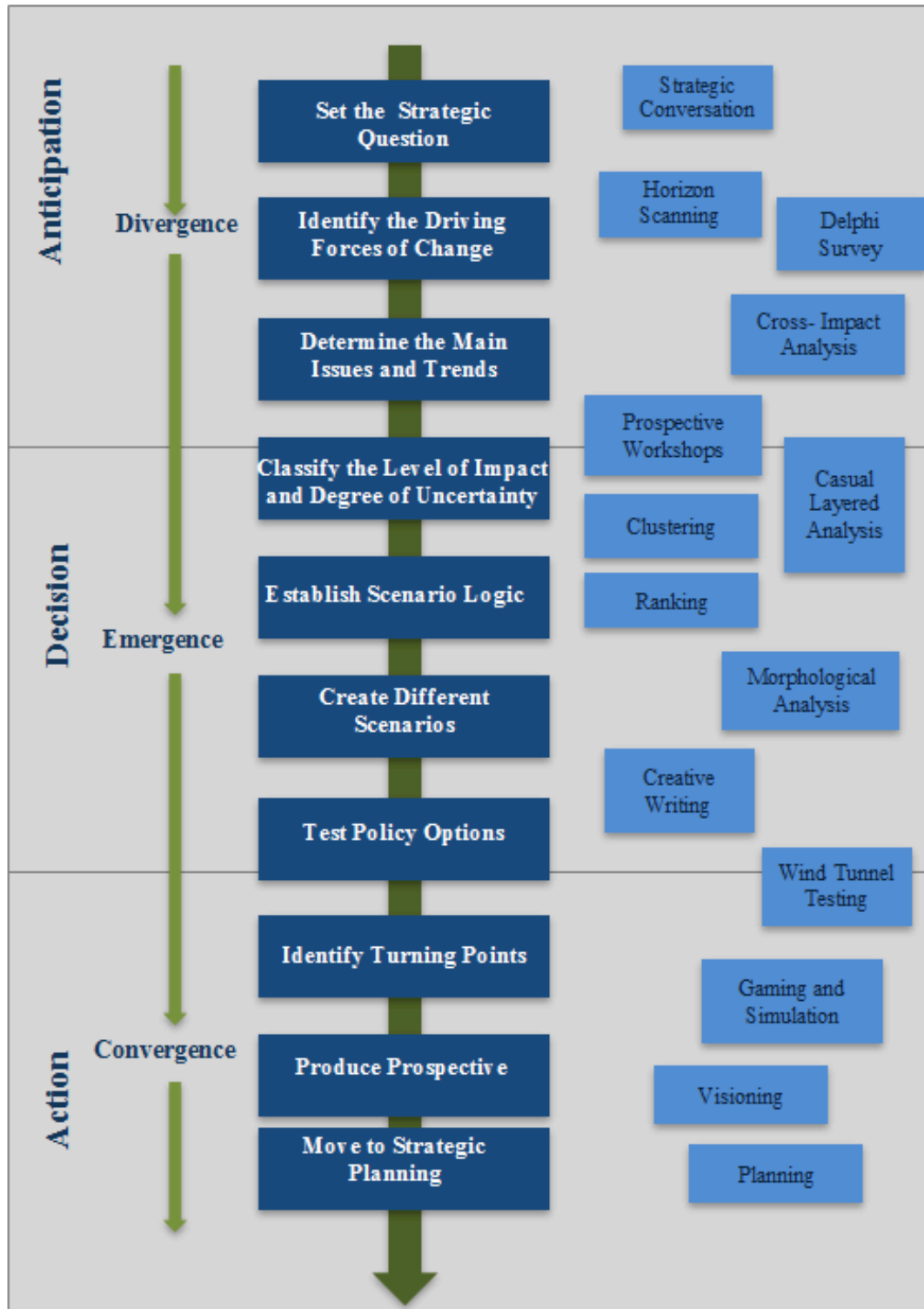


Figure 3.3 The 'Prospective through Scenarios' model

Source: Ratcliffe and Sirr (2003)

3.5 Futures methods

The choice of specific methods depends on various issues, and most of all on the purpose of the exercise. Other determinants are, for example, the length and budget constraints of the project, knowledge and abilities of researchers and number of possible participants. Generally, futures methods can be divided into three groups (FOREN 2001):

1. Methods that are based on eliciting expert knowledge to develop long-term strategies.
2. Methods to identify key points of action to determine planning strategies.
3. Quantitative methods that make use of statistics and other data.

The first group is opinion based methods - qualitative, subjective, dynamic, complex, creative, opinion-based, heuristic, open-ended and textual descriptions like the Delphi survey, strengths, weaknesses, opportunities and threats analysis (SWOT), expert panels and brainstorming. The second group distinguished by FOREN (Ibid.) is methods describing key actions. They could be also of qualitative character and are used mainly in Technology Foresight; among them are decision trees, critical technologies, road-mapping, key technologies, relevance trees and morphological analysis. The third group is quantitative methods. They can be characterised as objective, numerical, deterministic, based on statistics and econometrics modelling, verifiable and closed-ended, like trend extrapolation, simulation modelling, cross impact analysis and system dynamics.

A similar division of methods was created by Popper (2008, 2008a). This author grouped futures methods according to their nature and attributes and presented them in the form of the 'Foresight Diamond' (see Figure 3.4). According to the first attributes of the methods - the nature - they can be classified as:

- Qualitative - methods providing meaning and verbal explanation of events, perceptions and context. They can be based on opinions, beliefs and judgments; therefore, they are often classified as subjective, like interviews.
- Quantitative - methods based on measures and statistical analysis, generating numerical data less prone to subjectivity than qualitative data: for instance, trend extrapolation.
- Semi-quantitative - methods that apply mathematical principles to quantify subjectivity of judgments and viewpoints, like the Delphi survey.
- Other methods, which play a supportive role for the researcher, while applying methods in the futures research process, like benchmarking or role-play.

The second attribute distinguished by Popper (Ibid.) refers to the capabilities of methods - the ability to enable gathering data based on evidence, expertise, interaction and creativity:

- *Evidence* indicates the need for application of numerical, statistical data to explain the issue under investigation on the basis of reliable, measurable and easily comparable information, achieved through the application of modelling and trends extrapolation.
- *Expertise* signifies the necessity for the use of methods enabling gathering of information based on knowledge, skills and insight of individuals, as in the case of expert panels and interviews.

- *Interaction* refers to possible incentives from personal contacts of experts working in the focus group and discussing issues and sharing their views directly, for example, during the futures workshops and brainstorming sessions.
- *Creativity* regards imaginative and outside-the-box thinking leading to invention or origination of new ideas, views on products/services/policies without judging and discriminating others ideas, as in the case of group discussions on scenarios or the identification of wild cards.

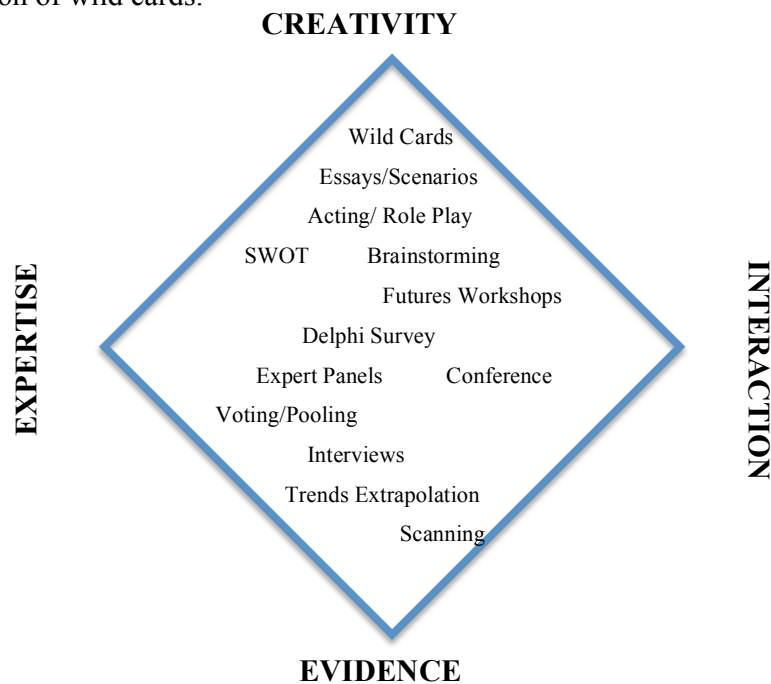


Figure 3.4 Foresight Diamond and Selected Futures methods

Source: Popper (2008, 2008a)

Futures methods can be used in environments where policy-makers have fragmented, unstructured and biased information. They provide clear and comprehensive insight into how policies and strategies might play out in the future (Ratcliffe 2008). Among them are scenario planning, environmental scanning, strategic conversations and CLA, applied in the BEF 2030 study and discussed in detail in the following subsections.

3.5.1 Scenarios

Scenarios are purposefully constructed stories that integrate predetermined trends with uncertainties identified in the researched environment in order to encourage decision-makers to reevaluate their assumptions and test possible policies against developed visions of the future (Schwartz 1996; van der Heijden 1996; Bishop, Hines and Collins 2007). The first scenario-building exercises were carried out in the 1950s by the Rand Corporation for military and international strategy purposes (Bell 1997). Since then the method was used in multiple settings from politics to corporate planning and academic research to enable detection and exploration of possible and alternative futures to clarify the present needs, policies and actions (Ratcliffe 2008). Scenarios can have numerous functions in organisations, from signalling issues, to exploring and explaining the reality and consequences of steps taken (Godet 1987; van der Heijden 2005).

Schoemaker (1995) emphasizes that scenarios attempt to capture the range of possible futures, stimulate forward thinking and challenge the prevailing opinions and mind-sets. According to the author of “Scenario Planning: A tool for strategic thinking”, organisation could benefit from the use of scenarios to virtually any situation in which decision makers would like to imagine how the future might unfold, specifically facing the following conditions, where (Ibid:27):

- uncertainty is highly relative to a manager’s ability to predict or adjust;
- the industry has experienced significant change or is about to;
- the company does not perceive or generate new opportunities, and
- the quality of strategic thinking is low (too reutilised or bureaucratic).

There are various types of scenarios (Schwartz 1996; Fahey and Randall 1998; Chermack 2003, 2003a). Almost all scenarios can be assigned to one of two groups - future backward (the scenario starts in the chosen future state and paths that lead to it are described) and future forward (scenario presents current forces and their possible evolutionary paths towards the chosen point in time, for example, in 5, 10 or 20 years) (Ratcliffe 2000).

Dator (1979) distinguished the following scenario types:

- Continued growth - where the current positive trends are prolonged in the future.
- Collapse - assumes the downturn and deterioration of current trends, rapid negative change in the environment.
- Steady state - describes the balance between present and future; change is an evolutionary rather than revolutionary state.
- Transformation - future differs significantly from the present. The transition was ignited by dramatic change in areas like technology or culture.

Other classification proposed by Fahey and Randall (1998) divides scenarios according to their scope and context into:

- Global scenarios - regarding broad and distinctive perspectives, numerous interconnected circumstances and limitations.
- Competitor scenarios - used to test competitor strategy and alternative outcomes.
- Technology scenarios - supporting technological decisions, indicating future research and investment in the technology.
- Industry scenarios - applied principally in the business context to determine implications for organisations operating in the specific environment.

In the context of this thesis it is worth to emphasize that Fahey and Randall (Ibid.) models refer to organisations and business in competitor and industry scenarios, whereas Schwartz's (1995, 1996) models are focused on organisations:

- Best case - company plans and has resources to move forward, expand and develop.
- Worst case - where situation of the specific business is deteriorating.
- Outlier - future is shaped by suddenly emerging trends and business environment is unstable, nothing is certain.
- Business as usual - nothing changes in the internal and external environment of the company.

Scenario planning is not a novelty in the organisational planning and has been applied in various companies, like Shell, Mercedes, Nestle or Renault for many years now (Schoemaker 1995; Godet 1991, 2001), but this planning tool and its potential is not yet fully recognised by commercial real estate industry. For corporations, like Royal Dutch/Shell, this planning tool proved to be a successful and is applied in order to gain new insights into the future, develop strategic plans that more closely reflect reality, identify key initial markers of trends or event sequences (Schoemaker and van der Heijden 1992).

In essence, scenario method can be a tool supporting managers in developing images of the future for their companies, business environment and other relevant issues (Stacey 2003; Bradfield and Wright 2005). They provide a comprehensive, clear and accessible insight into how policies and strategies might be played out in different futures (Schoemaker op. cit.). By considering alternative scenarios business leaders can ensure

their organisation is well equipped to respond to the opportunities and risks that may arise (Ogilvy 2002; Henry 2008).

3.5.2 Environmental scanning

Environmental scanning (also known as horizon scanning or industry analysis) is a tool used in the process of identifying, monitoring and evaluating opportunities and threats in the researched system (David 2001). Aguilar (1967), who devised a precursor of this method, described it as:

“(...) scanning for information about events and relationships in a company’s outside environment, the knowledge of which would assist top management in its task of charting the company’s future course of action.”

Aguilar (1967:vii)

Henry (2008) sees environmental scanning as an analysis instrument helping to “detect trends in the external environment that will ultimately find their way into the competitive environment” (Henry 2009:51). Authors like Stubbart (1982), Lenz and Engledow (1986) identified the following functions of scanning:

- learning about events and trends in the external environment;
- finding relationships between them;
- identifying main implications for decision-making and strategy development,
- plotting the issues and trends which are likely to impact upon the investigated area/ organisation; and,
- inducing a proactive attitude.

There are various tools for conducting the process of environmental scanning, for instance, already mentioned in section 3.4.2 PEST and PESTEL. Systematic and structured monitoring can allow any organisation to take advantage of opportunities and mitigate threats in their business environment (David 2001; Voros 2001; Henry 2009). According to Lassarre (2007) the environmental scanning process, like any other process used in strategic planning, consists of three stages: identification, monitoring and evaluation of external opportunities and threats. For comparison, Lynch (2009) identified nine stages of environmental scanning. Table 3.1 presents these steps of the analysis together with techniques and possible outcomes.

Stage	Technique	Outcome of stage
1.Environment basics	Market definition and size, share and growth	Strategic opportunity scope Future growth prospects Basic structure of market competition
2. Degree of turbulence in the environment	General considerations about change, degree of uncertainty, complexity	Guidance on initial questions: Is the environment too turbulent to undertake useful predictions? What are opportunities and threats for the organisation?
3. Background factors influencing the competition	PESTEL analysis and scenarios	Key influences and interconnections between the events
4. Analysis of market growth	Industry life cycle	Identification of life cycle's stage Implications for the strategy
5. Factors specific to the industry: what delivers success?	Key factors for success analysis	Factors relevant to strategy
6. Factors specific to the competitiveness	Competitive Forces analysis	Static and descriptive analysis of competitive forces
7. Factors specific to co-operation in the industry	Links and networks analysis	Network and possible co-operation analysis
8. Factors specific to immediate competitors	Competitor and product portfolio analysis	Competitor profile Analysis of market strengths
9. Customer analysis	Market and segmentation studies	Strategy targeted at existing and potential customers

Table 3.1 Stages in the environmental analysis

Source: Based on Lynch (2009)

From the strategic planning stance scanning can improve an organisation's abilities to deal with a rapidly changing environment, by helping to identify early signals of impending problems and providing a basis of objective qualitative information (Jain 1984). According to Choo (1995) information gathered in environmental scanning is more often used in the strategic planning field by private and also public organisations. Despite numerous advantages, this method can have disadvantages. The data collected in the process often has a broad scope and is future directed (Stubbart 1982), which can also be obstacle for those who use it. According to Lynch (2009) it could be difficult to estimate the connection between the strategy and voluminous results of scanning. Therefore, environmental scanning should be used and analysed in the context of a specific organisation, without excessive generalisation (Ibid.). In the context of this thesis regarding futures methodologies and strategic planning it is important to emphasise that environmental scanning "stands at the juncture of Foresight and strategy" (Slaughter 1998:442), and is widely applied in both the Futures and strategic field.

3.5.3 Strategic conversations

The term "strategic conversation" describes informal but structured discussion or interview focused on the strategic issues (Miles, Munilla, Darroch 2006). This method was already applied in numerous studies by The Futures Academy. It is more frequently applied in qualitative studies, as it allows (Kothari 2004):

- Direct access to the interviewees - their personal opinions often not publicised before.

- Language and terminology adaptation - the researcher can adjust them to educational level, knowledge and abilities of the interviewee to avoid misinterpretations and misunderstandings.
- Flexibility of the process - questions can be modified, changed, added or crossed out concurrently with data gathering process, not after the information is collected.

The use of interview or strategic conversation as a research method could also have disadvantages. Major weaknesses of the interview method include (Ibid.):

- In the case of studies concerning a geographically spread sample it can be an expensive means of data gathering.
- Consent of the expert to take part in the interview. Often experts are not easily approachable or willing to take time out to take part in the interview.
- Length of the process. The method can be also time-consuming. If the sample group used in the study is large, arranging and conducting the interview, analysis and interpretation of the data can take a significant amount of time.

According to Van der Heijden (2005) strategic conversation should include a range of initially unstructured views and ideas, and on their basis should be developed a shared and logical interpretations of the world. Among many arguments supporting the use of strategic conversations are (The Futures Academy 2004):

- opportunity to identify weak signals and trends shaping the current and future organisational environment;
- possibility to discuss burning issues of the moment with the insiders understanding the studied field;
- tackling and reducing complexity through explanation and views of the experts; and,

- discovering and comparing the concerns of ‘key players’ about the future outcomes in the research field.

3.5.4 CLA

The CLA method is gaining recognition in the Futures field as a technique enabling examination of the future through multiple levels of understanding. Phenomenon and issues shaping the future are researched not only through data but also through participants’ beliefs, personal opinions about the problem, social causes and metaphors (Inayatullah 2004). Hayward recommends use of CLA in a group work, while it allows ‘in- depth’ but creative consideration of issues in a relatively short period of time, like a one-day workshop. It can be used as a single technique to investigate the problem or part of the research process: for instance, prior to construction of scenarios. It is “a powerful mechanism for generating ideas for alternative futures” (Hayward n.d.), especially in the groups where participants come from diverse cultures and backgrounds. This technique can expand the range and enrich the content of scenarios. It also combines different ways of knowing and understanding among experts and it could shift the study beyond the superficial and obvious to deeper strata of explanation. Experts taking part in the CLA are encouraged not only to use data to define the trends and issues shaping the future but also to focus on deeper levels of beliefs, social causes, metaphors and worldviews described by Inayatullah (1998) as four layers:

1. ‘Litany’. The first level of analysis concerns major and most visible trends and problems like demography or financial crisis. At this stage the events, trends and issues are recognised but rarely questioned.
2. ‘Social causes’. The second level illustrates systemic motives, including environmental, historical and social factors, which are interpreted on the basis of

quantitative data and communicated openly. At this level reliability of data, role of the state, key actors are often analysed and questioned; however, the paradigms within which they exist are not contested.

3. 'Structure' and 'Discourse/Worldview'. The third level is constructed around the search for deeper cultural/social, linguistic processes that are 'actor-invariant' and 'system-invariant' (Inayatullah 2004:17). At this stage, CLA problems and assumptions are revised and discourses concerning worldviews and ideologies are explored and explained.
4. 'Metaphor or Myth'. At the fourth level, archetypes and deep stories, unconscious and emotive assumption like fear of immigrants and unknown cultures are identified, discussed and examined. At this stage of analysis the language of inquiry can be less specific and professional; the aim is to evoke visual images, provoke discussion and refer to the emotions and personal experience of experts.

CLA can be used in the process of scenario formulation. Scenarios created at each of four levels may vary:

“Litany-type scenarios are more instrumental, social level scenarios are more policy-oriented, and discourse/worldview scenarios attempt to capture fundamental differences. Myth/metaphor-type scenarios are equally discrete but articulate this difference through a poem, a story, an image or some other right-brain method.” (Inayatullah 2004:18)

On the basis of Inayatullah's method The Futures Academy developed its own three-level version of this technique, used, for example, in the BEF 2030 study. It consists of:

1. Empirical level - concerning glaring trends, issues and events;

2. Interpretative level - focused on underlying forces changing and shaping the reality using DEGEST;
3. Exploratory level - containing analysis of worldviews, cultures and values of participants.

3.6 Futures methodologies applications in the commercial real estate industry practice

In the case of the commercial real estate industry there are already numerous companies and organisations familiar with and active in the field of Futures, like ARUP, Urban Land Institute (ULI) and King Sturge. First of them, Arup (n.d.), the built environment services and consulting company, opened a Foresight Group. It analyses and communicates publicly the drivers shaping the future of the industry. To communicate with stakeholders Arup uses multiple forms of communication such as Pinboard (database), Vimeo (videos), Twitter (messaging) and blogs (Future frequency, Global village). The company divided its Foresight activities into three areas: make, facilitate and communicate (Ibid.). The first area concerns information coming from the company's practice and experience. The second area is focused on gathering data from workshops and networking with the industry participants. The third area, communicate, concerns publications of research results in the form of reports, educational materials, lectures to communicate ideas and risks and uncertainties relating to the drivers of change in the business context and to react to them creatively. Arup's hallmark publication series, 'Driving forces of change', was initiated in 2006. It is an on-going series and includes sets concerning: energy, waste, climate change, water, demographics, urbanisation, poverty, food, convergence and oceans.

The second example is ULI, non-profit research and education organisation for professionals from real estate and the built environment areas that operates as a platform for the exchange of ideas and experience between members recruiting from almost 100 countries worldwide. One of the aims of the organisation is to “proactively explore new land use paradigms and scenarios” (ULI n.d.). “The City in 2050: Creating the blueprints for change” (ULI 2008) is an example of an active approach of ULI towards researching the future of the built environment. The publication focuses on metropolitan areas and possible urban models in 2050. The project is addressed to real estate professionals interested in ‘new business strategies’ and aims to explore issues conditioning development of economically, environmentally and socially sustainable communities (ULI n.d.). Numerous trends shaping the future of cities were identified in this project: for instance, growth and diversification of urban population, energy prices, climate change and sustainable development and ‘responsible use of land’ (ULI op. cit.). The publication is divided into eight themes: Metro Metrics; The City Wild; Water, Power, Light; Getting Around; Whole Buildings; Full-Spectrum Housing; Plan it. Build It; Click, Learn, Go, Get. Table 3.2 presents brief information on the issues covered in the frames of those themes.

Theme	Areas
Metro Metrics	population, affordable housing, urbanisation, sustainability
The City Wild,	land conservation, city parks, green infrastructure, water and air quality
Water, Power, Light	waste management, low-carbon economy, energy consumption, internet use, traffic congestion
Getting Around	infrastructure, public transportation
Whole Buildings	energy, life cycle of building materials, green buildings
Full-Spectrum Housing	housing costs, household size, community living
Plan it. Build It	urban regeneration, liveable communities
Click, Learn, Go, Get	mix use developments, personal consumption

Table 3.2 Eight themes used in ‘The City in 2050: Creating Blueprints for Change’

Source: ULI (2008)

Additionally to “The City in 2050” project, the ULI conducts variety of programs, to define scenario type solutions for the future of the built environment towards 2050 and beyond, to mention but a few: The Reality Check program (regional visioning tool), “Emerging Trends in Real Estate” series, discussion forums, workshops and interviews with the real estate professionals responsible for planning and shaping the futures of communities and cities (ULI n.d.).

The third example of a real estate company active in the Futures field is King Sturge, a consultancy corporation. The firm cooperated with The Futures Academy and publicised in 2001 “Global Real Estate Scenarios”. The study identified a broad range of drivers forcing change in the commercial real estate industry globally and produced a set of scenarios concerning the future of property sectors, such as office and workspace, warehousing, residential and retail (The Futures Academy and King Sturge 2001). Scenarios were plotted around two issues: economic growth and public intervention. The first of them, ‘Lord of Misrule’, described a social reaction to over-rapid economic and political changes. The second one, ‘Bazaar’, was built around concepts of the free market, competition and technological innovation. The third scenario, ‘Socratic Systems’, assumes the triumph of the knowledge economy, sustainable development and civic society. The publication includes proposals for policies, perspectives and predictions for property markets based on scenarios, such as expansion of home working, the importance of fun factors of retail and leisure, as well as mixed-use developments.

The second project from 2005 “European Real Estate Scenarios: Nirvana or Nemesis?” was carried out by the Academy and King Sturge. It was focused on the European

commercial real estate industry and aimed to identify the drivers of change affecting ‘the old continent’ throughout the year 2020 and to develop alternative scenarios for the future of real estate in Europe. The study described numerous challenges, drivers of change, issues and trends. For example, sustainability, accountability and uncertainty were identified as the major challenges influencing the future of real estate. A set of four scenarios was plotted around ‘Political cohesion’ and ‘Sustainability’. The first scenario, ‘Empyrean’, assumes that the European Union will transform into a sustainable United States of Europe. The second one, ‘Principia Ethica’, describes Europe as economically and politically transparent and stable. The third scenario, ‘Titans of Avarice’, presumes steady economic growth and European markets’ integration. Last, but not least, the scenario entitled ‘Belshazzar’s Feast’ anticipates economic stagnation, worldwide instability, protectionism and social unrest. Occupiers.org (n.d.) described the ‘Global Real Estate Scenarios’ as a significant study asking crucial questions about the future of real estate and searching for forces shaping the industry. In the context of this doctoral thesis the author would like to emphasize that both publications became the background for the BEF 2030 project.

It is also worth mentioning Johnson Controls initiative regarding the future of the workplace. The facilities management company initiated the project in collaboration with the Academy in 2007 as a part of ‘Global Workplace Innovation’ (GWI) program. As a result, three reports were published: “Workplace Futures: A Prospective Through Scenarios” in 2007, “Towards Tomorrow's Sustainable Workplace: Imagineering a Sustainable Workplace Future” in 2008, and “The Smart Workplace in 2030” in 2009. The outcomes of a three-year project were used as a case and discussed in detail in the

doctoral study of R. Saurin from The Futures Academy and for this reason will not be analysed further in this thesis.

Based on the examples given, it can be said that there is a gradual increase of interest and initiatives regarding long-term planning based on the Futures approach. Unfortunately, in the opinion of expert from real estate and Futures field Professor Ratcliffe (2008), the industry still has a long way to go to adopt the principles and to learn to use Futures effectively to respond to the change and challenges lying ahead.

3.7 Challenges concerning the use of Futures methodologies in long-term strategic planning in the commercial real estate industry

Contemporary companies, in order to incorporate futures methodologies into strategic planning, have to formalise the process and validate the results with a reliable systems of measuring. Proper measurement of the futures process results and effects is crucial, while organisations prefer to use tools from which they could derive measurable benefits (Amsteus 2008). Calculating the effects of the futures process, mainly of a qualitative character, in financial terms, could be as challenging as measuring the effects of innovation or training (Horton 1999). Other reasons for the lack of institutionalised Futures approaches in corporation are, for example, discussed by Slaughter (2002):

- a tendency to discount anything that is not empirically measurable;
- short-termism in creating plans due to the human factor – managers tend to opt for plans which could give them benefits in a relatively short-term; and
- lack of funds to investment in acquiring the prerequisite knowledge and skills in the new field.

In a document by Glenn, Gordon and Florescu (2009) the main impediments to applications of futures were listed as:

- financial: lack of funding or the fact that managers holding the budget are unwilling to do so.
- disinterest in future: near-term issues gain more attention than issues that have more distant future consequences.
- strategic: lack of clear-cut strategy and goals; lack of co-ordinated actions among planning and operational divisions.
- complexity: lack of understanding of the magnitude of problems; lack of models showing complex interdependence of events and policies; lack of understanding of consequences of action.

For Futures to gain further legitimacy in the corporate world Slaughter (2002) suggests that decision-making power should be delegated to visionary leaders who are prepared to make much longer-term plans. Education and information concerning basic concepts, tools and methods of Futures should be introduced to the staff at all levels, in order to create the common understanding, commitment and ownership of process and developed results of the process. As Gavigan and Scapolo noticed:

“This is not so much a fashion-driven as it is a necessity-driven trend, as the rules of the game across many relevant spheres (business competitiveness, territorial development, wealth-generation and advancing citizens’ quality of life and standards of living) find themselves in a period of turbulent change.”

(Gavigan and Scapolo 1999:513)

The use of futures methods, like scenarios, could enable identification of new strategic possibilities for managerial consideration. This could be useful not only while planning for the best possible outcome but also in crisis management to assess potential problems and turning points in a particular strategy (Pollard and Hotho 2006). This feature of Foresight is especially important for contemporary corporations, where tremendous progress and increasing material prosperity sit uneasily alongside the continued risks and wealth distribution disparities (Dearing 1999:132).

Futures Studies is a developing field, gaining more recognition in academic and business field. Unfortunately not all developments contribute to its positive image and recognition as a structured and rigorous methodology. Over the past decades a wide range of different approaches, methods and views how and when to use Futures methodologies appeared. This can create confusion and misunderstanding. For instance, there is evidence in the literature that environmental scanning is occasionally confused with the complete Foresight process (Horton 1999). Another fact indicating a lack of understanding concerning application of Futures is that a significant number of Foresight initiatives undertaken in the recent years ended with scenarios and trend analysis as the main output, instead of policy recommendations and research priorities (Jemala 2009). The other issue is terminology. It could be overwhelming and even confusing for newcomers to the field; for instance, two major futures methodologies presented in this chapter - Foresight and Prospective - are used by some authors like Ratcliffe (2001, 2002) as two distinctive approaches, and by others like Martin (1989) as French and British counterpart of the same activity.

3.8 Synthesis

The origins of the Futures field go back to the early years of the 20th century, and it is still a developing area. Referring to the division applied in this study, it can be generally divided into two strands – Futures Studies and Futures Research. The first one was described in this chapter as the ‘academic face’ of the discipline and concerned exploration of general issues, terms and principles of the field. The second was considered as the ‘professional face’ referring to market practice and regarding policy and decision-making. In this thesis it was also assumed that the Futures field is the umbrella term integrating the practical (Futures Research) and theoretical approach (Futures Studies) describing the field.

After discussion on origins of the field and terminology, the two main methodological processes, Foresight and Prospective, were examined. This was followed by characteristics of selected futures methods applied in the BEF 2030 study used as a case study in this thesis. These were scenarios, environmental scanning, strategic conversations and the CLA method.

The focal point of this chapter was a discussion on application and challenges to practical use of Futures in the commercial real estate industry. More often, futures methods, and occasionally methodological process, are recognised and applied in the planning field as tools complementing traditionally used the quantitative approach. Examples drawn from the market practice include companies like Arup, King Sturge and Johnson Controls. Despite growing interest among numerous property firms in Futures, the industry in general still have a long way ahead to adopt Futures principles

and apply them in practice. This will need to be supported by development of procedures for applying methods or methodologies from this field, and by reliable systems of measuring the results and effects of futures processes. Chapter 5 and 6 present the results of the research inquiry regarding this matter.

Chapter 4: Methodology of the study

4.1 Introduction

The previous two chapters identified and explored the need for empirical research regarding the use of futures methodologies in real estate market analysis and long-term planning. This chapter presents the philosophical and methodological approach used to conduct this doctoral research and discusses individual methods used for data collection, analysis and presentation.

4.2 Phases and methodological framework of the study

By taking into consideration the research aim and objectives this study was divided into three distinctive although interrelated phases: one theoretical and two empirical (see Figure 4.1). The theoretical phase was based on a detailed literature review concerning real estate analysis and planning procedures, as well as relations between Futures methodologies and strategic planning field discussed in Chapters 2 and 3. Two empirical phases were used as a source of primary data - the BEF 2030 study and questionnaire results analysis. The first of them is analysed in detail in Chapter 5, the second in Chapter 6 of this thesis.

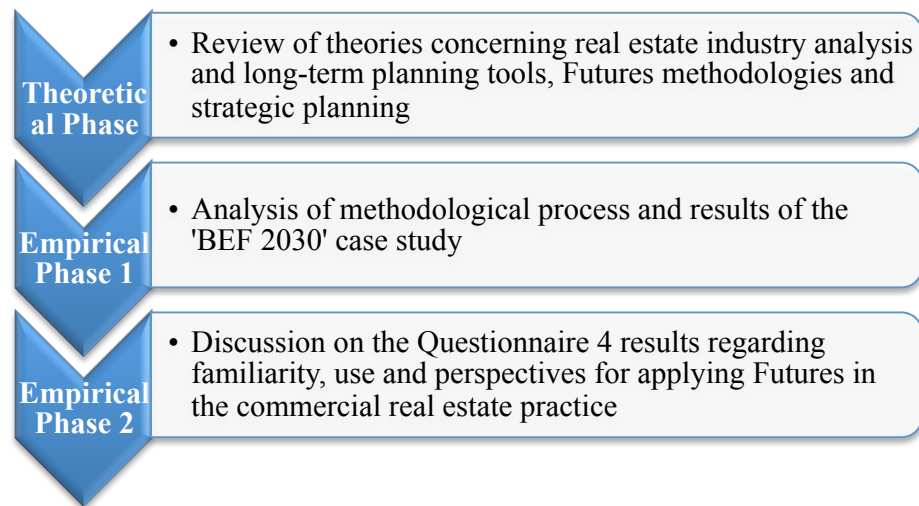


Figure 4.1 Phases of the study

The epistemological foundations of the research have been assessed to be qualitative. It has been also recognised that constructivism and interpretivism represent the underlying philosophy of this study, while case study is an inquiry strategy. Crystallisation and triangulation have been adopted as the most suitable strategies for achieving credibility and reliability in this qualitative study. Figure 4.2 presents a brief overview of the methodological framework of the study.

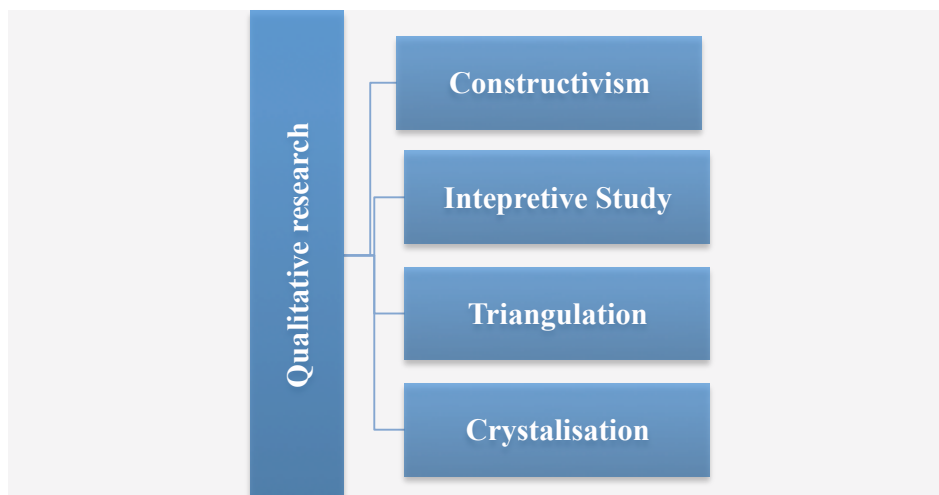


Figure 4.2 Methodological framework of the study

4.2.1 Qualitative character of the research

This doctoral study is based on collection, analysis and interpretation of numerous empirical materials and examples from case study; interviews; observational; historical and visual texts; hence, the character of this research has been assessed as qualitative (Wisker 2001; Denzin and Lincoln 2005). The data in qualitative study is obtained in the form of words and observations, rather than numbers (Huberman and Miles 1994). This type of study involves a “naturalistic approach to the world” (Johnson and Harris 2002:3), analysis of things and issues in their environments and interpretation of their meanings. Qualitative study is the process of contrasting and comparing various sources of information leading to classification and clarification of the researched problem (Bryman 1988; Huberman and Miles 1994, 2002). Maxwell (2005) and Creswell (2007) distinguish the following indicators of qualitative research:

- Natural setting - data about the problem is collected in the field where it occurs, in its natural setting. In the case of this research it comes down to the commercial real estate industry and individual real estate companies.
- Various sources of data - multiple rather than single data sources, like documents, observations or interviews are used in the qualitative research.
- Inductive data analysis - research is usually based on individual cases and data sets organised by the researcher into broader categories and themes (bottom-up approach).
- Interpretive inquiry - qualitative studies use interpretation as a form of inquiry. Facts and data presented as results of the research are interpretations made by the researchers.

- Participants' meanings - qualitative studies are based on participants' views and understanding of the problem instead of the researcher's opinion and assumption concerning the researched issue.
- The researcher is a key instrument - researchers collect primary, open-ended data through literature review, interviews, workshops, focus groups and other techniques, and develop themes and patterns from the data.
- Emergent design - research process is usually flexible. Qualitative research cannot be rigid from the beginning to the end, as there can be changes in the researched field after the process is initiated. The role of a researcher is to recognise the change and react accordingly through modification of the process and replacement of some methods. This requires from the researcher the knowledge and skills to apply various methods and to use them according to the situation.

The qualitative approach towards research concerning long-term planning and analysis of challenges shaping the future of real estate corporations investigated in this doctoral study appeared to be most suitable, mainly because it offers the perspective focused on details about organisational knowledge, everyday actions and outcomes (Silverman 2004; Silverman and Marvasti 2008). The use of qualitative research can lead to advantages like: generation or revision of existing conceptual frameworks and answers to emerging questions not asked primarily in the research (Mertens 1998; Johnson and Harris 2002; Merriam 2009). The results of qualitative studies usually include the views of participants, complex description and interpretation of the problem, as well as reflections of researchers examining the issue (Creswell 2007:37). In this thesis, the opinions and views of property experts were the main source of primary data gathered during the futures workshops, survey questionnaires and strategic conversations with selected authorities active in the European, Asian and North American industries.

4.2.2 The role of researcher in the qualitative study

Throughout the entire research process, from question formulation, through data gathering, analysis and presentation researcher plays a key role in the qualitative study (Miller 2008). Therefore, the researcher has to be aware that her/his own background, knowledge and experience could influence and shape the study (O’Leary 2007). In this doctoral research the researcher has an academic background in the real estate field, which proved to be valuable during conducting the investigation and interpretation of the gathered material. In qualitative research, results may include expected and also unanticipated patterns leading to new answers and often to new questions concerning the researched field and surrounding reality (Creswell 1994; Crabtree and Miller 1999). Data in qualitative studies “emerge from the dynamic intersection of researchers’ and research participants’ unique identities, beliefs, ideas, passions, and actions” (Ibid.:572). Therefore, to conduct and conclude an objective and reliable study the researcher needs to develop expertise in data gathering instruments, control redundancy of cases and examples through purposive sampling (Robson 2002, 2005). The author of this thesis at the beginning of the study had theoretical knowledge about qualitative and also quantitative research tools, which were applied during analysis and presentation of the survey results.

The author took an active part in the study BEF 2030 as a Project Researcher. As a member of The Futures Academy she was involved in the preparation of all four workshops and facilitation of three of them, conducted strategic conversations with 15 experts, developed and distributed all questionnaires and analysed responses, carried out environmental analysis in three ‘spheres’ of real estate corporations activity and co-authored two reports from the study. It is also important to emphasize the role of

networking in the course of data gathering and Prospective process testing. Participation in real estate conferences, such as ULI Annual Meetings 2007 and 2008 and real estate online discussion forums created numerous opportunities for discussion and exchange of opinion during the course of the project and after publishing of the BEF 2030 study results.

4.2.3 Interpretivism

In general, interpretative paradigms and practice are associated with qualitative studies (Beynon-Davies 2002). Interpretive studies assume that “people create and associate their subjective meanings as they interact with the world around them” (Orlikowski and Baroudi 1991:5). Following the Nietzschean approach it can be said that there are no absolute truths and facts, only interpretations (Schacht 1994). In interpretative studies the nature of the researched issue is explained through views and meanings that participants assign to them, not through researcher’s prior understanding of the situation (Sedmak and Longhurst 2010).

Littlejohn (2000) emphasizes that the interpretive paradigm recognises that decisions can be subjective, while individuals act on the basis of their own subjective understanding and view of the situation. Therefore, predictions about the future can be inaccurate. Social reality is a constantly evolving matter, where participants influence each other and change patterns, views and structures (Ibid.). In this doctoral study the issue of application of futures methodologies and methods in the planning process is considered through the prism of personal views and opinions of the BEF 2030 project participants. In this sense, the study became “the reality is in the eye of the beholder, constructed by the research participant” (Sedmak and Longhurst op. cit.:79). In this

thesis the issue concerning real estate long-term planning practice and market analysis is based on the data and observations gathered in ‘the field’, including views and opinions of study participants.

Generally, qualitative studies depend on interpretation to a larger extent than quantitative studies, but this does not belittle the value and credibility of qualitative research (Bhattacharya 2008). On the contrary, if based on the principal knowledge in the researched field, the investigator’s contribution to the study can be positive and useful by offering meaning and lending insights which are credible and trustworthy despite being presented from an involved and contextualised position (Muller 2008). To be specific, practically all research depends more or less on interpretation and contextualisation as part of its method and this doctoral study was not exempt from this; for instance, in the first phase of this research based on the case study opinions and judgments of participants representing three different macro-regions were used as one of the main sources of information.

4.2.4 Constructivism

Burrell and Morgan (1979) regard constructivism as one of four fundamental paradigms (along with functionalism, radical humanism and structuralism) that influence management and organisational thinking. Constructivism creates worldviews, in which individuals seek understanding of reality (Creswell 2007). It enables development of meanings and descriptions of investigated objects, things and issues through exploration of participant’s views. It is an inductive type of inquiry based on interactions between participants and their individual opinions and reflects context and cultural settings, in

which participants live and work Crotty (1998), Neumann (2000), Schwandt (2000), (Creswell 2007).

Perry (2004) describes constructivism through ontological, epistemological and methodological prisms (see Figure 4.3). Ontology relates to the nature of reality, which in case of constructivist research is multidimensional and complex. The task for the researcher is to report and reflect on those multiple realities and perspectives of study participants (Maustakas 1994). Epistemology is concerned with the nature of knowledge and the methods of inquiry (Strauss 1987). In the case of constructivist research, the epistemological assumption is that researcher should investigate the issue directly where it occurs, in its natural setting, where participants live or work (Creswell 2007). Perry (2004) defines the role of the researcher in this type of study as a 'passionate participant' within the investigated world. Methodology, or in other words the procedure of the constructivism research, may vary from interviews, observation to case studies and others.

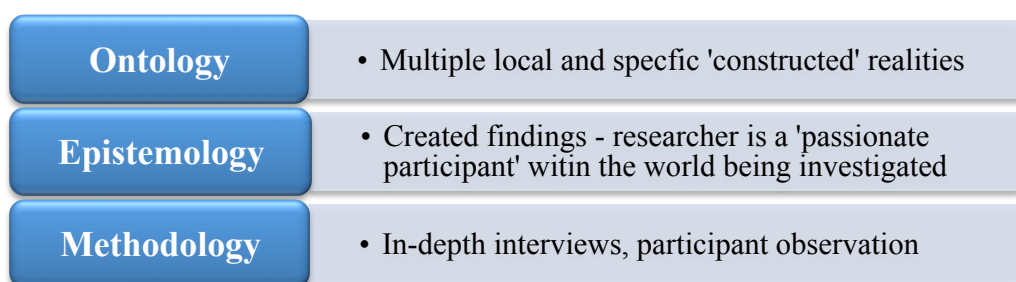


Figure 4.3 Constructivism as a scientific paradigm

Source: Perry (2004)

4.2.5 Triangulation and crystallisation

In all types of academic studies, but in particular in qualitative inquiries, the researcher's role requires reliability and credibility, while gathering and analysing data based on personal opinions and views of participants. To ensure the accuracy of this type of inquiry there is a need to apply proper strategies (Huberman and Miles 1994; Johnson and Harris 2002). In this doctoral study majority of data is of a qualitative character and numerous strategies for achieving credibility were considered. Triangulation and crystallisation were chosen as the most suitable. Authors like Guba and Lincoln (1994) consider both of them as proper strategies to conduct qualitative research, while they are based on multiple sources, conflicting views and differing interpretation, which enrich study and increase its trustworthiness.

The first of the strategies, triangulation, is a process, in which the researcher applies various methods to clarify meanings, interpretation and verify the repeatability of observations (Denzin and Lincoln et al. 2005). In practice it means the use of numerous methods, like questionnaires, interviews or focus groups simultaneously to enable comparison and validation of results concerning the researched problem. Triangulation is a metaphor from the military and navigation field, where multiple points of reference are used to locate an object's position (Jick 1979). In analogy, researcher can improve the accuracy of results by collection of various data on the same problem (Ibid.). Easterby-Smith, Thorpe and Lowe (1991), Dana (2004) identified following types of triangulation:

1. Data triangulation - collection of data on the phenomena from various sources or various time periods.

2. Investigator triangulation - relies on multiple observers rather than individuals gathering and interpreting the data.
3. Theory triangulation - involves use of various theoretical schemes in phenomenon interpretation.
4. Methodological triangulation - collection of data about the particular issue by the use of different methods.

In this doctoral study methodological triangulation was applied in empirical phase 1 of this thesis. This included use of methods like environmental scanning, literature review, futures workshops and questionnaires in the process of primary data gathering analysed in detail in Chapter 5. The second strategy, crystallisation, was chosen as a complementary strategy to triangulation to obtain accurate sets of data verified by experts. It is a process in which the researcher describes the issue from different points of view because it can be perceived and understood differently by individuals depending on their knowledge, culture or analytical skills, and reliable and credible study should be based on more than one source (Denzin and Lincoln 2005). According to Richardson and Pierr (2005) crystallisation provides a flexible approach towards and validity of data, offering multiple perspectives. It combines multiple forms and tools of inference and “deconstructs the traditional idea of validity” (Denzin and Lincoln et al. op.cit.:122), where there is no single truth or interpretation.

These characteristics of crystallisation were crucial in the process of data gathering from the futures workshops, strategic conversations and questionnaires in this doctoral study. Participants of each of regional and global workshop, interviews and online survey respondents represented various property professions from management and

development to architecture and engineering and different level of experience and knowledge including senior analysts, project managers and directors. Another important characteristic of the crystallisation strategy stressed by Richardson and Pierr (op. cit.) and reflected in this study was the issue of partiality of the observation. Crystallisation can provide the researcher with a deepened and complex although partial view of the researched problem, which was important to indicate at the final stage of the study - that is while drawing conclusions regarding the perspectives for application of futures methodologies and methods in the specific sectors of the property industry from consultancy and market analysis to property development. In general, crystallisation and triangulation were used in this research simultaneously to confirm the authenticity of each observations and meanings by the use of number of methods, sources and views describing the issue of long-term planning in the real estate commercial industry viewed through the lenses of participants representing economically distinctive macro-regions.

4.3 Research methods

To fulfil the research aim and objectives presented in Chapter 1, various methods were assigned and used in the process of conducting the study. The primary data research was divided into:

1. Phase One - discussion on the BEF 2030 case study, in which futures methodology and methods were incorporated into real estate market analysis and planning. The results of this phase are analysed and presented in Chapter 5.
2. Phase Two - aiming to investigate and assess the use of Foresight and Futures approaches in the commercial real estate industry on the basis of insights and opinions of BEF 2030 project participants expressed during futures workshops,

strategic conversation and most of all in the Questionnaire 4 regarding application of Futures methodologies and methods by property professionals discussed in Chapter 6. A brief summary of objectives with methods assigned to each of them is presented in Figure 4.4 below.

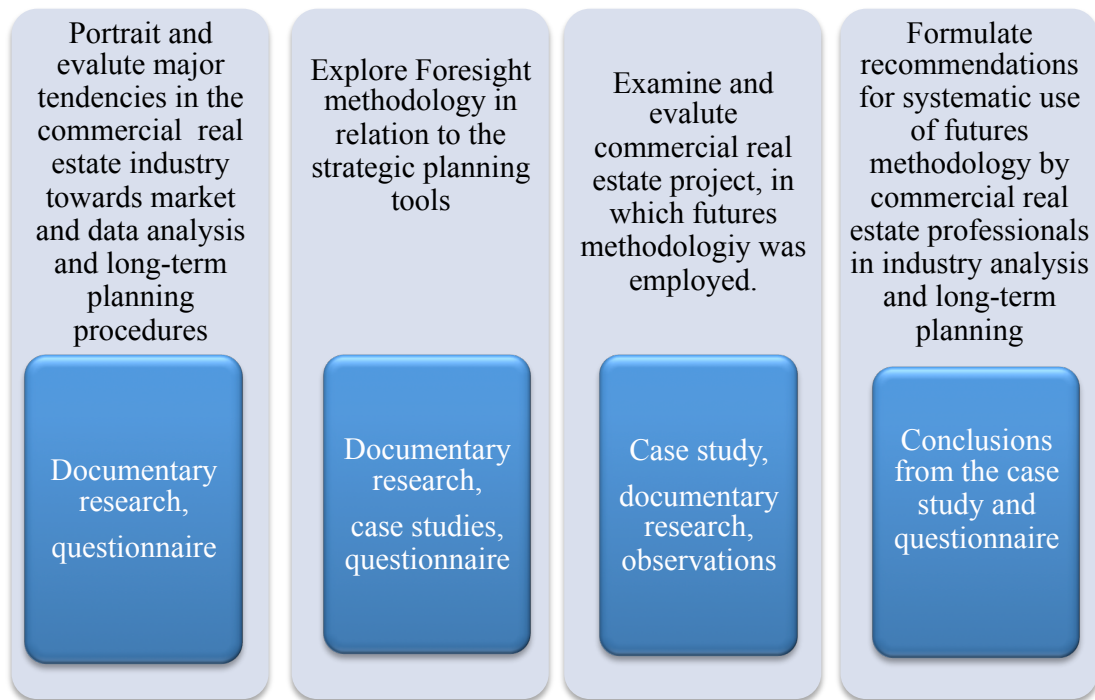


Figure 4.4 Methods according to objectives of the study

As already signalled in the introductory chapter and also earlier in this chapter, it was recognised that the research is of qualitative character and methods descended from the qualitative research field, including futures workshops and strategic conversations were applied. Figure 4.5 presents a list of methods applied in the primary and secondary data gathering. At this point it is important to emphasize that confidentiality and ethics were strictly followed through the course of the entire study, from data gathering to analysis and presentation. In the course of the entire study participants were guaranteed confidentiality for both themselves and their organisations. For example, all questionnaire responses exclude names and personal or business details of the respondents.

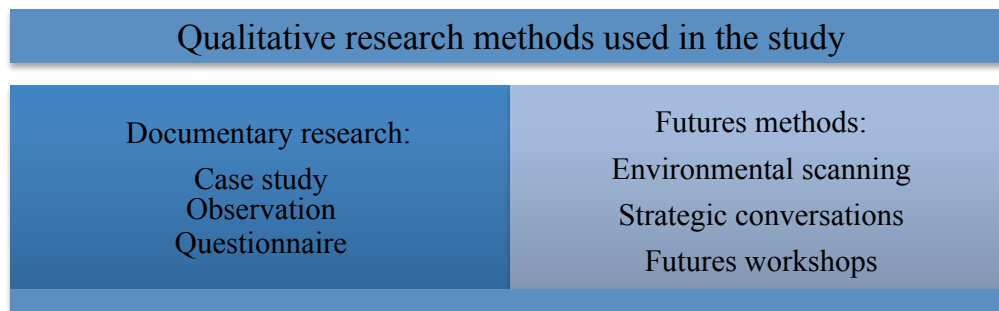


Figure 4.5 Qualitative methods used in the study

4.3.1 Documentary research

Documentary research is the study of a problem through texts and documents, such as articles, research papers, government and census publications and market reports (Scott 2006). In the academic studies it is used to support arguments and viewpoints concerning the researched problem. Research based on documents is conducted to introduce the key concepts concerning the phenomena and demonstrate understanding of the problem and field of knowledge to justify the research topic and necessity of conducting the study (Hart 2001). In the case of qualitative studies documentary research is primarily based on text, audio and video sources (see Figure 4.6 below).

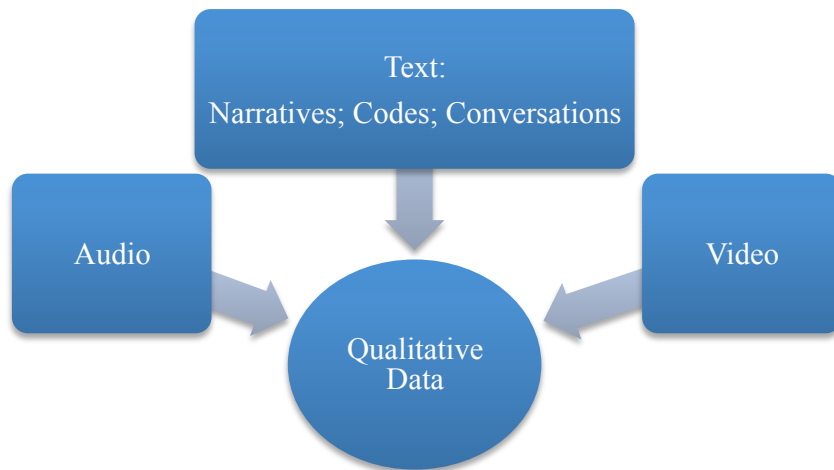


Figure 4.6 Typology of qualitative data sources

Source: Denzin and Lincoln (2005:771)

Text, such as documents, books and articles are sources for the literature review, which is a crucial part of every research project, as it allows the researcher to narrow, define and explain the researched problem, find gaps and new areas in the field of knowledge (Kothari 2006). Documentary research, and particularly literature review, can serve various purposes, including (Hart 2001):

- discovering variables relevant to the research;
- synthesising the existing knowledge and deciding what needs to be done;
- rationalising the significance of the problem;
- placing the research in a historical context; and,
- identifying relationships between issues and the researched phenomena.

Apart from the literature review, including academic journals and textbooks, other documents used frequently in qualitative studies are (Creswell 2007):

- personal journals and notes;

- participants notes;
- correspondence, letters from participants;
- public documents like official memos, meeting minutes, reports published on the websites;
- autobiographies and biographies; and,
- videotapes and audio-recordings.

In this doctoral study documentary research was used to explore general concepts of real estate market analysis and planning in Chapter 2 and applying Futures as strategic planning tools in Chapter 3. The general concepts of market analysis and planning were reviewed on the basis of work of authors like David (2001), Lassarre (2007), Morden (2007), and Henry (2008). Real estate market principles creating the need for planning and analysis among commercial real estate corporations were discussed through theories of Cortesi (1999), Frej and Peiser (2003), and Larsen (2003). Among the examined issues were market cyclicity, change and risk. Market cycles were investigated mainly through the theories of Veblen (1904), Schumpeter (1927), Friedman (1953). Influence of change and risk in the commercial real estate industry was assessed in the context of works of authors, like Drucker (1995, 2007), Conrow (2004) and Hopkin (2010). The documentary research also examined major futures methodologies. The works of Masini (1993) and Bell (1997) on Futures Studies, and Irvine and Martin (1984), Jemala (2010) on futures methodological processes were examined. Also, challenges concerning long-term planning and anticipation in the commercial real estate industry were analysed on the basis of work of Horton (1999), Ratcliffe (2006, 2008), Amsteus (2008). Other literature sources are listed in reference section and discussed in Chapters 1, 2 and 3 of this thesis.

Apart from the printed textbooks, electronic data sources were also used extensively in this thesis. Three major electronic databases exploited in the process of documentary research were: Emerald Fulltext, High Wire (Stanford University) and EBSCO Publishing. All of them provide online databases and publish numerous journals, including management, business and real estate articles. Most frequently searched terms in this study were: real estate corporation, market analysis, strategic planning, Foresight and Futures Studies. Table 4.1 presents the search terms and the number of articles and books found in the databases. On average, 5-10 % of them were directly connected with the researched area and used in the study.

Search term Boolean/ Phrase	Emerald Fulltext Journals	HighWire (Stanford University)	EBSCO
Real estate advisory service	505	3568	116
Real estate market analysis	4253	17822	452
Strategic planning	33374	52850	153466
Futures Studies	3347	23645	114
Foresight	2711	15162	11119
Prospective through Scenarios	12	0	3

Table 4.1 Search results from electronic databases

Source: Emerald Fulltext, ABI/ Inform (ProQuest), EBSCO electronic databases (numerical records gathered on 5.06.2011 from www.emeraldinsight.com, www.proquest.co.uk/en-UK, www.ebscohost.com/discovery).

Other electronic search engines and databases used in this research and accessed through the Internet were: Google Books, Google Scholar and corporate websites. In this study the Internet was used as a:

- tool for collecting and sorting information (databases already described);
- medium for communication with study participants and observers (emails, discussion groups and chats); and,

- means for interfacing distant locations in Europe, North America and Asia - Pacific region.

Use of internet in the research was beneficial in numerous ways, from travel cost efficiency related to the wide geographical scale of the study to environmental considerations, for instance, use of electronic form of articles instead of paper. Another important benefit of using electronic media was the ability to contact specialists according to their expertise and suitability to study instead of their physical location and research budget constraints.

4.3.2 Case study

Case studies enable the research of a problem to be explored through a case or multiple cases set within the context. It is a method of choice “when the phenomenon under study is not readily distinguishable from its context” (Yin 1994:4). This type of research enables the investigator to explore one or multiple bounded systems (cases) through numerous sources of information, like interviews, documents and reports, observations (Creswell 2007). Consensus on the basic characteristics of case study does not exist, mainly because “the term is not restricted to social science research but rather is used in many practical contexts” (Blatter 2008:68). Case study research is primarily a qualitative form of inquiry (Merriam 2009), although writers like Yin (1994) qualify it as both qualitative and quantitative approach. Case studies can be focused on one or numerous instances, but are not restricted to a single observation (Blatter 2008). Generally, depending on the intent, qualitative case studies can be divided into three

groups (Silvermann 1998; Creswell 2007): a single instrumental case study, multiple or collective case study, and intrinsic case study (see Figure 4.7 Types of case study).

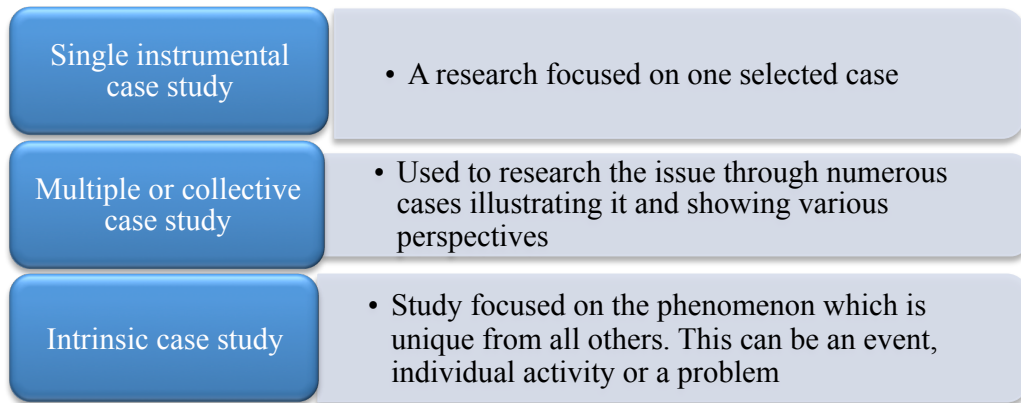


Figure 4.7 Types of case study

Source: Stake (1995), Yin (2003)

Kazdin (1982) lists the following case studies characteristics:

- Involve study of units like individuals, groups, or organisation and allow focusing on one or few instances.
- Presented information and findings are usually in the comprehensive, detailed and narrative form.
- Enclose context, nuances, and details of the case.
- Encourage the use of multiple methods and sources of data.
- Examine retrospective or archival information on phenomena and problems in the natural setting.

The use of case studies as a research tool can be challenging, because they require from researcher the following actions (Punch 1998; Marczyk, Demetto and Festinger 2005; Creswell 2007):

- Choice and critical selection of the adequate case to illustrate the problem from numerous cases available (often described by constructivists as ‘crucial cases’ (Blatter 2008)).
- Choice between single and multiple cases, which is often a choice between an individual in-depth study and less detailed but numerous studies (usually no more than four to five cases).
- To set the boundaries for the study, like time or events.
- To avoid the ‘experimenter’ bias, while this type of studies involves interaction between the researcher and study participants.
- To find a representative case, whether it is a group or individual.
- Credibility of generalisation made from the findings.

In this thesis the interpretative case study approach was applied to examine the BEF 2030 project, in which futures methodology was used. The investigated study, described in Chapters 1 and 5, examines the challenges and issues regarding the future of the commercial real estate industry in the long-term perspective. Its scope reflects major areas of geographical activity of real estate corporations. Analysis of the procedure, outcomes and outputs of this case became a source of information regarding possibilities and difficulties with applying futures methodologies in the commercial real estate industry. Details of the case study are presented in Table 4.2 below. The main criteria applied in the process of examining the case were design of the methodological process; participation; outcomes and outputs.

Analysis of the case study presented in Chapter 5 was based on two written reports co-authored by the researcher (copy of corporate version of the report from 2010 is in

Appendix 5), and oral and written feedback from participants and the author's field notes gathered during this phase of the project.

Sphere/ Case details	Sectors represented mainly by:	Methodology and techniques	Scope
Europe	Real estate investment, Property consultancy, Research, Architecture	Prospective through Scenarios Methodology - Workshops, Strategic Conversations, Questionnaire, CLA	Future of the European commercial real estate industry towards 2030, Major trends, issues and challenges, including green buildings, responsible investment.
Asia-Pacific	Research (Academia), Consultancy	Prospective through Scenarios Methodology - Workshops, Questionnaire	Future of the Asian commercial real estate industry towards 2030, Major trends, issues and challenges, including urban areas, sustainability, housing affordability.
North America	Development, Architecture, Research, Investment, Consultancy	Prospective through Scenarios Methodology - Workshops, Strategic Conversations, Focus Group, Questionnaire	Future of the North American commercial real estate industry towards 2030, Major trends, issues and challenges, including property energy certificates, energy security, urban sprawl, infrastructure.

Table 4.2 Case details

4.3.3 Questionnaire

The questionnaire is a survey tool frequently used in social sciences research (other survey methods are interviews, focus groups, observations), and extensively employed in business and economic research (Kothari 2004). Use of the questionnaire enables systematic gathering of data and information from the units of interest, like companies (Fink 2002). In this method, questionnaires are distributed among survey participants

with a request to answer and return the forms. Usually, questionnaires are sent to the respondents in a paper or electronic form through post, emails or online website services. Questionnaires can consist of numerous questions, in the form of closed, open-ended or multiple or single choice answers etc. Respondents are asked to answer the questions on their own. Questions need to be clear and understandable; therefore, wording is crucial and piloting drafts of questions (pilot study) before sending the survey to the entire sample group is highly advised (Marczyk, Demetto and Festinger 2005).

Kothari (2004) points out major merits of questionnaire use as a data collecting technique; these are:

- Respondents are given more time to think through the answers than in the case of interviews or focus groups.
- In the case of open-ended questions it is free from the interviewer bias, because respondents formulate answers.
- Questionnaires enable study in large samples, like 100 or more respondents, which enhances validity and reliability of the results.
- Lower cost for the researcher to conduct a questionnaire study in comparison to other methods, like workshops.

Questionnaires, like any other method, also have disadvantages; among them are (Ibid.):

- Low rate of return, caused by various factors like lack of time, hesitation to share the information, etc.
- Difficulties in identifying and representative respondents willing to cooperate.

- Length of the answers gathering process; this makes the method one of the most time-consuming.
- Possibilities of replies omissions to certain questions, which could distort the results of the study.
- Trustworthiness of this method can be negated on the basis of non-representative sample, low rate of return, high omissions rate, lack of accuracy between questions and answers given by the respondents.

Generally, while conducting the survey study based on the questionnaire, the focus should be put on the sample group, wording, content and the structure of the questionnaire. A properly structured and formulated questionnaire should be clear and understandable for the respondents and questions should enable collection of information that they were designed to gather (Campbell and Katona 1953). Acceptable response rates may vary depending on the means by which the survey is administered. In case of email survey 40% is perceived as average, and 50% as good whereas while using online survey 30% is average, in contrast to mail survey with 50% considered as an adequate rate (Hamilton 2003; The University of Texas n.d.).

In this research, the survey questionnaire was employed as the key means of gathering quantifiable data on major trends shaping the future of commercial real estate industry and perspectives for application of futures methodologies in the corporate planning processes (see Appendix 6 for a copy of sample of regional questionnaire used in the study). Four separate questionnaires were sent in an electronic form to commercial real estate professionals and academics.

First three questionnaires were used as a source of primary data in the investigated BEF 2030 case study. They consisted of 13 questions and each of them was distributed to 150 respondents in Europe, Asia-Pacific and North America. The geographical division of questionnaires was consistent with the approach taken in the BEF 2030 project, which became a case study for this research. Questions used in surveys were a mixture of open- and closed-ended questions. Potential respondents (65 addresses) of the questionnaire focused on the European commercial real estate industry were identified on the basis of King Sturge's client database. Questionnaires were also distributed to the members of ULI. Names, positions and contact addresses were identified on the basis of ULI Directory Book 2006-2007. In the Asia-Pacific part of the case study, the RICS partners database was used (30 addresses), and also ULI Directory Books from 2006-2007 and 2007-2008 (120 addresses). The North American questionnaire was distributed to respondents on the basis of a list identified from the ULI Directory Book 2006-2007 and 2007-2008 (110 address) and databases shared by real estate departments from Purdue University (USA), and DePaul University (USA) (40 addresses). The fourth questionnaire, used in Phase 2 of this doctoral research, consisted of 8 questions and was sent to 170 respondents who participated in the BEF 2030 project. See Appendix 7 for the list of professionals requested to take part in the survey.

The total number of distributed questionnaires exceeded 600. Most of participants were identified on the basis of the BEF 2030 project partners' databases and networking at numerous conference and workshops between 2007 and 2009. The choice of all questionnaires respondents was made on the basis of a brief background search of their position and seniority within the organisation conducted by the author. Two pilot questionnaires were used during the study to test the clarity of questions. The sample

group to test questionnaires 1-3 was chosen by the author from the list of 25 real estate part-time students from the Warsaw School of Economics with professional experience in the property market; the return rate for the pilot was 12.

In the case of the questionnaire 4, the pilot survey was conducted on the test sample identified among Investment and Real Estate Department Researchers from the Warsaw School of Economics and participants of the European Real Estate Challenge 2007 and 2010 (EREC), in which the author was a tutor. The number of questionnaires sent was 15 and 8 were returned. The results and comments gathered in the testing phase were used to specify and correct the questions used in the final version of the questionnaires sent to property industry experts. Table 4.3 presents compiled information regarding the sources of addresses and number of distributed questionnaires.

Questionnaire	Database	Number of distributed questionnaires
Europe Questionnaire (Q 1)	King Sturge Client Database, ULI Directory Book 2006- 2007	150
Asia- Pacific Questionnaire (Q 2)	RICS Foundation Partners Database, ULI Directory Book 2006- 2007 and 2007-2008	150
North America Questionnaire (Q 3)	ULI Directory Book 2006- 2007 and 2007-2008 Database of Purdue University (USA) and DePaul University (USA)	150
BEF 2030 Participants Questionnaire (Q 4)	BEF 2030 project participants and collaborators	170

Table 4.3 Sources of addresses and number of distributed questionnaires

Questionnaires 1-3 were distributed by email with an attachment. Reminders concerning Questionnaire 2 and 3 were sent out after approximately 4 weeks to enhance the response rate. Unfortunately, only the Asia-Pacific questionnaire reminders led to the

increase of the responses from 21 to 24 in total (see Table 4.4 for questionnaires response rate). Major difficulties affecting the number of returns in Asia-Pacific were the lack of networking due to research budgetary constraints and hierarchy issues (questionnaires were sent by a PhD Researcher to higher-level management. In the case of questionnaires 1-3 another difficulty for respondents was the form in which surveys were distributed. They were attached to emails and this required the downloading of the questions and uploading of the answers in a return email.

Questionnaire	Questionnaire 1	Questionnaire 2	Questionnaire 3	Questionnaire 4
Number of distributed questionnaires	150	150	150	170
Method	Attached in the email	Attached in the email	Attached in the email	Link to the on-line survey
Initial Response	52	21	29	53
Reminder	No	Yes	Yes	Yes
Total Response	52	24	29	71

Table 4.4 Questionnaires response rate

After completing phases 1-3 in November 2009 the researcher became aware of online platforms like QuestionPro, SurveyGizmo, FreeOnLineSurveys, and SurveyMonkey hosting surveys. Online surveys are becoming more popular, because they are convenient for both researchers and respondents. They enable respondents to answer the questions online and send them through the platform to the database of the researcher. From the numerous platforms SurveyMonkey (www.monkeysurvey.com) was chosen to conduct survey 4 in this research. Emails with link to the website <http://www.surveymonkey.com/s/C5Z6SK8> were distributed to 170 respondents, who took part in the BEF 2030 project between 2007-2009 in order to gain their insights on Futures methodologies and methods as strategic planning tools in the commercial real

estate industry. Reminders were distributed through email and the LinkedIn online network. This resulted in a response increase from 53 after first three weeks of collecting to 71 in total after closing the online survey. Table 4.5 below presents the main characteristics of Questionnaire 4.

Details of the Survey Questionnaire	
Form	Online survey posted on www.surveymonkey.com
Time	The questionnaire was open to respondents between October 10 th 2010-January 10 th 2011
Response rate	Email with an active link to the online questionnaire was sent to 170 real estate professionals including academic researchers. The response rate was 42%.
Participants	Survey participants represented the following sectors: asset and property management; appraisal/valuation; consultancy and investment services; agency and brokerage services; development/construction/architecture and academic property research.
Types of questions	The survey consisted of 8 multiple-choice questions. Survey did not include questions regarding the gender or age of respondents.
Limitations	Anonymity – throughout the entire study and also in the survey questionnaire participants were granted anonymity. Respondent were not asked for their names in the e-survey, instead they were requested to specify real estate sector, which they represent. Participants' occupation was regarded as relevant to the study seeking for information about possibilities to apply Futures within the property industry divided into numerous sectors represented in the survey.

Table 4.5 Details of the Survey Questionnaire 4

The questionnaire was open to respondents for three months, between October 10th 2010 and January 10th 2011. Reminders were distributed through email and the LinkedIn online network in November 2010 after five weeks of launching the survey. The decision to send the prompting messages was made upon the fact that between the

third and fifth week the response rate did not change, as there was no new replies. After the fifth week, when reminders were distributed till closing the on-line survey the number of responses increased from 53 to 71 total. That gave an increase of 34% from November 2010 to January 2011.

4.3.4 Observation

Observation is “the action or process of closely observing or monitoring something or someone” (Oxford Dictionary n.d.). This method can be applied for gathering empirical data by human, mechanic and electronic means in the form of notes, recordings, pictures etc. (Angrosino and Rosenberg 2011). Observation allows the recording of information about the situation, action or issues from the primary source and as it actually takes place. It also enables gathering of verbal and non-verbal data, such as the behaviour and mood of participants, which could often provide an additional explanation of the situation. This type of research raises ethical concerns. Participants may not be aware of being observed. Their actions and thoughts could be recorded on electronic devices and referred to in the study. In the academic research this should not invade their privacy and be abusive. The decision to inform participants about the observation depends on the aim of specific study. The researcher may or may not have direct contact with the people who are being observed (Gubrium and Holstein 1997; DeWalt and DeWalt 2011). Generally, the observation method can be characterised by four features (Angrosino and Rosenberg 2011):

1. Form of participation. It can be a participatory or non-participatory process, depending if the researcher takes part in the studies situation.

2. Disguised or non-disguised observation indicating if research participants are aware of being observed or not.
3. Structure. It can be a structured or non-structured procedure with a checklist of steps and tasks to be covered or not.
4. Setting. Observation can be applied in natural or contrived settings.

In this doctoral research, observation was applied in the form of unstructured observations taken during all four futures workshops, which included brainstorming session and expert panel discussions. All observations were documented in the form of recordings and field-notes. Participants were aware of and agreed for electronic recording. Files from the voice-recorder were analysed after the workshops by the author and discussed through e-mails with selected participants depending on their availability to consult issues raised during the panels and confirm the outcomes. Application of observation in this doctoral study can be also described as non-participative and direct. The author had the role of facilitator, listener or observer while conducting the study. It was not a disguised observation, while all participants were aware of the researcher's presence. The researcher observed some clearly defined situations (e.g. workshops). Assessment of the settings in this research can be debatable. Participants were observed in the contrived settings arranged by the researcher or BEF 2030 study collaborators, for instance, at the ULI conference or the RICS Foundation headquarters.

4.3.5 Futures methods

As discussed in Chapter 1 and Chapter 3 Futures is a dynamic, complex and trans-disciplinary field (Masini 1993; Cornish 2004). It developed a wide range of techniques to enable consideration of alternative solutions in the complex and constantly changing settings, like the one considered in this doctoral study. Among various research tools related or descended from the Futures field the main three methods chosen and applied in this doctoral research were:

1. Environmental scanning.
2. Futures workshops.
3. Strategic conversations.

4.3.5.1 Environmental scanning

The scanning procedure consists of a systematic search for the signals, events and precursors of trends in the environment and interpretation of their meaning and significance. As described before in Chapter 2, environmental scanning can be focused on a range of domains including PEST and DEGEST analysis. In this doctoral study DEGEST analysis was applied to search for issues and trends influencing the commercial real estate industry and causing the need for long-term planning in three geographical areas: Europe (specifically the Western Europe), Asia Pacific (above all China) and North America (specifically the USA). The scanning method was used in all Futures workshops and in Questionnaires 1-3. The results of the DEGEST analyses regarding global, European, Asian and North American real estate industries are analysed and presented in Chapter 5.

4.3.5.2 Futures workshops

Futures workshops are the method enabling development of creative ideas and problem-solving in various organisations and practically all areas of life like society, economy and technology. Robert Jungk developed and ran the first Futures workshop in 1962 (Marrien and Jennings 1989). This method can be used in the processes of describing the preferred future in order to plan it and implement it (Jungk and Muller 1987; Godet 2001). Generally, workshops consist of two phases: exploratory (change anticipation) and normative (change mastering). According to Jungk and Muller (op. cit.) there should be no more than 25 workshop participants, in order to create a team-work atmosphere and give everyone a chance to speak. The length of the workshops may vary from a half-day to even three days, depending on the researched issue, budget and the availability of experts. Workshops are an efficient method for collecting primary data in a relatively short period of time (The Futures Academy 2008). Techniques used in the specific workshop vary and may depend on the specific study, intended outcome and time constraints.

In this study three one-day workshops and one half-day were conducted to explore the future of commercial real estate industry globally, in Europe, Asia Pacific and North America. Workshops were preceded by the environmental scanning and survey questionnaire regarding researched spheres. Participants were representing different sectors of the real estate market from development to architecture and academic research. This created an opportunity for stimulating discussions and imaginative brainstorming sessions. There were between 15-29 participants in the workshops. During all four workshops numerous futures techniques were applied, among them:

scenarios, environmental scanning, brainstorming and focus groups. Workshops were conducted in four different locations depending on the geographical area researched in each phase of the BEF 2030 project. Details concerning workshops are presented in Table 4.6.

Workshop	Database	Location	Number of Participants
Workshop 1 Europe	King Sturge Client Database	London	15
Workshop 2 Global	ULI Europe Sustainability Council	Paris	23
Workshop 3 Asia-Pacific	Hong Kong University	Hong Kong	29
Workshop 4 North America	DePaul University Purdue University	Chicago	27

Table 4.6 Details of workshops 1-4

Workshop 1 was conducted in November 2007 at the RICS Headquarters in London (see Appendix 8 for workshop's schedule). It was focused on the future of the European commercial real estate industry, with specific consideration of the sustainability challenge. There were 15 participants representing various segments of the property market. Professor J. Ratcliffe and doctoral Student D. Brodowicz facilitated the workshop based on the CLA method. The technique was applied to determine the driving forces, issues and trends shaping and influencing the European commercial real estate industry towards the year 2030 in three sessions entitled '*symptoms*', '*causes*' and '*worldviews*' (see Appendix 9 for a copy of CLA workshop guidelines). Application of layered analysis enabled the recognition of sustainable development as the main issue influencing the future of real estate. Unfortunately it also proved to be a challenging technique to apply in practice during a one-day workshop with market practitioners used to working on quantitative data in their professional life. Asked for their opinion,

workshop participants stated that the technique was too complex and the difficulty lie in transitions between the layers and clustering variety of issues (symptoms) into consistent themes in a relatively short period of time (15-minute session).

Workshop 2 took place during the ULI Conference in Paris (in February 2008), and was facilitated by the author of this thesis. 23 members of the ULI Sustainable Development Council Europe took part in the workshop focused on a global perspective on the future of the commercial real estate industry towards 2030. Meeting with experts was divided into two sessions; the first one concerned the major issues and challenges facing the future of commercial real estate industry globally. The second one was focused on the possible positive and negative visions and perspectives for the industry.

Due to the global financial crisis and university budget constraints *Workshop 3* in Hong Kong was facilitated only by Professor Ratcliffe. The author was responsible for the preparation of documentary research and the structure of the workshops, analysis and presentation of the results. There were 29 attendees mainly representing academia from Hong-Kong University and property consultancy. The workshop was divided into four sessions, each concerning the Asian-Pacific and more specifically the Chinese commercial real estate industry.

Workshop 4 was focused on the North American real estate market. It was held in Chicago in June 2009. It was a result of co-operation of the Futures Academy with two American universities DePaul and Purdue. DePaul University was also a host of the workshop. J. Ratcliffe, D. Brodowicz and G. O'Brien from The Futures Academy facilitated the meeting attended by 27 real estate professionals and academics. The

workshop was divided into four sessions regarding North American commercial real estate industry challenges, issues and trends, scenarios and action agendas. The results of each workshop are analysed and discussed in Chapter 5.

4.3.5.3 Strategic conversations

The first aim of conducting the conversations was to capture a range of views on the future of the commercial real estate industry from individuals representing different sectors of the property industry. The interviews concerned the economic, social and environmental dimensions of sustainability: for example, employee rights of the construction workers in the developing countries and economic validation of green developments. The results were used in the BEF 2030 study. The second aim was to test how futures methods can be used to analyse property markets through the standpoint and personal opinions of experts, gaining their insights and views based on their own beliefs and intuition rather than numerical data. Use of strategic conversation in this doctoral study proved to be fruitful and enabled conversation and exchange of views between interviewees and researcher going beyond the rigid framework of the classic interview.

Strategic conversation as a futures method was already discussed in Chapter 3. In this section it is analysed in the context of applying it in the doctoral research. As discussed earlier in Chapter 3 strategic conversations described informal although structured discussions or interviews focused on strategic issues preceded by carefully conducted background research. In this study strategic conversations were conducted with 15 experts (Appendix 10 includes the sample of the strategic conversations invitation and

questions). Conversations took place in four locations London (March 2008), Hong Kong (July 2008), Miami (October 2008) and Chicago (June 2009). Potential participants were identified on the basis of the ULI Directory 2006-2007 and 2007-2008. Experts were invited through emails to take part in the conversations. They were given a letter explaining what strategic conversation is, together with the list of issues to discuss. This allowed interviewees to decide to participate or not, and to prepare for through emails discussion. The conversations took from minimum of 40 minutes to a maximum of two hours, depending on the number of interviewees taking part (from one to five participants), their time constraints and expertise, except for one conversation conducted in the form of phone interview. The results of all strategic conversations were analysed and used in the investigated case study discussed in Chapter 5.

4.4 Methods of data analysis and presentation

The term 'data' refers to the evidence or facts concerning the researched area, like groups, situations, individuals or numerical facts (Singh and Bajpai 2007). Analysis and presentation of data is an integral element of all academic studies. It involves data categorisation and interpretation (Spiggle 1994; Langley 1999). Interpretative studies, such as this doctoral research, are often an iterative process including repetitions and moving back and forth from theoretical concepts to data to achieve the results and draw the conclusions (e.g. Langley *op. cit.*; Gerson and Horowitz 2002).

Specific forms of data analysis and presentation may vary: for instance, from interview transcripts to visual data processing in the form of text, to graphs and figures (Bhattacharya 2008). Huberman and Miles (1994) consider data analysis and

presentation as ‘choreographed’, well-thought-through process, based on a custom-built and revised approach rather than a rigid and homogeneous process. Each qualitative study differs, but in all of them data collection, analysis and report are interconnected (see Figure 4.8). In this thesis data collection was discussed in the previous section. Analysis and reporting procedures applied in this study are examined in the following sections 4.4.1 and 4.4.2.

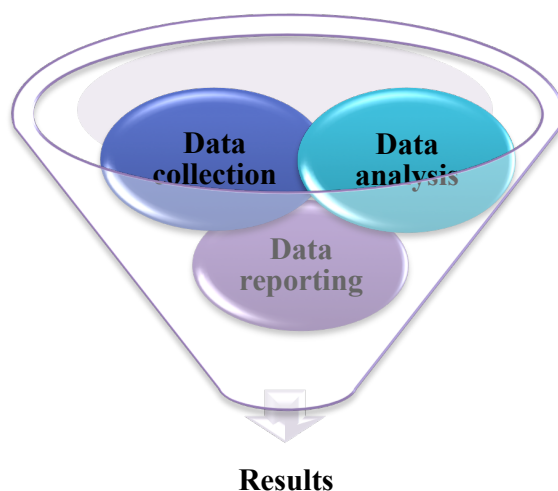


Figure 4.8 Research process

4.4.1 Data analysis

After completing the process of information collecting, the data has to be processed and analysed. For some authors, like Kothari (2004), processing and analysis are consecutive but separate parts of the research process. For others, like Sellitz et al. (1959), they are one integral part of the research described as data analysis. In the case of this doctoral research the author follows the approach described by Sellitz et al. (Ibid.). Data analysis in the majority of qualitative studies has several common features (Padgett 1998; Kothari 2004; Creswell 2007):

1. Organisation of preliminary information and knowledge into files, themes or topics dividing the gathered material into manageable and consistent parts.
2. Editing of data. This includes description and confirmation of information.
3. Coding and arranging of data into themes enabling comparisons and reasoning.
4. Developing new concepts or relating to already recognised concepts and theories.

There are numerous data analysis strategies. Two major procedures - notes and codes - described by authors like Huberman and Miles (1994), and Walcott (1990), are presented in Table 4.7.

Notes procedure	Codes and patterns procedure
Highlight information through description (Walcott 1990)	Write codes and memos (Huberman and Miles 1994)
Write reflective passages (Huberman and Miles 1994)	Identify regularities in patterns (Walcott 1990)
Summarise drafts of notes taken during the workshops, interviews, observation (Huberman and Miles 1994)	Identify silent patterns (Madison 2005)
	Count frequency of patterns (Huberman and Miles 1994)

Table 4.7 General data analysis strategies

Sources: Walcott (1990), Huberman and Miles (1994), Madison (2005)

For researches based on the case study approach, like this doctoral research, data analysis can include detailed narratives describing the problem and its setting (Creswell 2007). Stake (1995) points out that aggregation of information gathered in case studies through patterns searching and recognition of similarities or differences between them is crucial for proper analysis. Data gathered during the majority of qualitative studies is voluminous and complex (Patton 2002) and one of the key tasks is to organise this voluminous textual material (Gray 2009). Authors like Flick (2006) distinguish three steps in organising and analysing the results:

1. Summarising the content. Material should be paraphrased and data grouped into themes.
2. Explicating content analysis. This includes quoting experts and citing dictionary definitions to clarify statements.
3. Structuring content analysis. Arranging and describing material into formal structures or scale dimensions.

Data analysis in this research included information collected from the documentary review, four survey questionnaires, four futures workshops, environmental scanning and strategic conversations with fifteen experts. Data gathered in this study was drawn from diverse views and information shared by numerous real estate professionals and academics involved in the BEF 2030 project used as an interpretative case study. Experts provided insights and opinions on the use of the Futures approach in the planning process by answering the questions in the online survey and also by giving their written and oral feedback after the workshops organised by the Academy. Information from the case study was described and coded by the researcher separately for each of the investigated macro-regions and compared with each other at the end of the project and used as material for an interpretative case study in this doctoral thesis. Quantitative data was generated through four questionnaires. In the case of the analysis of regional surveys only Microsoft Excel was used, while the information from the fourth questionnaire was pre-processed in Excel and analysed afterwards in the Statistical Package for the Social Sciences (SPSS) version 19 for Windows.

After closing the online survey the analysis of data was divided into two distinctive phases. In the first phase, the information regarding responses to each of eight questions

was transferred by the researcher from ‘Survey Monkey’ system to Excel and grouped into eight tables corresponding to the order of questions. The results of this analysis, including percentage and graphics are presented in section 6.3. In the second phase the interdependence⁸ between represented profession (Question 8), and attitude and familiarity with the Futures field (Question 1-7) was considered. For this purpose a non-parametric Pearson Chi-square analysis was conducted through transformation of data from the ‘Survey Monkey’ platform, to the Excel program and then to SPSS. All calculations were made in the statistical package. The results are analysed and presented in section 6.4.

Statistics correlation describes relations between two random variables: for instance, a product’s price and demand for it or work experience and the level of salary. After consideration of the aim of the query it was decided to choose the Pearson’s Chi-square test as one of the most commonly used tools for verification of independence between two variables. Pearson tests can be applied when the cell count (r-rows) is 5 or more. In other cases when the count is lower than 5, the results are considered as insignificant. Observations on both variables are assigned to areas in r-rows and a c-columns table. The value of this test is estimated by the formula (Weinberg and Knapp-Abramowitz 2001; Bielecka 2011; Pułaska-Turyna 2011):

$$X^2 = \sum_{i=1}^r \sum_{j=1}^c \frac{(O_{i,j} - E_{i,j})^2}{E_{i,j}}$$

Where:

X^2 = Pearson's test;

$\sum_{i=1}^r$ = Sum of observations in r-rows;

⁸ In this thesis interdependence and correlation are used as synonyms.

$\sum_{j=1}^c$ = sum of observations in c-columns;

$O_{i,j}$ = an observed frequency;

$E_{i,j}$ = an expected frequency, asserted by the null hypothesis.

In this type of test the results are indicated by the asymptotic significance value. The correlation between variables does exist if asymptotic significance is lower or equal to 0.05 (Pallant 2007; Kirk 2008).

4.4.2 Data presentation

There are numerous possibilities to present results of a study and one rigid framework of data presentation does not exist. Qualitative data presentation analysis involves work with various forms of textual material, like field notes (David and Sutton 2004). Qualitative data presentation requires from the researcher considerable knowledge and initiative to “reflect as accurately and validly as possible the original data at the point of collection” (Olivier 2004:144). The rules of quantitative data presentation are more precisely defined. This type of data is usually presented in the form of graphs like line graphs, bar graphs or pie charts together with tables including figures and percentages (Crothers 1981). Although Olivier (op. cit.) points out that it is not essential and maybe even not desired to include all calculations, which produced the data in the main text of thesis. Examples of the calculations with detailed tables including gathered data can be included in the appendices. In this doctoral thesis this rule has been applied.

The data and the results of analysis regarding the use of futures approach in real estate are presented in Chapter 5 and Chapter 6, which represent two distinctive, yet

interconnected phases of the research. Phase 1 of the research concerned analysis of the case study, in which Futures were applied to investigate challenges and outline perspectives of future developments in the property sectors. Results of this phase are presented in Chapter 5. Phase 2 of the study was focused on evaluation of the Futures process applied in Phase 1 on the basis of opinions and insight gained from the participants of the BEF 2030 project. Outcomes of the second phase are analysed and presented in Chapter 6. Qualitative data gathered in both phases was presented in the form of non-numerical tables, figures and descriptions. Quantitative data from Questionnaire 1-4 was presented in the form of charts. All information gathered in this doctoral study was analysed and presented in the main body of text and appendixes in the form of descriptions or direct citations from strategic conversations, workshops and other primary sources to support the arguments and conclusions.

4.5 Synthesis

This chapter provided a comprehensive description of the philosophy and strategy towards data gathering, analysis and presentation used in this doctoral research. The study is of a qualitative character and it has constructivist and interpretivist roots. It is largely based on non-numerical data gathered in the process of interactions between participants and interpretation of their opinions and subjective views of experts about the commercial real estate industry.

Interpretative case study has been chosen as a strategy of inquiry to examine the BEF 2030 project, in which futures methodology and methods were used in analysis and strategic thinking about the future of property industry globally and specifically in three

separate economic and geographical macro-regions. Analysis of the methodological procedure applied in the investigated case, its outcomes and outputs were one of the primary sources of information regarding possibilities and difficulties with applying futures methodologies and techniques in the commercial property industry.

This doctoral research employs methodological triangulation and crystallisation, strategies for achieving credibility of data used as a primary source of information. Both strategies were valuable in the process of gathering the data for example, from the futures workshops, in which participants representing different property professions, various levels of work experience discussed their ideas and on numerous occasions contradicted each other.

The following two chapters present the core findings of the study. Chapter 5 includes the results of the investigation of the BEF 2030 case study, in which the futures process and methods were applied. Chapter 6 presents the discussion on the on-line survey results concerning opinions of experts on application of futures approach in the real estate practice including commercial consultancy, management and investment services companies.

Chapter 5: Futures Methodology in the Commercial Real Estate Industry Analysis and Planning Procedures - BEF 2030 Case Study

5.1 Introduction

In relation to the aim and objectives of this thesis presented in Chapter 1, this chapter provides insights into how futures methodology can be applied in the analysis and planning processes in the commercial real estate industry. To illustrate the investigation undertaken in this dissertation the BEF 2030 project is used as a case study. Introductory information about the case was already presented in Chapters 1 and 4. In this chapter the study is examined in terms of: its origins, aim and objectives, time-frame and time-horizon, participation, methodological process, methods and outcomes. Analysis of the case study is based on the primary data gathered between April 2007 and November 2009 by the author of this thesis, who was a project researcher in BEF 2030 study. The focal points of this chapter are the methodological framework and methods applied in the study.

5.2 Origins of the BEF 2030 project

The BEF 2030 project used as a case study illustrating the use of futures methodology within the property industry was conducted by The Futures Academy (DIT) in cooperation with the RICS Foundation and King Sturge (a property consultancy company) between 2007 and 2009. There were numerous supporters of the project and many institutions assisted in the specific phases of the research, for instance, with the

assistance of the ULI European Sustainable Development Council (ULI ESDC) and the following academic institutions Salford University, Hong Kong University, Purdue University and DePaul University.

The case study concerned the concept of sustainable development and the challenge it creates for the built environment in general and commercial real estate industry specifically. The aim of the study was to explore complexity, uncertainty and change in the built environment, focusing on the issue of sustainable development in the commercial real estate industry. The specific objectives of the project included:

- identification of the driving forces of change likely to influence the future of the built environment;
- determination of issues and trends emerging from the concept of sustainable development;
- consideration of alternative futures for the global and regional commercial real estate industry and clarification how the property community worldwide might prepare itself to shape a preferred vision of the future and,
- verification of how futures methodologies and techniques can be used to provide explanation of the forces affecting the long-term condition of the built environment, and specifically commercial real estate industry in the context of the sustainability challenge.

As is apparent from the aim and objectives, the issue of sustainable development was the main theme researched in the BEF 2030 study. The concept of sustainability, already pointed out in Chapter 1, concerns a wide spectrum of issues including reduction of carbon dioxide emissions and conservation of natural resources (Edwards

2005; Hart 2007). To avoid confusion and misunderstanding between study participants regarding sustainability, definition presented in the “*Our Common Future*” (WCED 1987), also known as the Brundtland Report, was adapted in the study in the following version: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Brundtland Commission (1987)

Investigation into the sustainability concept within the commercial real estate industry was based on the assumption that it combines three dimensions - society, environment and economy - and concerns the entire property stock, including existing, new and planned buildings. The general overview of the BEF 2030 study is presented in Table 5.1 below; details regarding the geographical scope, participation, methodology and process, as well as the outcomes are discussed in the following sections of this chapter.

BEF 2030 project	
Leadership	The Futures Academy (DIT)
Collaborators and supporters	RICS Foundation, King Sturge, Hong-Kong University, Purdue University, DePaul University, Salford University
Field	Sustainable development and the commercial real estate industry
Time frame	June 2007-November 2010
Time horizon	Towards 2030
Geographical scope	Europe, Asia-Pacific, North America and the global overview
Participation	Real estate professionals from development, to architecture and research
Methodology	Prospective through Scenarios
Design of the process	4 workshops accompanied by the strategic conversations, questionnaires and literature review
Outcomes and outputs	Three documents presenting the results of the study. Crucial output of the study was also practical knowledge and experience in conducting the future-oriented process

Table 5.1 Summary of the BEF 2030 study

The author of the thesis was a project researcher in BEF 2030 and was responsible for the primary and secondary data gathering, analysis and presentation. Two other members of The Futures Academy were involved in the study - Professor Ratcliffe was a project leader and another doctoral student, G. O'Brien, working on the thesis in the field of corporate responsibility, became involved in the study as a project manager after the first phase of the research regarding the European commercial real estate industry.

5.2.1 Geographical scope

The BEF 2030 study was designed to investigate the issue of sustainability development within the commercial real estate industry globally and in three macro-regions - Europe, the Asian-Pacific and North America - which correspond with locations and areas of activity of the major commercial real estate companies, like JLL and Colliers. Geographical scope was chosen by the Academy. The decision was based on the size and maturity of the property markets. Generally, economic regions and countries can be divided into the following clusters (Lassarre 2007):

- Industrialised countries characterised by relatively stable growth rate and high-wealth, for instance, North America.
- Newly Industrialised Economies (NIEs) with high growth and moderate wealth, like Singapore.
- Developing with low income per capita and low growth, like Bangladesh.
- Emerging characterised by high growth rate and relatively low income per capita like Thailand.

In the BEF 2030 all clusters were represented, for example, industrialised countries from the EU, and developing, emerging and newly industrialised clusters like China and India.

5.2.2 Participation

To investigate the concept of sustainable development and define what it means and what type of challenges it creates for the future of the built environment and specifically for the commercial real estate industry around 300 property professionals and academics from the following groups were invited. Almost 130 of them took part in the BEF 2030 study: architects, developers, consultants, researchers and academics, property managers; surveyors; brokers (see Appendix 11 for the list of project participants). Table 5.2 presents details regarding the participation ratio and numbers according to the represented profession. Participants were encouraged to take part in the study by the project collaborators - King Sturge and RICS Foundation, who were well known in the business field.

Profession	Number of participants	% of sector participation
Developers/Architects/Engineers	22	17.3%
Surveyors	5	4%
Asset and property managers	19	15%
Agency and Brokerage services	7	5.5%
Consultancy and investment services	41	32.2%
Academics	33	26%

Table 5.2 BEF 2030 study participants according to profession

The largest number of participants represented consultancy companies, market researchers and academics. In the first one there were specialists offering services in various sectors of the commercial real estate market from brokerage to property and investment management. The second largest group included real estate academic teachers and graduate students, as well as researchers working at universities or self-employed invited to take part by the Academy or cooperating universities like DePaul University or Hong-Kong University. BEF 2030 participants also recruited from asset and property management, property surveying, brokerage and property development and architecture.

5.3 BEF 2030 process and methodology

The process applied in the BEF 2030 study was divided into three distinctive phases. The first phase included establishing the network of project collaborators and documentary research. The second phase was focused on exploration of the possible and preferable futures for the commercial real estate industry in three macro-regions and globally in the context of the sustainable development. The third phase included analysis, presentation and publication of the results. Details regarding each of them are discussed further in this chapter.

The exploration of sustainability challenge within the commercial real estate industry was initiated by the Academy with the support of King Sturge, the RICS Foundation and the following universities: Salford, Hong Kong, Purdue and DePaul. The first region under investigation was Europe. This part of study was conducted between

November 2007 and March 2008. The second part regarding Asia-Pacific was carried out between April and August 2008 and the third concerning North America from October 2008 to June 2009. The investigation was based on the ‘Prospective through Scenarios’ methodological framework developed by The Futures Academy (discussed already in Chapters 3 and 4). The research process was divided into three phases: *preparatory, exploratory and move towards strategic planning* (see Figure 5.1 below for the process elements). Further sections present details of each phase and individual steps taken in the investigation of regional and global parts.

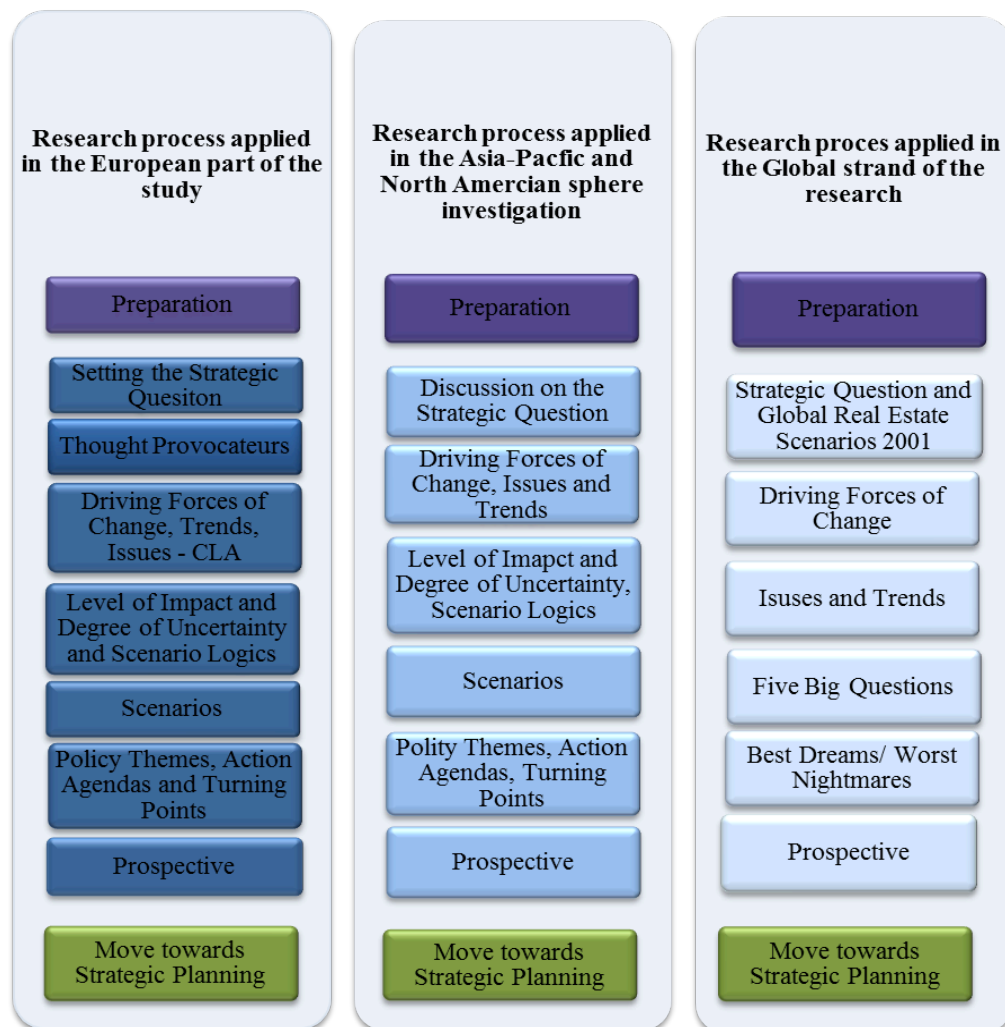


Figure 5.1 Elements of the research process applied in the regional and global parts of the study

5.3.1 First phase – Preparation

The first preparatory phase took place between April and November 2007 and included: review of the existing documents and projects focused on the future of the commercial real estate industry, e.g. “Global Real Estate Scenarios 2020” (The Futures Academy 2001) and “European Real Estate Scenarios” (The Futures Academy 2005), “Drivers of Change” (Arup 2006) followed by clarifying the time horizon, scope, aim, objectives and expected outcomes of the study, choosing the methodology and establishing cooperation between The Futures Academy, RICS Foundation and King Sturge.

Initially, it was planned that the scope will include the global overview and investigation of three global ‘spheres of influence’: Europe, North America and Asia Pacific and the possibility to develop several scenarios for specific regions, countries or markets (e.g. India, China, the Middle East, Australia). Unfortunately, due to the project’s time and budgetary constraints there was no opportunity to expand the project to individual markets or countries. The final output of the project was difficult to determine precisely. It was expected to be a set of policy fields, each supported by an action agenda to assist decision-makers in planning procedures. Details of project’s outcomes and outputs are discussed in section 5.4.

5.3.2 Second phase - Exploration of possible and preferable future

The second phase was a central part of the BEF 2030 project. It was focused on anticipation of possible and preferable vision and its consequences for the commercial real estate industry. This phase was divided into four parts, each regarding one of three macro-regions and the global overview. The process of data gathering included a

literature review, survey questionnaires, strategic conversations and most importantly futures workshops. As mentioned before, the exploration of the possible and preferable future in three regions and globally was based on the same 'Prospective through Scenarios' methodology. The methodological framework applied in the study was modified during the investigation of the regional and global future of the commercial real estate industry, while experience from conducting research in one region was used as a lesson learned in preparing next stages. The differences and common points between the regional and global strand of the study occur while considering the individual steps and methods applied in the research process. Generally, the process applied in the macro-regions was more detailed than the global one. The qualitative type this enquiry employed in the property field - traditionally associated with the quantitative approach - induced a need for methodological crystallisation. Application of this flexible and reflexive methodology enriched the research process and led to the generation of robust findings. Sections 5.3.2.1 and 5.3.2.2 present details of the process applied in the regional and global research.

The main method used in the second phase of the research in each of the three regions and globally was the futures workshop. Additional methods applied in this phase of study included environmental scanning, a futures questionnaire and strategic conversations (see Table 5.3). These methods were used to collect information on the challenges, issues and trends that may influence change in the industry in the period of next 20 years. The main tasks included monitoring of corporate reports and websites, economic press, participation in numerous conferences and seminars in Europe, North America and Asia. Survey questionnaires and strategic conversations, main trends and challenges for the future in each of three macro-regions were distributed among ULI

members (identified on the basis of ULI Directory book 2006-2007 and 2007-2008) and business partners of King Sturge and the RICS Foundation. Unfortunately due to time constraints and availability of experts there were no strategic conversations conducted and surveys distributed in the global phase of the project. Information was gathered through desktop research, meetings with experts, interviews and questionnaires, and complemented the results from the workshop organised with ULI. Table 5.3 presents synthesised information about the methods used in regional and global research.

Method/ Geographical Scope	Global	Europe	Asia-Pacific	North America
Environmental scanning	Yes	Yes	Yes	Yes
Survey	No	Yes	Yes	Yes
Prospective workshop	Yes	Yes	Yes	Yes
Strategic conversation	No	Yes	Yes	Yes

Table 5.3 Methods used in the study

5.3.2.1 Exploration of the possible and preferable future in three macro-regions

In the exploration of the possible and preferable future in three macro-regions based on the Prospective methodology the results of the desk-top research on sustainability and other challenges facing the real estate markets were used as a starting point. They were followed by the futures questionnaires, strategic conversations and the futures workshops organised for each sphere separately. As mentioned before, the first regional workshop was held in London in November 2007, the second workshop focused on Asia-Pacific was conducted in Hong Kong in July 2008, and the third workshop regarding the future of North American commercial real estate industry was conducted

in June 2009 in Chicago. The aim of workshops was to gather information about challenges, issues and trends affecting property industry in the specific areas, and develop scenarios with policies and action agendas leading to the preferred vision.

A one-day European workshop, which was conducted as the first one, consisted of the following steps (see also Figure 5.2):

- **Setting the question.** Initially the strategic question was outlined in the research proposal prepared by Professor Ratcliffe from the Futures Academy and sent to potential co-operators: RICS Foundation, King Sturge and ULI Europe in 2007. The final version of the strategic question was set during the first regional workshop in London as: “What are the major forces of change affecting the built environment in general, and the commercial real estate industry in particular, and how should the international property community prepare itself now to address the sustainable development imperative through corporate responsible behaviour?”. This question was used throughout the entire project to investigate the regional and global future of the commercial real estate industry.
- **Thought provocateurs session.** After the introduction and discussion on the strategic question the next step was a session, during which two experts D. Cadman (Upstream), and A. McIntosh (King Sturge) provided their reflections on challenges, trends and problems facing the industry in the context of sustainable development. The aim of their presentations was to provoke thoughts of other participants and encourage them to think creatively and outside the box while talking about the future of property sectors in Europe.
- **Drivers of change, trends and issues.** This step was executed on the basis of CLA method adapted by the Academy from Inayatullah’s framework (2004). Participants

were divided into three groups and were asked to discuss forces, issues and trends that could have an influence on sustainable development within the real estate industry in the long-term. The analysis consisted of three layers: symptoms (obvious trends, events, and issues), causes (underlying major forces) and worldviews (including values and cultures). The 30-minute brainstorming sessions were carried out in three breakout groups. In plenary after each session all groups reported their ideas, which resulted in a list of key driving forces, issues and trends for the scenarios. The result was creation of the list of over 100 issues, trends and challenges.

- **Uncertainties and scenario logics.** On the basis of the layered analysis participants identified two pivotal uncertainties for the future of the sustainable commercial real estate industry. Both of them were polarised to portray the opposite ways in which they might develop.
- **Scenarios.** Each of three groups discussed the concept of separate scenario. The storylines were based on the logics developed in the previous step. The results of their work were discussed in plenary. They became the basis for the development of European scenarios towards 2030 crafted by the project researcher (the author) and discussed after the workshops with study collaborators and selected experts.
- **Testing policy options and action agendas, and signalling turning points.** This session took the form of a round-table discussion guided by a facilitator. Its aim was to identify, according to the scenarios, alternative policy fields and the most appropriate agendas for action to prepare the international real estate community to address the issue of social and environmental sustainability in market practice and

planning. As a result, five policies and ten agendas for each of them were agreed with participants and presented in the final publication.

- **Producing the Prospective.** This step was carried out after the workshop by the Academy. It was based on the results from the workshops, opinions of questionnaires respondents and strategic conversations. Mainly policies and actions were used to sketch the concept of the most suitable vision. It comprised a vision of the preferred future and an evaluation of outcomes tested against policies in order to propose and communicate the options and solutions towards the required action.

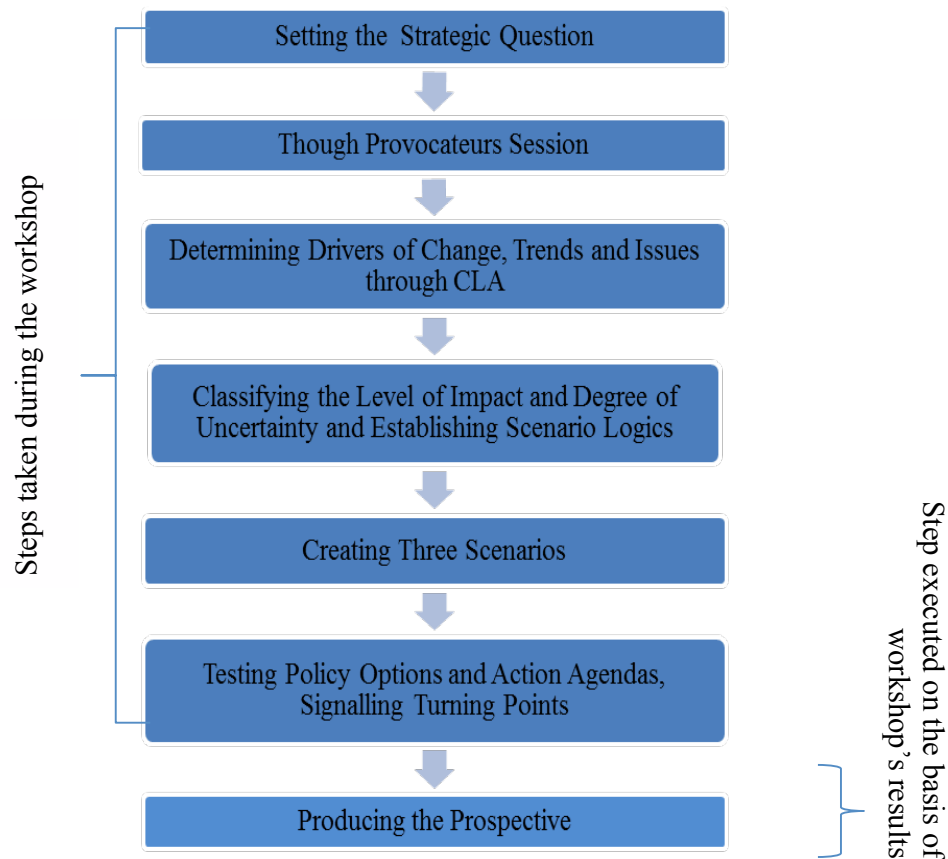


Figure 5.2 Futures process applied in the European part of the study

The methodological framework applied in the investigation of two other macro-regions, Asia-Pacific and North America, was modified on the basis of the researchers' experiences from implementing the methodology in the European phase. As a result of process revision two methods were crossed out from the process: thought provocateurs session and CLA. They were replaced with the project leader introductory speech and brainstorming session on challenges, issue and trends (details discussed in section 5.4.2). The structure of the workshop used in the investigation of Asia-Pacific and North American commercial real estate industry future was identical. The framework applied in both workshops consisted of five steps (Figure 5.3 presents the framework):

- Discussion on the issues addressed in **the strategic question** combined with the project leader's introductory speech.
- **Identification of driving forces of change, main issues and trends.** The drivers were investigated under DEGEST categories. Experts taking part in the Hong Kong and Chicago workshop were divided into three subgroups and were asked to discuss the driving forces under two of DEGEST categories assigned to them. Then, within the same subgroups and the same categories, the participants brainstormed the specific issues and trends arising from the forces identified in the previous step. The results from all subgroups were discussed in plenary and clustered into themes corresponding with social, economic and environmental dimensions of the sustainability concept.
- **Level of impact and degree of uncertainty, scenario logics.** The next step was a plenary session conducted to classify the level of importance and degree of uncertainty. The key uncertainties were identified on the basis of issues and trends clustered and ranked according to their level of impact upon the strategic question and degree of uncertainty of occurring within the timeframe of twenty years. Two

main uncertainties chosen by the experts were used to establish scenario logics developed in the form of 2x2 matrixes (see Figures 5.4, 5.5, 5.6 for presentation of the regional scenario logics).

- **Scenarios.** Participants working in the same three groups as during the identification of challenges and trends were asked to draft one scenario each by using the scenario logics. The results of their work were discussed during the plenary session and used by the author to develop final set of scenarios.
- **Policy option, action agendas and turning points.** The last step during both workshops was a plenary discussion on policies and action agendas for the real estate companies and possible or probable turning points, which could dramatically change the reality towards or against the most preferable scenario. Themes and action agendas identified during the workshops were categorised into five themes with numerous action agendas assigned to them.
- **Prospective.** Results from the workshops, combined with the information gathered during the entire study, were used by the Academy to develop the preferred visions for regions in the final report.

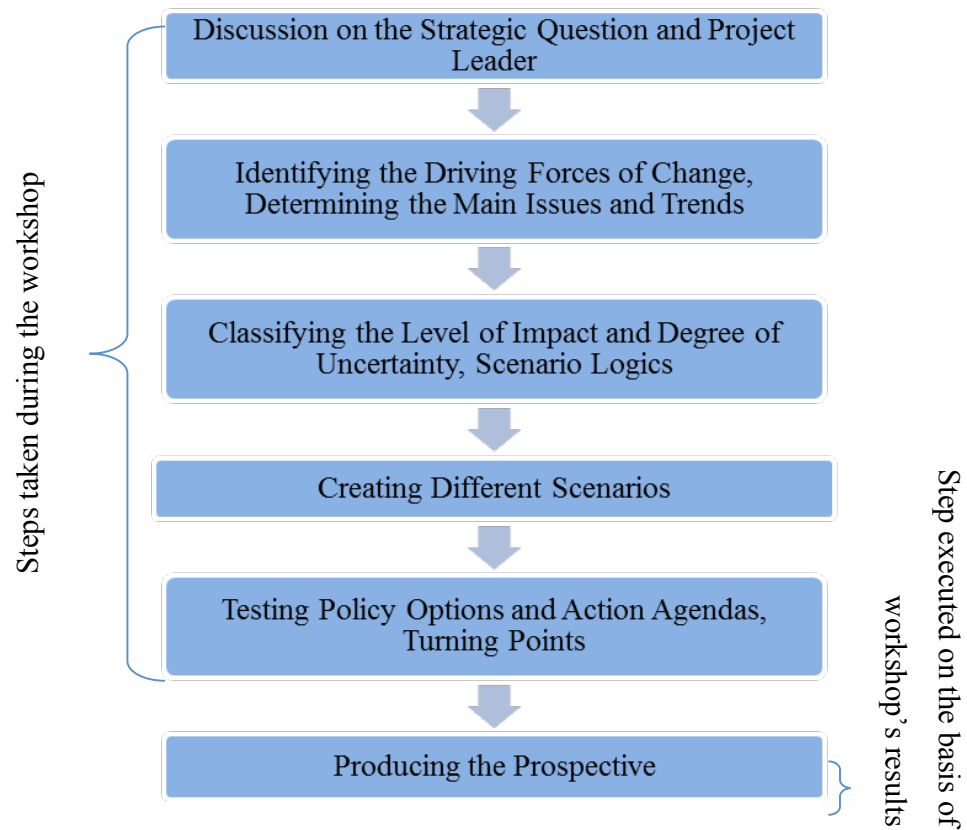


Figure 5.3 Futures process applied in the Asia-Pacific and North American parts of study

5.3.2.2 Exploration of the global future

A different workshop process was applied in the global part of the study. As mentioned earlier, it was designed and conducted by the author of this thesis. Due to time constraints imposed by the ULI European Sustainability Council (host of the event) the futures exercise was planned for 1 hour 15 minutes - a quarter of an hour for each of five steps, instead of the one-day format as in case of the regional workshops. The results of this workshop, supported with oral and written feedback from participants and data gathered in the literature review, were included in the BEF 2030 final document and are discussed in section 5.4 of this thesis.

The workshop took place on February 5th 2008 during the ULI conference in Paris. There were 23 participants in the group representing companies from Europe, the U.S. and the Middle East. Unfortunately there was no representative from the Asian-Pacific, but the majority of experts had work experience and knowledge about issues, challenges and trends from the Far East. The session, which was facilitated by the author of this thesis, was divided into two stages. Part one included a brief introduction to the Futures field and information regarding The Futures Academy, presentation of the BEF 2030 strategic question, aims and objectives. Part two, was entitled “The commercial real estate industry towards 2030 - futures exercise” and included the following five steps (see also Figure 5.4 Futures process applied in the global part of the study):

- **Discussion on the strategic question and Global Scenarios from 2001.** This step began with a brief presentation about the Global Real Estate Scenarios from 2001, developed by The Academy for King Sturge. The aim was to set the scene for the futures thinking during the workshop, and open a discussion on the future visions towards 2020 described in three scenarios “Lords of Misrule”, “Bazaar” and “Socratic Systems” (see Appendix 12 for the abstracts of scenarios). Then, the participants were asked to brainstorm the issue of sustainability and its meaning for the commercial real estate industry presently and towards next decades. The author, to rewrite and restructure global scenarios towards 2030, used information gathered during the discussion and from written and oral feedback of participants.
- **Identification of driving forces of change.** In this step participants were divided into three subgroups and were asked to discuss the main forces driving the change in the commercial real estate industry under two DEGEST themes.
- **Determining the main issues and trends.** In the same subgroups a brainstorming session took place on issues and trends arising from the driving forces identified by

the participants in the previous step. Then, the results of steps two and three were presented by subgroups representative of the entire group during the plenary session.

- **Discussion on five big questions for the future of real estate markets.** This part of the workshop was conducted in the form of an open debate. Experts had a few minutes to think about one question or doubt for the real estate and write it down. The facilitator (the author of this thesis) gathered all ideas and read them to the whole group and opened the discussion. As a result, five questions agreed by the participants were chosen.
- **Debate on best dream and worst nightmare.** Similarly to the previous step, this one was also based on the individual work and discussion of all participants. They were asked to write down what the best dream and worst nightmare for the future of commercial real estate industry could be. Everyone willing to share their ideas with the public was asked to read them to the group. Participants voted for top five best dreams and worst nightmares, which were used by the researcher in the process of creating a global vision in the BEF 2030 study.
- **Prospective.** As mentioned in the previous section, a global vision was also developed together with regional visions after a workshop on the basis of material gathered from numerous sources of primary and secondary data mainly through application of futures methods.

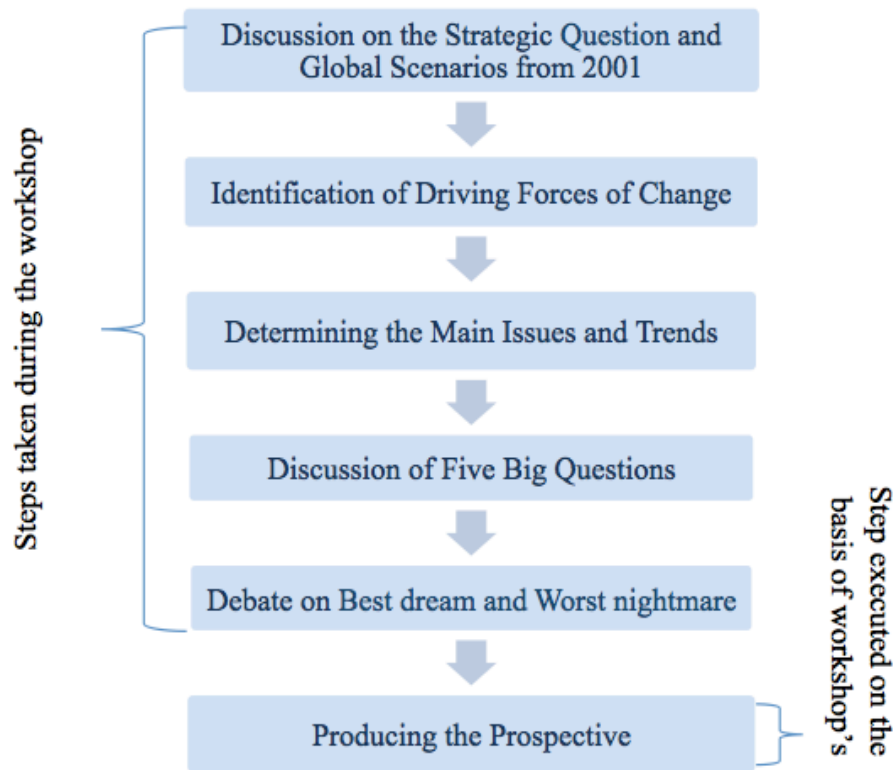


Figure 5.4 Futures process applied in the global part of the study

5.3.3 Third phase - Move towards strategic planning

The third phase of the study included analysis, presentation and publication of primary and secondary data gathered during the workshops. Materials regarding global and regional parts of the study were gathered, analysed and interpreted by the Academy researchers between April 2007 and November 2009. The author of this thesis, a project researcher, was personally responsible for the analysis of global and European results of the study. Results regarding the Asia-Pacific and North American parts of the study were analysed by the author of this thesis and project manager. Generally during the study the author was responsible for bringing together working documents from the regional workshops, interviews and questionnaires, and designing and facilitation the global workshop.

The results of the two and a half year study were publicised in the form of two reports. The first was published in November 2009 in Dublin by The Futures Academy. The second was launched by King Sturge and the RICS on 22nd April 2010 in London. Both reports were entitled "*The Built Environment Foresight 2030: the sustainable development imperative*". The difference between the two documents was the content; the first of them presented the results of the entire study, the second was focused on drivers of change, trends and scenarios. Both documents were distributed by the Academy among study participants and contributors in paper and electronic formats⁹.

Apart from the written reports there were also numerous presentations, articles and press releases on the results from the BEF 2030 study. The first was a research paper submitted after completion of the European and Asia-Pacific phases, peer-reviewed and presented by the author of this thesis at the "15th Annual International Sustainable Development Research Conference" (ISDRS) on July 7th 2009 in Utrecht (see Appendix 13 for the abstract of the research paper). The presentation was followed by a fruitful discussion with numerous academics and professionals on futures methods and the concept of sustainable development within the property industry. It also resulted in cooperation between the author and the KTH Royal Institute of Technology in the first phase of the research project focused on sustainable urbanism in Stockholm in September 2009.

⁹ The reports are available in PDF format online at The Academy website www.thefuturesacademy.ie and Salford University www.sobe.salford.ac.uk/about-us/news/?a=11867.

One of the project collaborators, Dr. Angus McIntosh¹⁰, at that time the head of the research department in King Sturge, was one of the most active supporters of the study. Throughout the project and after publishing the reports he gave numerous presentations and ran debates on the importance of sustainability and futures thinking and planning within the commercial real estate industry referring to the BEF 2030 project, to mention but a few, the presentation “Visions of Tomorrow to Plan our Lives Today Sustainable Development and the Real Estate Industry” in European Union Energy Sustainability Week on 22-26th March 2010 in Brussels and the debate on benefits of Foresight at the Investment Property Databank (IPD) conference in Amsterdam on 28th May 2010.

After more than two years since the publication of the first reports, the BEF 2030 is still discussed among real estate professionals and referred as a case for application of futures methodologies and methods in analysis and planning. Professor Ratcliffe, project leader, referred to this study on numerous occasions, for instance, in the presentation “Built Environment Futures” at Salford University on April 14th 2011. The author of this thesis also used the BEF 2030 study at various occasions as an example of futures methodology application. For instance, during seminars in the “Regional Foresight - Academic Mazovia 2030”¹¹ project regarding the future of universities in the Mazovia region in Poland conducted between 2010 and 2012.

¹⁰ At that time the head of the research department in King Sturge, known for the series of reports entitled “European Property Sustainability Matters”.

¹¹ Details of the project are available at www.akademickiemazowsze2030.pl.

5.4 Outcomes, outputs and observations from the BEF 2030 project

This section is focused on the results of the project used as a case study in this thesis.

There were two main types of the outcomes and outputs from the BEF 2030 research:

1. A vision regarding the sustainable future of the commercial real estate industry globally and in three macro-regions based on trends, issues, scenarios, policy themes and action agendas developed during the project.
2. Observations and experience gained by the author in applying the futures methodology in the real estate field.

Discussion on the outcomes and outputs, and observations are presented in the two following subsections 5.4.1 and 5.4.2.

5.4.1 Outcomes and outputs of the BEF 2030 study

In this section the findings of the BEF 2030 study are analysed and discussed. The regional and global outcomes are examined together in the order corresponding with the structure of the final publication of the Academy from 2009¹². Firstly, the strategic question is discussed, followed by drivers of change, trends and issues, impact and uncertainties, scenario logics and scenarios, policy themes and action agendas, turning point, the preferred vision and the move to strategic planning.

¹² Despite the fact that the processes of gathering in the macro-regions and globally differed, their results were presented together in the final reports and therefore are discussed jointly in this dissertation.

5.4.1.1 Strategic question

As a result of the first futures workshop with a group of real estate specialists the *strategic question* defined in the BEF 2030 proposal, quoted in section 5.2, was discussed and set as an overarching question regarding the regional and global future of the industry and the built environment. The key part of the query, concentrated on the major forces of change affecting the built environment in general and the commercial real estate industry in particular, was investigated in the form of in-depth analysis based on methods like environmental scanning and survey questionnaires. The project went on to ask how the global property community should prepare itself to address the sustainable development challenge within next two decades, which was answered by the development of a set of policy themes, action agendas and preferred vision of the future, which could be used in the processes of strategic planning towards sustainability.

5.4.1.2 Drivers of change

After setting the question, the next step was *identification of driving forces of change*. The forces were divided into six groups, according to the DEGEST method already discussed in Chapters 2 and 3. Most of *global forces* identified through the futures workshops, questionnaires and literature review were focused on proving the economic profitability of sustainable development, population shifts and migration from rural to urban areas, especially in the developing countries of Asia. In the *European part* of the study the main focus was on the aging of the population, the future of the EU and its role in shaping national policies, as well as smart growth and urban regeneration. In the case of *Asia-Pacific phase*, one of the major forces of change highlighted by property

professionals and academics taking part in the study were growing income disparities between developing urban areas and declining rural areas, scarcity of fresh water causing tensions and social unrest, as well as a growing gap between so-called ‘green economies’, represented by Australia and New Zealand, and ‘grey economies’, such as China and India. In the *North American phase* of the study main forces of change were associated with energy shortages and prices urging lifestyle and consumer behaviours change from overuse of cars, planes and air conditioning to zero energy usage policy, investment in urban infrastructure and public transportation.

5.4.1.3 Issues and trends

The third step of the process was focused on the *determination of main issues and trends*. They were diagnosed for each region during the workshops and supplemented in the final report with the information from strategic conversations and questionnaires’ results. In the case of the *global workshop* held during the ULI Sustainability Council meeting issues and trends regarding specific types of properties were not discussed; instead, experts considered issues and trends reflecting on the real estate market generally; among the most significant were: corporate transparency and accountability; quality and costs of living in the urban areas and terrorism.

During each of the three regional workshops, over a hundred issues and trends were identified and assigned to property types like offices and workspace; industrial and warehousing; retail, leisure and spending; residential and community. Information from the workshops combined with data from almost two dozens of strategic conversations

conducted in London and Chicago and regional questionnaires results led to the identification of the following issues and trends for each sphere:

1. European sphere

- office and workspace - virtual and physical security of the building and change of office space design towards more secure and comfortable, including rest areas and private offices;
- industrial properties, warehousing and distribution - cutting carbon dioxide (CO₂) emissions and fuel use through the replacement of road transportation with rail, and protection of stored consumer goods against biological terrorism;
- retail, leisure and spending - development of urban entertainment centres (UECs) replacing traditional community centres, more mixed-use projects including retail, office space and apartments under one roof and,
- residential and community - return to multi-generation housing and also a significant increase in households run by so-called singles.

2. Asia-Pacific sphere

- office and workspace - more women in the workforce, slow emergence of sustainability codes for office buildings;
- industrial properties, warehousing and distribution - more direct foreign investment in factories and warehouses; increased number of distribution and logistics centres in China and India;

- retail, leisure and spending - teenagers adopting the Western lifestyle; growing number of luxurious resorts for visitors from all around the world, and,
- residential and community - return to the tradition of feng shui; use of natural materials; growing demand for affordable and social housing.

3. North American sphere

- office and workspace - open-space perceived as a non-productive areas used only for short meetings and consultations, Leadership in Energy and Environmental Design (LEED) certification required in all new and existing office space developments;
- industrial properties, warehousing and distribution - expansion of rail and water transportation of consumer goods from ports to inland locations, mandatory greening of brownfield sites located in the close proximity to metropolises;
- retail, leisure and spending - single retail units gradually replacing large shopping malls, retail returning to the high streets, and,
- residential and community - depopulation of suburbia; demand for smaller housing units and apartments for economic reasons.

Numerous issues and trends identified for each of the three spheres and discussed during futures workshops between project researchers and study participants were focused on sustainability and associated with social and affordable housing, transit oriented projects and public transportation, as well as quality of life. This proves that for the real estate professionals and academics taking part in the project, sustainable

development was not a one-dimensional concept restricted to green buildings or energy certificates.

5.4.1.4 Impact and uncertainty

Prior to the development of the scenarios major uncertainties were identified and clustered into themes during each of the three regional workshops. As already explained earlier in this chapter, this step did not take place during the global workshop due to time constraints. Participants in regional workshops were asked to identify key areas of uncertainty through ranking previously discussed trends and issues according to their level of impact upon the strategic question and degree of likelihood of occurring within a twenty-year period. Among the results were, for:

- Europe - economic growth, integration and social cohesion in the EU, climate change and sustainability issues.
- Asia-Pacific - rapid population growth, urbanisation, scarcity of natural resources and energy conservation, and the search for an improved quality of life.
- North America - energy availability and resource management, political stability and civic security, economic development and distribution.

5.4.1.5 Scenario logics

Scenario logics were used in the study as the organising principles around which the scenarios were structured. They were focused on critical issues and major uncertainties for the commercial real estate industry as well as, more broadly, the built environment.

During each of three regional workshops three separate scenario logics in the form of 2x2 matrixes were defined.

In the *European part* of the study, it was decided to develop logics against the two axes of ‘Sustainability’ and ‘European integration’. The first of the scenario logics, ‘Sustainability’, was described by the workshop participants as “(...) the process leading to complete shift towards sustainability or diminution of efforts towards sustainable development in 2030” (The Futures Academy 2009:82). The second of the scenarios logics, ‘European Integration’, was understood by the experts as “(...) the process of legal, political, economic as well as social integration of European member states, which could lead both to increased integration or complete failure of EU mechanisms in 2030” (Ibid.).

Participants in the Hong Kong workshop decided that two critical uncertainties which could govern the evolution of *Asia-Pacific commercial real estate industry* were ‘Internal Reforms’ and ‘Regional Integration’. Both uncertainties had two extremes. In the case of the first one, those were significant internal reforms leading to sustainability and economic growth at one end and failure of political and infrastructural reforms at the other. The latter one comprised equal distribution of wealth and goods in the entire region at one end and economic, political and social disintegration at the other.

Major uncertainties chosen by participants of the Chicago workshop as scenario logics in the *North American part* of the study were ‘Political Stability and Civic Security’ and

‘Energy Availability and Resource Management’. The first uncertainty was characterised by greater political stability and civic security coinciding with a flourishing economy, contrasted with political instability and civic insurgency, causing failure of internal political and infrastructural reforms. The second uncertainty was portrayed as an axis directed towards a regional renewable energy policy combined with environmental standards, as opposed to a lack of a coherent energy policy.

Global scenario logics - ‘Economic Growth’ and ‘Public Intervention’ from the 2001 publication of the Academy ‘Global real estate scenarios’ were used during the Paris workshop as a starting point from which to develop new logics. As a result of discussion, ‘Economy’ remained as a one of the axes and ‘Social and Environmental Sustainability’ axis replaced public intervention. Economy was portrayed by ULI experts as two opposing market conditions – as growth versus depression. Social and environmental sustainability was described as two contrasting states - the introduction and enforcement of sustainability rules versus the failure of sustainability principles.

Analysis of the scenario logics proved that in all three macro-regions politics and governmental decisions were considered as crucial for the future. In the European sphere the most significant uncertainties were focused on the EU political integration and social cohesion; in the Asia-Pacific region most significant issue was regional and internal politics, whereas in North American it was energy security and political stability.

5.4.1.6 Scenarios

This section presents a brief overview and comments on global and regional scenarios. In each case, plots for three plausible, differentiated, and challenging scenarios were developed by the groups of experts taking part in one of the global or regional workshops. The storylines were plotted on the basis of scenario logics, challenges, trends and issues influencing the commercial real estate industry identified in the previous steps of the process. The complete scenario narratives were composed by the author for global and European scenarios and jointly with the project manager for Asia-Pacific and North American scenarios after the workshops and discussed in written and oral form with the project collaborators and participants; as a result, the following four sets of scenarios were developed:

1. Global Scenarios

In cooperation with members of the ULI European Sustainability Council three global scenarios towards 2030 were outlined during the Paris workshop and written up between February and March 2008 by the researcher on the basis of the material gathered during the workshop and consultations with the Council. Three scenarios - 'Archipelago Enterprise', 'Supernova' and 'Catharsis' - were developed on the economy axis crossed with the social and environmental sustainability axis (see Figure 5.5 presented below).

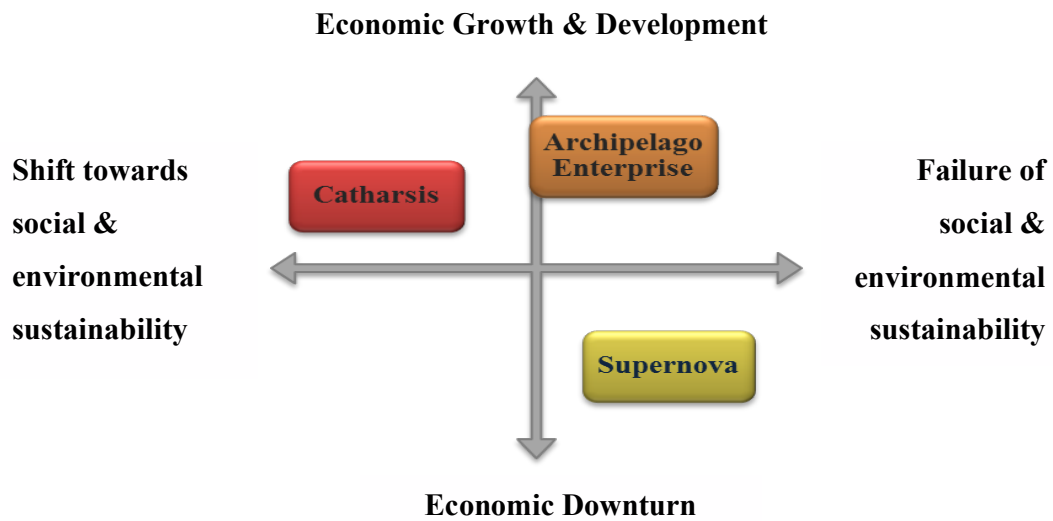


Figure 5.5 Global Scenarios

The first of the three global scenarios was entitled ‘Archipelago Enterprise’ (subtitled *Laissez Faire*¹³). Its plot was framed by the axes of ‘Economic Growth and Development’ and ‘Failure of Social & Environmental Sustainability’. It portrays the world, in which economic growth is supported by rapidly developing technologies, and the private sector. Particularly, corporations are a major catalyst for business activities and politics. Institutions at the international and national level lose their power to large companies focused on investment gains rather than environmental or social issues. The second scenario, entitled ‘Supernova’ (subtitled *Stellar Explosion*), is the most pessimistic of all three global scenarios. It describes the future situation, in which the world faces economic depression combined with social and environmental instability. According to the storyline, in 2030 all attempts towards sustainable development fail and unequal distribution of goods and wealth widens the gap between the developed and developing world. Adverse phenomena like corruption, unemployment and illegal

¹³ Referring to French economic theory from the 18th century, in which all transactions between private parties should be free from governmental intervention (Winiarski 2006).

migration create social tension and political instability. The third scenario was described as ‘Catharsis’ (subtitled Ethical Technocracy). It refers to the state of economic growth and a shift towards social and environmental sustainability. Global reality in this story is opposite to the vision described in ‘Supernova’. It portrays a utopian state of the world affairs, in which economic systems in most countries are based on knowledge and values supporting sustainable development principles. In this scenario, quality of life, locality and small business are seen as a foundation for a new economic order replacing capitalism.

2. European Scenarios

The work on the European scenarios was initiated during the workshop in London and completed by the researcher after consultations with the project collaborators and participants. Three scenarios - ‘Web’, ‘Bastions’ and ‘Terra Nova’ - were constructed against the axes of ‘Sustainability’ and ‘European Integration’. Figure 5.6 below presents the axes and European scenarios on the matrix.

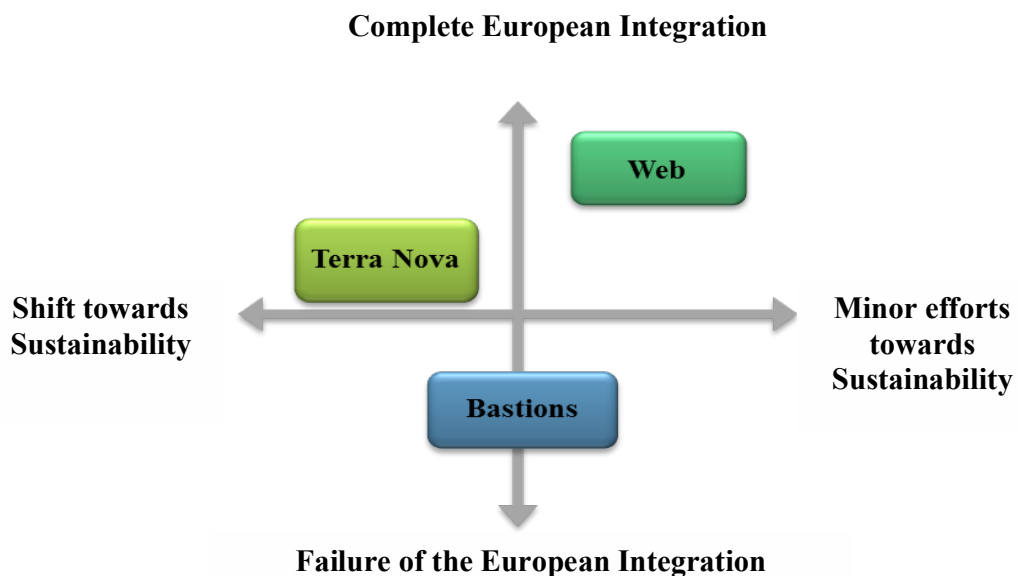


Figure 5.6 European Scenarios

The first of three scenarios was entitled 'Bastions'. It presents Europe stricken by economic, social and environmental tensions and the lack of cohesion policy. Minor efforts towards sustainable development gradually lead to environmental degradation. According to workshop participants discussing this scenario during the brainstorming session, in twenty years from now Europe will be shaped by economic instability, inequality, conflicts and unsustainable development. The second scenario, 'Web', describes further EU integration and minor efforts towards sustainable development. In this vision of Europe towards 2030, the EU operates as a massive corporate body used to create regulations giving the privileges to large private companies. Generally, it assumes stability, increased globalisation and technological advances, coinciding with the failure of environmental sustainability. The third European scenario, 'Terra Nova', is based on the axis of political, social and economic EU integration and implementation of all three dimensions of sustainability into public and private practice. As experts described it, this scenario assumes social solidarity and environmental protectionism.

3. Asia-Pacific Scenarios

The storylines for Asia-Pacific scenarios were constructed during the workshop with real estate professionals and academics held in Hong Kong in early 2008. Scenarios 'Orient Express', 'United States of Asia' and 'Broken Promises' were plotted around the internal reforms and regional integration axes presented in Figure 5.7 Asia-Pacific Scenarios below.

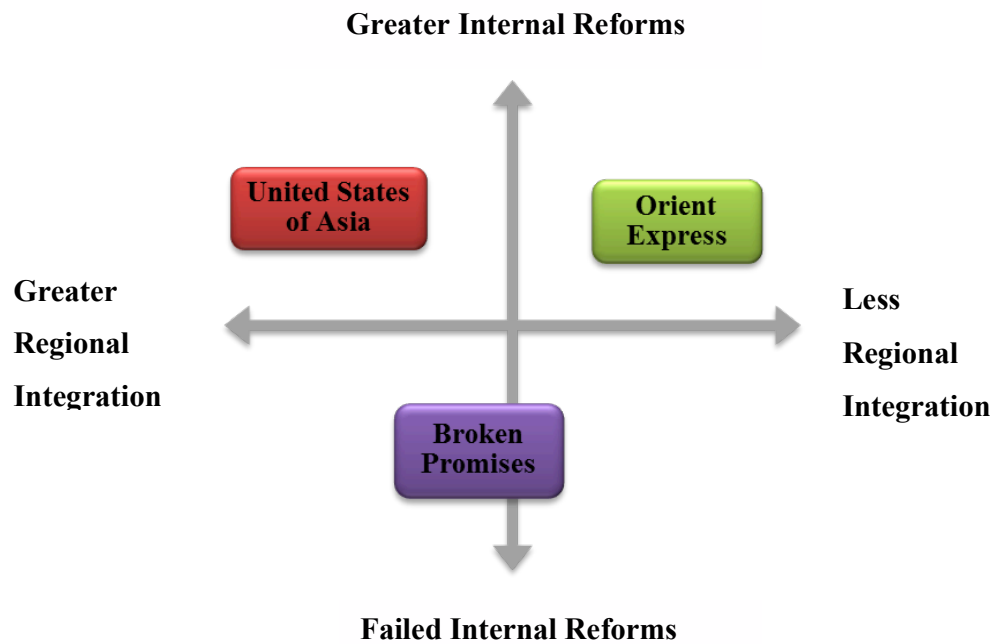


Figure 5.7 Asia-Pacific Scenarios

The first scenario, ‘Orient Express’, presents the region through the prism of successful internal reforms and failure of regional integration. According to workshop participants in this scenario Asia-Pacific is full of contradictions, deep local differences and failed social and environmental sustainability paradigm leading to poor quality of life in the overpopulated urban areas. Contrary to ‘Orient Express’, the second scenario, entitled ‘United States of Asia’, describes regional integration and a focus on social and environmental issues. In this rather utopian vision of the region, businesses will share values placing emphasis on quality of life, solidarity and environmental protectionism. The third scenario, ‘Broken Promises’, was found by workshop’s participants as less desired and favourable than the previous two. Its storyline was created on the basis of the failure of internal reforms and withdrawal from regional integration. This scenario presents a region of political and economic instability and progressing natural environment degradation.

4. North American Scenarios

After the identification of two critical uncertainties that could potentially govern the evolution of the North American commercial real estate industry, The Futures Academy together with the experts taking part in the Chicago workshop, constructed plots of three scenarios for this sphere in 2030 against the axes of ‘Political Stability and Civic Security’ and ‘Energy Availability and Resource Management’ (Figure 5.8 North America Scenarios).

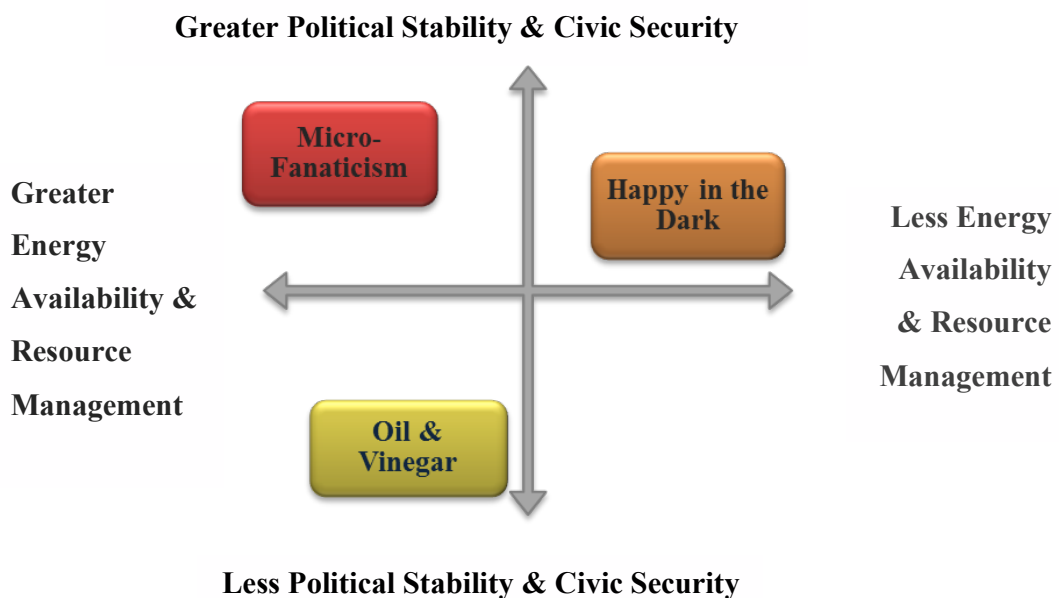


Figure 5.8 North American Scenarios

The first of the three scenarios, ‘Happy in the Dark’, describes the state of greater political stability and civic security combined with less energy availability and poor management of natural resources. North America, and specifically the U.S., is struggling with the problem of overpopulation in the urban areas, illegal immigration, scarcity of resources and the lack of a coherent energy policy. Economic cooperation between Canada, the U.S. and Mexico leads to the establishment of the North American Union, which brings relative political and financial stability. The second scenario,

entitled 'Oil & Vinegar', is based on the axes of 'Greater Energy Availability and Resource Management' and 'Less Energy Availability and Resource Management'. It portrays the region facing the possibility of economic depression, low levels of consumer spending, a high unemployment rate and the lack of market transparency. Experts taking part in the North American workshop perceived this scenario as less favourable, yet possible to occur within the next twenty years. The third scenario, 'Micro-Fanaticism', presents the region of greater energy and resources availability and greater socio-political stability, which makes it the most positive among all three scenarios developed during the Chicago workshop. The motto of this scenario is 'think global, act local', and initiatives like micro-financing and social responsibility are at its centre.

To sum up all scenarios developed in the study one of the project collaborators aptly stated that:

“Any of these scenarios may be believable, but it is most likely that a mixture of these will shape the future of real estate. Perhaps most critically, these scenarios raise the question of whether we are ready for the next 20 years.”

He also emphasized that the lesson learned from the futures process should be the notion that the future is shaped today. Current decisions should be seen as basis for the events that will take place over the following years and even decades.

5.4.1.7 Testing policy options

Policy options testing is a step in the ‘Prospective through Scenarios’ process, which answers the fundamental question of how the task, issue or decision identified as the strategic question looks in the light of the scenarios constructed (The Futures Academy 2008). In the case of the BEF 2030 research this included the consideration of major forces of change affecting the commercial real estate industry and the policies required by property companies to respond to the growing demand for environmentally and socially sustainable developments and services. The procedure used to identify policy options was the same in all three regional workshops. Participants were asked to list the preferred industry responses to the situation described in scenarios. The overlapping concepts were chosen as policy themes.

Due to time constraints during the *global workshop*, testing of the policy options was not conducted. Instead, two other sessions, ‘Best Dream and Worst Nightmare’ along with ‘Five Big Questions’, were put on the agenda. Their results were used to identify turning points and preferred vision discussed further in this chapter. Policy options testing in the *European phase* of the project took place during the London workshop. Experts were asked to discuss possible and probable consequences for the property industry if ‘Bastions’, ‘Web’ or ‘Terra Nova’ scenarios came true. As a result of a brainstorming session the following policy options were found:

1. Quality of Life and Distributed Equity, referring to issues like achieving work and life balance, responding to increased demand for leisure development.

2. Democratic Systems and Collaborative Leadership, achieved through socially responsible investment (SRI), promotion of accountability, transparency and public-private partnerships (PPP) among real estate corporations and individual investors.
3. Education, Knowledge, and Cultural Awareness, all focused on supporting social and environmental principles of sustainable development.
4. Environmental Healing, regarding issues as waste management, environmental and social responsibilities of public and private enterprises.
5. New Global Economics, understood as natural environmental protection through taxation and financial penalties for polluters enforced on a national and local level.

Like in the case of European scenarios, the investigation of *Asia-Pacific policies* was also conducted in the form of a brainstorming session during the workshop with property experts. The results were five policy themes for the property industry in the region:

1. Technological Advance and Energy Distribution, referring among others to scarcity of energy supplies and use of alternative energy sources in buildings.
2. Micro and Macro Scale Development, requiring anticipation of possible market shocks and shifts through monitoring of trends and issues by specialised property advisory companies.
3. Population, Education and Employment, including enforcement of labour codes and regulations at the construction sites.

4. Land Stewardship and Environmental Concern, signifying challenges for urban areas in the fast developing Asian economies, such as air pollution, degradation of brownfields and shantytowns.
5. Collaboration, Social Cohesion and Values, including problems of gender inequalities in the workplace and social tensions in the low-income neighbourhoods.

Identification of policy options regarding the *North American sphere* was conducted during the Chicago workshop. Experts taking part in the discussions distinguished these five themes:

1. Federal/State and Local Governments, referring mainly to urban areas planning and promoting the PPP projects among local developers understanding the needs of the communities in which they operate.
2. Existing Stock Security in the Urban Areas, requiring analysis and understanding of property and business life- cycles, withdrawal from poor quality housing and control of urban sprawl.
3. Economy, Transparency and Accountability, relating to corporate reporting and restoration of business codes and values.
4. Energy and Environment, requiring energy savings and waste management in all types of properties from offices to warehouses.
5. Society/ Population/Demography, concerning concepts such as liveability of urban areas and social housing.

Policies identified by experts taking part in one of three regional workshops regarded a wide range of issues from energy saving to business values and ethics. This variety of themes suggests that among property specialists the concept of sustainable development is perceived as complex and ambiguous, yet possible to confront and discuss with the use of methods from the Futures field.

5.4.1.8 Identification of turning points

One of the concluding steps of the Prospective process in the macro-regions was identification of turning points. In the *global part of the study* it was replaced by the group discussion on major questions and uncertainties for the entire commercial real estate industry. The global queries referred to the matters of SRI, scarcity of natural resources and the role of governance in providing housing affordability. In *the European sphere*, identification of turning points for the sustainable future of the commercial real estate industry was a result of group discussion between the workshop participants facilitated by the Academy. The three main issues chosen by experts and presented in the BEF 2030 final report were:

- EU politics and international/national law regulations forcing companies to adopt sustainable policies and actions;
- holistic approach towards corporate responsibility including accountability, transparency, legitimacy and values;
- growing demand for green developments.

This process proves that in the opinions of BEF 2030 experts the commercial real estate industry needs signals from the external environment to follow the path of

sustainability. Project participants especially felt there is a general lack of understanding of sustainability principles among property professionals. Numerous companies have their own definitions of sustainability, which are not coherent with each other.

A similar methodological approach to the one used in *the European part* was applied by The Futures Academy to identify turning points in *the Asia-Pacific sphere*. After development of scenarios and policy themes, experts were asked to discuss issues which could shift the industry towards or against sustainability. Workshop participants chose:

- legal regulations enforcing green developments in public and private property projects;
- a return to cultural and philosophical roots of the region; and,
- migration trends and the birth to death ratio in the urban areas.

Asia-Pacific experts, like the European ones, pointed out legal regulations supporting sustainability as the most significant turning point for the green future of the industry in the region. They shared the opinion that challenges associated with sustainability lying ahead are formidable, but adoption of solutions from the Western hemisphere (Europe or North America) may not be adequate given differences between the regions. Decision-makers have to reach back to the heritage and philosophy of the region and urban development.

In *the North American sphere*, discussion on turning points was mainly focused on:

- energy availability and alternative sources of power for oil dependent U.S.;
- uncertain future of capitalism, and
- social pressure towards environmental responsibility.

All three areas discussed by experts during the Chicago workshop from energy to economy and society could have a significant influence on change within the property industry. To illustrate this argument, the example could be social acceptance of unsustainable practices, which may hinder the change towards greening the properties and responsible investing.

5.4.1.9 Producing the Prospective

After concluding the research in regions and gaining the global overview, it became clear that one universal representation of the preferred future for all spheres could not be developed. Instead, specific and detailed visions had to be created for each of them. They were based on the results of workshops, strategic conversations, questionnaires results and a literature review conducted by researchers from the Futures Academy.

Figure 5.9 below groups all the elements used to develop the preferred vision.



Figure 5.9 Elements forming the Prospective

The central vision of the future for the commercial real estate industry was sketched during the global workshop in the ‘Best Dreams and Worst Nightmares’ session, which aimed to identify not only the preferred vision but also the least favourable one. Experts agreed that carbon neutral cities and economic growth represented the desired vision, while economic recession combined with the negligence toward environmental challenges portrayed the least desired future.

From the European perspective the preferred future for the real estate profession included the following areas:

- solving the affordable housing dilemma through encouraging leasing instead of homeownership and transparent loan systems;
- transforming city centres into carbon neutral areas, and
- providing affordable and accessible leisure and health facilities for the elderly.

In the case of the Asia-Pacific region the Prospective included:

- overcoming of bureaucracy and corruption in the investment and development processes;
- focusing on the urban poor and reshaping shanty districts into safe and liveable neighbourhoods through public-private cooperation, and
- reconsideration of validity of high-rise developments in Asian cities.

In the North American strand of the study the vision was based on:

- a balance between suburban life-style and commitment towards environmental healing through investment in transit oriented developments (TOD’s);
- restrictions on subprime lending, and

- overcoming issues of energy security by developing green properties.

Results regarding the preferred vision differ slightly for each of the regions; this proves that the investigated subject is broad, complex and should be studied with reference to the context. Its results should not be generalised without criticism. The conclusion of the BEF 2030 study described by the Futures Academy in the final report from November 2009 indicated that a mixed and complex global and regional reality towards 2030 and beyond will inevitably contain elements of each of the twelve individual scenarios developed but the final report can be used as a source of concepts and ideas regarding the long-term future.

5.4.1.10 Moving to strategic planning

As discussed in Chapter 3 the Prospective process should not be finalised at the stage of scenario creation or policy development. Its purpose is to propose a path towards implementation, and actions needed to achieve the preferred future. Therefore, the last step of the BEF 2030 study was to create a link between the results of creative thinking with strategic planning. Among numerous suggestions was a concept of supplying the European market with affordable housing projects and special amenities for an ageing population. One of the project collaborators stated during the Chicago workshop:

“The Credit Crunch of 2007/08, and recession which followed, caught most of us by surprise and exposed the drawbacks of conventional forecasting, techniques that are generally limited to only 5 years (...) The Built Environment Foresight 2030 project helps us see alternative visions of the future, as well as the different perspectives around the world.”

The overarching conclusion based on the study results and the researcher's observations was that an effective strategic planning for real estate professionals in one region will presumably require different actions to those in another sphere. Property markets and sectors can vary significantly in different parts of the globe. The same problem could have a different level of importance and impact. This could be conditioned by local legal requirements or the economy. Results of the Futures process applied in the investigated case exposed differences in perceiving and judging the same problem by experts from the same industry depending on geographical area of their business activity. Therefore, it is essential for companies to be able to link the outcomes of the Futures process with strategic plans according to the individual situation of business.

5.4.2 Observations regarding the methodology and methods

This section presents the discussion on application of futures methodology and methods in the commercial real estate industry based on the author's observations and feedback from BEF 2030 project participants. The author's reflections on the process applied in the investigated study are synthesised in Table 5.4 below.

Characteristics of the process	Facilitation and guidance
	Research team had a crucial role in the process, for instance to facilitate the workshops, explain experts' aims and expected outcomes of individual steps and the entire study.
	Collaboration and cooperation
	The Academy was collaborating in this study with RICS Foundation and King Sturge, additionally there were five institutions supporting the researchers during the project.
	Participation
Over one hundred participants, some of them representing major commercial real estate companies operating globally took part in the study.	
Source of data	
The major source of primary data in this study was participants opinions and views.	
Number of steps	
The purpose of conducting the process was not to develop sets of scenarios, or the preferred vision, but to create a link between creative thinking and strategic planning. To achieve that numerous interconnected steps were required to stimulate the discussion between participants.	
Creativity	
Methodology applied in the study required from the participants creative thinking and courage to share unconventional thoughts and opinions about the future with other experts, without judging other's ideas.	

Table 5.4 Author's reflections on the process applied in the BEF 2030 study

Facilitation of the process was crucial during the strategic conversations and workshops. Participants not familiar with the Futures field needed a clear explanation of their role and aims of the project. It required from the researchers proficiency not only in the Futures but also in the real estate field. This proved to be crucial, for instance, in the situations, when participants needed assistance with clustering the issues and trends or while plotting scenarios during the workshops.

Collaboration and cooperation with institutions and specialists well known and respected in the researched field were other important matters. As the study progressed cooperation was established with ULI European Sustainability Council, Hong Kong University, Purdue University, DePaul University and Salford University. Their participation and support of the project encouraged other companies and experts to take part. From the beginning, the Academy collaborated with RICS Foundation and King Sturge.

Participation can be discussed as both a strength and weakness of the study. The personal involvement of numerous experts allowed opinion sharing, which was beneficial in terms of data gathering but the requirement of personal participations was unfortunately also an obstacle. Numerous commercial real estate experts could not allow themselves to take time out of the office to take part in one-day workshop or 2-hour strategic conversation.

In this study the majority of gathered information was based on the personal opinions and views of experts. Unfortunately they were conditioned by the changing economic situation. The financial crisis, which started in 2007, had a negative influence on the commercial real estate industry on a global scale. Project participants were not prone to changes taking place in their business environment. For instance, together with deteriorating economic situation experts' opinions regarding the importance of sustainability issues were changing from positive to less supportive and uncertain.

The *number of steps* conducted in the methodological process could be considered as both a strength and weakness. On the one hand, ten steps leading to the strategic planning through identification of challenges, trends, and development of scenarios, policy themes and action agendas was a valuable and useful source of information. It also created a platform for discussion for planners and decision-makers. On the other hand, it required dedication of a significant amount of time to cover all the stages, which in the context of a profit-oriented property industry could be considered as too time-consuming or not effective.

Generally, the futures process requires from the participants the ability to think outside the box. In the case of BEF 2030 problems facing the property business environment were discussed from an angle other than the quantitative categories of loss, gain and cost. Therefore, the role of facilitators and speakers (called ‘Thought Provocateurs’) was crucial to encourage participants to share ideas and not to discard or reject others’ opinions as unreasonable and to ignite creativity. This led to the generation of multiple ideas which, after meeting financial requirements of profitability, could be applied as innovations.

The author’s reflections regarding the futures methods applied in the process were focused on four research tools: futures workshops, CLA, strategic conversations and environmental scanning (see also Table 5.5 for the author’s reflections on the futures methods used in the study). The first of the methods was a *futures workshop*. It was used four times in the investigated case study. Once it was applied in the form of a one-and-a-half-hour workshop regarding the global real estate and three times as a one-day

workshop in the macro-regions. The first form of organising the workshop proved to be fruitful in terms of ideas and concepts gathered; unfortunately it was also too short. Participants had only 10 to 15 minutes to consider the issues during each of five parts of the workshop and the facilitator (the author) was forced to stop many interesting arguments between the experts to keep up with the time-schedule. One-day regional workshops allowed longer debates and brainstorming sessions. This also led to the development of action agendas, policy themes and plotting of the scenarios.

Unfortunately the formula of forty-five-minute group discussion on scenarios was not enough to construct complete storylines, which were completed by researchers after the workshops. On the basis of this experience the author would advise a two-day or one-and-a-half day workshop, in order to give the participants more time to discuss the scenarios and to become familiar and acquainted with the futures concepts and aims of the workshop.

Other important lesson learned from the process regards the use of new methods, not practiced before during the workshop. During the first regional workshop, conducted in London, the *CLA method* was applied to discuss key driving forces of change, issues and trends. The results from Phase 1 were supposed to become a basis for further stages of the workshop, but unfortunately participants were not able to reach a consensus and agree on clusters while grouping their ideas with use of CLA. As this situation could jeopardise the success of the entire exercise the facilitator decided to order a short break and cluster experts' ideas with two other researchers into twelve themes (four for each of three groups). In this case two issues created a difficulty: lack of clear explanation of

what was expected from the participants and how it should be achieved, and the lack of a critical approach to assessing the ideas among experts. In this situation the responses of the workshop facilitator (Professor Ratcliffe) was crucial, while without the break and help of the Academy researchers in clustering the themes the exercise would not be finished.

During the same workshop the *though provocateurs* session took place. Two experts from the property field were asked before the workshop to prepare a ten-minute speech challenging the prevailing mind-set on the sustainable development concept within the industry. The session was interesting for the participants and stimulated a discussion on the major challenges regarding the implementation of sustainability principles with the industry. Unfortunately this concept was used only once during the process, while there were no volunteers willing to give a provocative speech during the other three workshops.

Strategic conversations can be an excellent source of information and opinions of experts in the real estate field - especially in the form of the focus group (like in case of the interview with architects and project managers in Chicago, during which discussion between the participants led to the investigation of additional concepts not considered by the interviewer). Unfortunately, the organisation of strategic conversations with real estate experts can be challenging due to their professional commitments. There were various situations when interviewees had to cancel the meeting with the project researcher due to their office duties. In such cases survey questionnaires were sent to experts by electronic mail, in the form of attachment to a cover letter.

Environmental scanning proved to be useful and relatively easy to apply in the research process. The important issue to consider while using this method is the critical approach, especially while using electronic media and Internet browsers like Google or Safari. They can list millions of results regarding the searched term, as in the case of sustainable development - over 262,000,000 results on 5th October 2011. To avoid ‘information flood’ the author critically filtered data and used academic databases like EBSCO and Emerald Fulltext, and professional real estate press publications, for example, ‘Estate Gazette’ and ‘ULI Magazine’.

Methods	Futures workshop The workshop was a main method of primary data gathering in the study
	Strategic conversations Strategic conversations were conducted in the form of individual interviews or focus group.
	CLA CLA method adapted from Inayatullah was applied once during the first futures workshop.
	Environmental scanning It was conducted to investigate and identify major trends and issues globally and in the regions.

Table 5.5 Futures methods used in the study

5.5 Synthesis

This chapter was focused on two issues investigated and analysed on the basis of the BEF 2030 project used as a case study. The first issue regarded the futures process and methods applied in the investigated study; the second concerned the results achieved in the project through application of the futures approach.

The analysis of the BEF 2030 case included a brief description of the origins of the project, geographical scope and the process and methods applied. In the investigated case all elements, beginning with methods applied, territorial scope to structure of experts' group participating in the study, were a source of important information regarding the development of a structured futures framework for application in the real estate practice presented in Chapter 7 of this thesis. It was focused on the investigation of the sustainable development challenges and their long-term implication for the built environment and specifically commercial real estate industry in the global context and the macro-regions: Europe, Asia-Pacific and North America. It is important to emphasize that the BEF 2030 results discussed in this chapter were not used to form any theory regarding sustainable development in this doctoral thesis but to determine how futures methodology and techniques can be used as an analysis and possibly a long-term planning tool within the commercial real estate industry along with traditionally applied quantitative methods.

Case study used in this thesis was divided into three phases: establishing the network of collaborators from the industry and academic research; exploring possible and preferable futures for property sectors and analysis of the results of the futures process. The project included a global and regional perspective, which exposed differences between experts in approach and perception towards the same problem conditioned by economic, legal, social and environmental factors. As a result, separate preferred visions (Prospectives) were developed for the European, Asia-Pacific, North American commercial real estate industries. Additionally, a global overview was also created. During this phase of the study it became clear that one universal representation of the preferred future for all spheres of real estate activity would be an overstatement, mainly

because there were too many differences between investigated spheres detected in the futures process. This was important information to take into consideration while developing a futures framework for analysis and a strategic planning process for application in the commercial real estate industry presented in Chapter 7.

This chapter also presented the author's observations from the BEF 2030 study. Main insights regarded the need for establishing collaboration with authorities in the field and proper selection of participants (to ensure an adequate representation of experts). Over the 2-year BEF 2030 study period the research process was modified three times. Alterations regarded, for instance, the application of the specific futures methods during the workshops, as in case where scenarios and policy themes/action agendas were replaced in global workshop by sessions on major questions and doubts for the future of the industry. All changes made in the data gathering process were conditioned by experts' availability and time-constraints. The global workshop had to be adjusted to the duration of the session specified by ULI. Some time-consuming techniques like scenarios, policies and agendas for action were replaced by debate on 'Five Big Questions' and 'Best Dreams/Worst Nightmares' for the industry.

Chapter 6: Survey Questionnaire Results Analysis

6.1 Introduction

Chapter 6 presents the analysis of quantitative data collected through the '*Future oriented methods and methodologies*' questionnaire, referred in this study also as Questionnaire 4. Discussion regarding results of the survey was divided into two distinctive, but interrelated parts. Firstly, findings concerning the level of familiarity and use of Futures in the commercial real estate industry are analysed and presented. Secondly, outcomes of significance test regarding the correlation between respondent's answers to the survey questions and their occupation are examined.

6.2 'Future oriented' methods and methodologies questionnaire: results

The online survey results were collected between October 2010 and January 2011 in the group of 71 real estate professionals. Discussion on the outcomes is divided into eight parts corresponding directly to the order of survey questions. Each part includes analysis (percentage, majority and minority of responses) and graphical presentation of the result developed with the use of the Microsoft Excel programme. General information about the survey questions and responses rate is presented in Table 6.1 below. Details regarding each question are examined in subsection 6.2.1-6.2.8 of this Chapter (see also Appendix 14 for a copy of questionnaire results).

Question Number and Issue of Concern	Number of Responses	Response Rate
1. Familiarity with any out of six enlisted futures methods like scenarios, strategic conversations and prospective workshops	71	42%
2. Practical use of any of six enlisted futures methods in planning process (including analysis stage)	70 (1 respondent skipped this question)	41%
3. Familiarity with futures methodologies and strategic planning tools	71	42%
4. 'Future oriented' methods and methodologies required in real estate professions like brokerage, development and investment	67 (4 respondents skipped the questions)	39%
5. Possible advantages of using 'future oriented' methodologies in planning processes (including analysis phase)	71	42%
6. Obstacles to applying Futures methodologies as planning tools in real estate practice	71	42%
7. Recommending Futures methodology like Foresight or Prospective as a planning tool in respondent's company	71	42%
8. Profession of respondents	71	42%

Table 6.1 The Number and percentage of responses to individual questions

6.2.1 Familiarity with the method

Question 1 (Q1) in the 'Future oriented' methods and methodologies survey regarded the level of familiarity with six enlisted methods: scenarios, strategic conversations, environmental scanning, Delphi survey, prospective workshops and CLA. As explained in Chapter 3, all of these methods are of Futures origins and some, like scenarios and environmental scanning, are already recognised and applied in the strategic planning field. The aim of this question was to define the level of familiarity with the selected futures methods in the sample group of real estate professionals taking part in the

survey. Respondents were able to choose multiple answers and were also given options to mark ‘None of them’ or to skip the question. Figure 6.1 below presents responses’ distribution in the survey population.

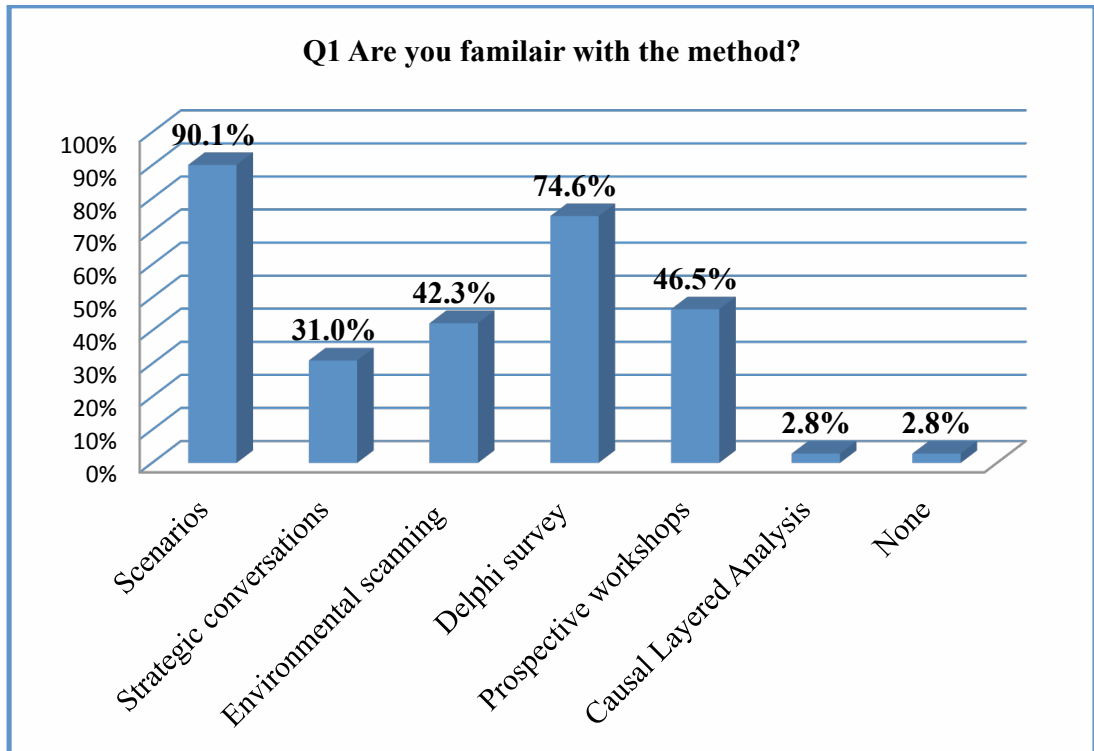


Figure 6.1 Familiarity with the Futures methods

The number of replies (N) for this question was 71%; none of respondents skipped a question and the response rate was 42%. The findings based on the Q1 answers indicate that three best known or recognised futures methods were Scenarios (90.1% of responses), Delphi survey (74.6%), and Prospective workshops (46.5%). As discussed before in Chapter 3, the first two, Scenarios and the Delphi survey, are already known and applied in the strategic planning field; the third one, the Prospective workshop, was used by The Futures Academy to conduct four workshops in the BEF 2030 project and, therefore, known to respondents participating in one of the futures workshops in London, Paris, Hong Kong or Chicago.

Less than the half of respondents was familiar with the environmental scanning (42.3%) and strategic conversations method (31%). From the researcher's point of view, particularly interesting was the level of familiarity of environmental scanning method observed at the relatively low level of less than 45% in comparison with that of the Delphi survey: above 70%. Environmental scanning is a method used not only in the Futures field but also, as indicated in Chapter 3, in the strategic management. It was be expected that the result would be greater, while taking into consideration the response group - employees or owners of companies operating in the commercial market.

The lowest response rate, obtained by the CLA method, applied once in the BEF 2030 study, was only 2.8%. However, the reason why only 2 respondents marked this method as known to them was not its single application in the project but most probably its novelty and seldom application even in the Futures field (according to information presented in Chapter 3 it was defined by Inayatullah in 2004 in 'The Causal Layered Analysis Reader: theory and case studies of an integrative and transformative methodology').

6.2.2 Practical use of methods in planning

The second multiple-choice question (Q2) concerned the practical use of futures methods in the planning processes in respondents' organisations. It was formulated as follows: "which of the following methods did you use in the planning processes in your company?" Its aim was to gather information about application of the method enlisted in Q1. The response rate was 41%, N=70, while one person skipped the question.

Details regarding this question are presented in Figure 6.2 below and discussed further in this section.

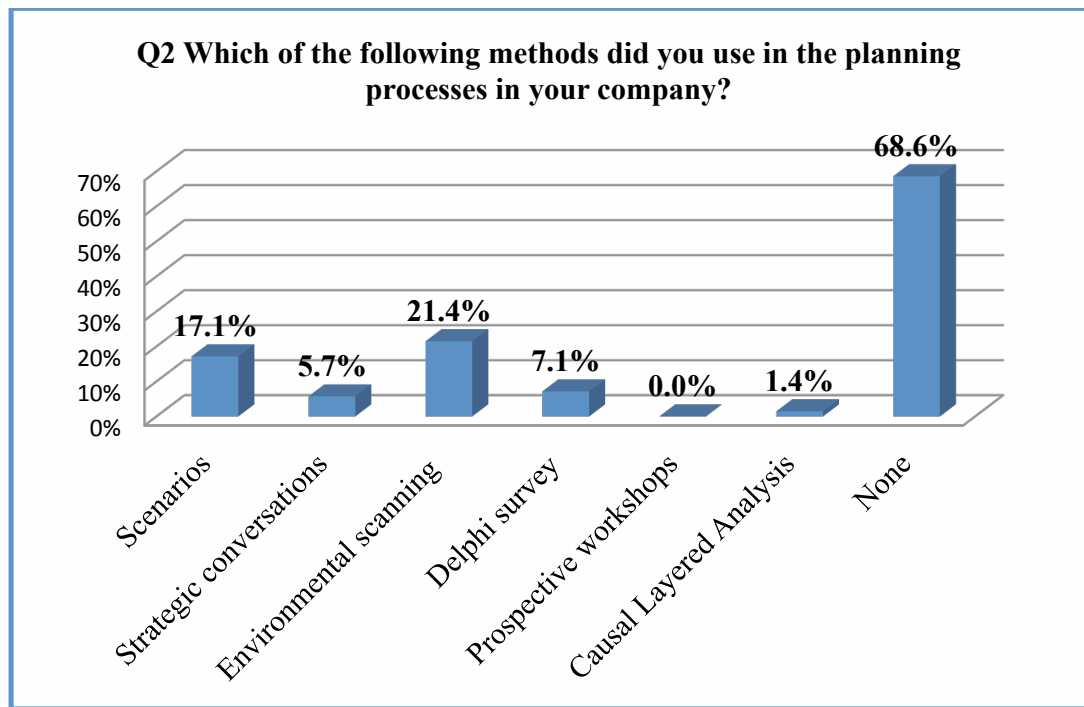


Figure 6.2 Application of the Futures methods in the commercial real estate industry

The overwhelming majority of respondents (68.6%) did not use any of the listed futures methods in planning processes in their organisations. This result proved that in the sample group representing commercial real estate industry futures methods were not commonly applied tools, although the level of familiarity discussed in Q1 was relatively significant (for instance over 90% of respondents knew scenario method). The highest rate of response among techniques in Q2 was for environmental scanning (21.4%), also known in the strategic planning field as horizontal scanning. Referring to Q1 the result for scanning means that almost half of the respondents familiar with this method also used it in practice (42.3% were familiar, 21.4% applied it). Other methods used in the real estate companies represented by the respondents were: scenarios (17.1%), Delphi survey (7.1%), strategic conversations (5.7%) and CLA (1.4%). The first one, scenarios,

has become increasingly popular in the recent years, not only in the real estate field but, as it was proved in Chapter 3, in other industries. Other methods, like the Delphi survey, could prove to be too expensive and time-consuming for companies or too difficult to implement, as in case of CLA examined in Chapter 5. In the author's opinion expertise regarding application of futures methods does not have to be required from companies' employees. In the current business environment it is a common practice to outsource experts specialising in the specific fields like Futures, IT or project management.

6.2.3 Familiarity with the term

The third question (Q3) was focused on familiarity with analysis/planning approaches characteristic of the Futures field and strategic management. Purposefully, Futures and strategic planning processes were set together in one question to enable comparison of the level of awareness of them among the respondents. Futures methodologies of Foresight and Prospective were listed as possible answers due to the fact that they were related to the BEF 2030 study. Others, like forecast and trends extrapolation, were listed as being some of the most characteristic strategic planning approaches identified in the secondary research described in Chapter 3. Similarly to Q1, respondents were able to choose in Q3 an unlimited number of answers from the given lists of options. For this question N=71, and the response rate was the same as in Q1 (42%).

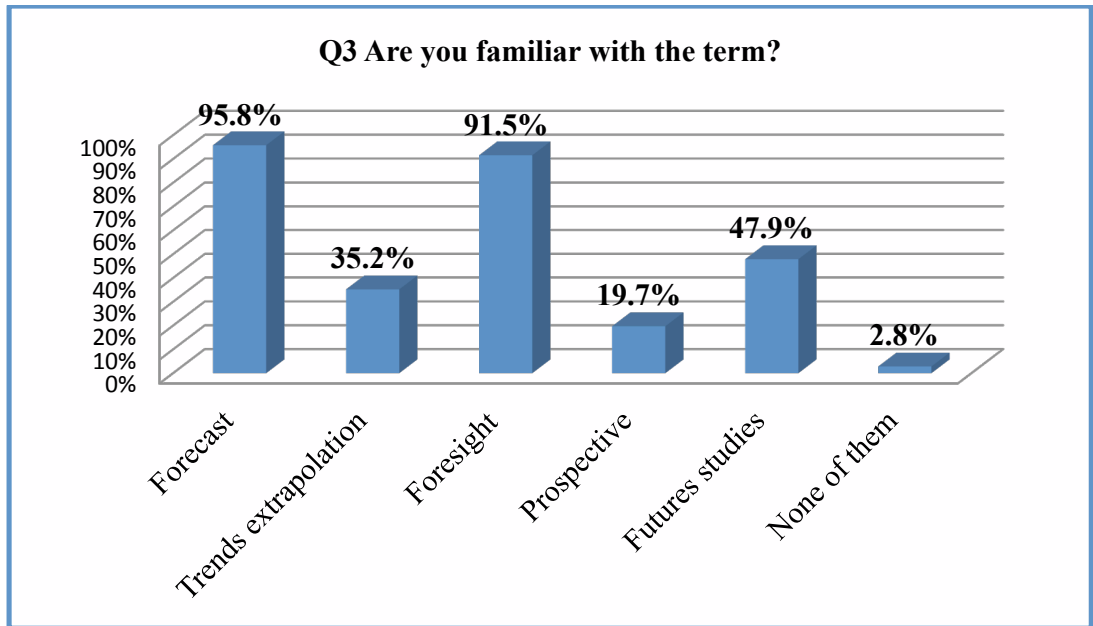


Figure 6.3 Familiarity with terms characteristic for Futures and strategic planning fields

According to the information presented in Figure 6.3 above, almost all respondents were familiar with forecast (95.8%) and foresight (91.5%), less than a half knew the term Futures Studies (47.9%) and trend extrapolation (35.2%). Almost every fifth person was acquainted with the term prospective (19.7%). and there was two respondents (2.8%) who did not know any of the given terms. The highest results of forecast and foresight in this survey can be explained, as discussed in Chapter 2, with the common application of the first of them in the strategic planning field and gradually growing recognition of the second one mostly in the public funded projects, for example, in the EU programmes. Futures Studies and Prospective were terms most probably familiar to BEF 2030 project participants rather than other respondents of the survey.

6.2.4 'Future oriented' methods and methodologies in the real estate professions

Question four (Q4) was formulated in the following way: “In which real estate professions are 'future oriented' methodologies and methods required?” and its aim was to identify real estate sector/professions, wherein application of Futures could be required. Participants were given a list of five areas of the commercial property industry to choose from, corresponding with the market segmentation discussed in Chapter 2. These were: asset and property management; appraisal/valuation; consultancy and investment services; agency and brokerage; and development/construction/architecture. Professions like asset and property management or consultancy and investment services were grouped together purposefully by the author of this thesis based on observations of market practice confirmed with information on major property corporations' organisational structures presented on their websites. Others, like development, construction and architecture, were classified in one category as professions closely linked with each other and traditionally acquainted with the same phase of the building life cycle.

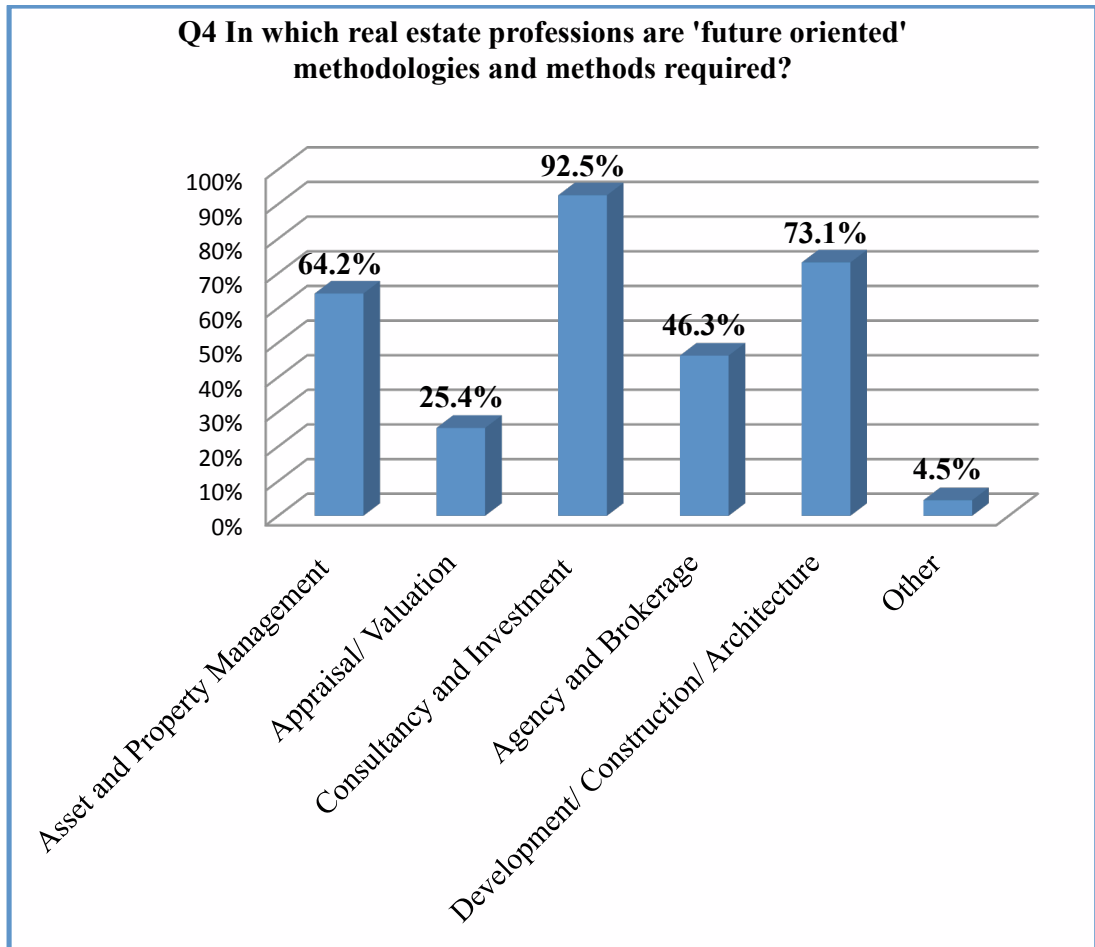


Figure 6.4 Real estate professions requiring the use of Futures methodologies and methods

The response rate for Q4 was 39%, with N=67 and 4 answerers out of a total population of 71 taking part in the survey skipped this question. In the opinion of the majority of respondents (92.5%) consultancy and investment sector required the use of Futures methodologies and methods the most out of five enlisted groups of professions. It is connected with all property sectors, from investment and development to management and appraisal. This could be a reason why advisory services were chosen as a profession requiring the Futures approach the most.

Futures were also indicated as essential in two other groups: development/construction/architecture (73.1%), and asset and property management (64.2%). The first group is interrelated with the initial phase of the property lifecycle, which, apart from quantitative calculations and legal procedures, also requires imaginative thinking and awareness of market trends. Similarly, asset and property management are professions more often applying qualitative techniques and in the opinion of respondents there is a possibility to implement Futures. According to the survey results, Futures are least required in agency and brokerage services (46.3%) and appraisal/valuation (25.4%). In both groups of professions, but more in surveying, the majority of procedures and tasks are based on the quantitative approach, from land property valuation to office space rent calculation. Respondents were also given an option to add other professions not listed. 3 survey participants (4.5 %) decided to choose this option to add answer 'none', meaning that in their opinion none of property professions needed to adopt a Futures approach.

6.2.5 Advantages of using 'Future-oriented' methodologies

In Question 5 (Q5) respondents were asked to identify advantages of using 'future oriented' methodologies in the real estate planning processes. The list of potential benefits given to respondents to choose from included: development of scenarios and policy options supporting decision making processes; possibility to build cooperation of different departments in the company and increase of innovation capacity. Respondents were also given an option to mark answer 'I have no opinion about this issue' and the opportunity to name advantages other than those listed. The number of responses in this

query was N=71; that means that all survey participants answered this question. Similarly to Q1 and Q3 the response rate reached 42%.

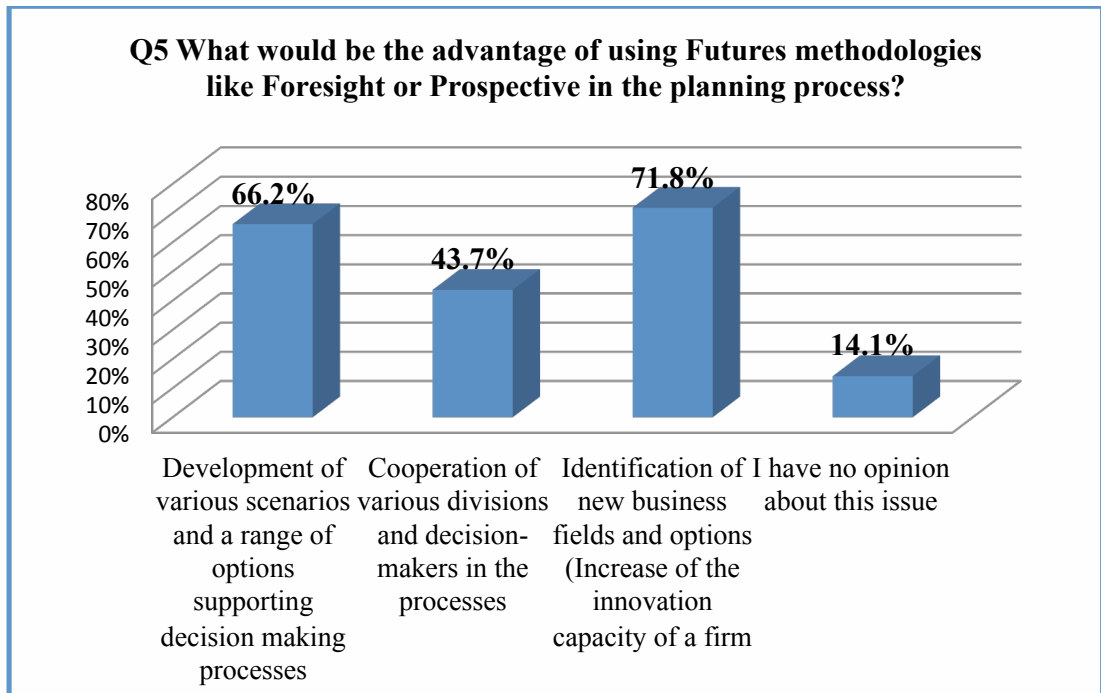


Figure 6.5 Advantages of Futures methodologies application in the property business

As presented in Figure 6.5, in the opinion of experts taking part in the survey the main advantage of applying Futures methodologies in the planning processes among commercial real estate companies would be: ‘identification of new business fields and options’ (71.8% of all responses). This means that 51 out of 71 respondents thought that recognition of new trends and ideas leading to innovation would be the most beneficial result of using Futures in their business. As the second most valuable gain from applying Futures, experts selected ‘development of various scenarios and a range of options supporting decision-making processes’ (66.2%); in other words, 47 out of 71 respondents shared the opinion that the main benefits of applying methodologies like Foresight or Prospective by real estate firms would be creation of scenarios. Third in the order of response count was ‘cooperation of various divisions and decision-makers

in the processes' (43.7%); this means that for almost half of the survey participants the benefit of creating cooperation between departments, employees and decision-makers was perceived as an important advantage of applying qualitative methodology in a traditionally quantitative business environment. Ten respondents, representing 14.1% of the sample group, chose the answer 'I have no opinion about this issue'. None of survey participants added other advantages to those listed in Q5.

6.2.6 Obstacles to applying Futures methodologies in real estate practice

In relation to Q5 regarding advantages of using Futures methodologies, Question 6 (Q6) was focused on obstacles to applying Futures approaches in real estate companies. In other words its aim was to identify the main difficulties seen from respondents' perspectives while using Futures methodologies in their businesses. The following options were listed to choose from: 'qualitative character of the processes; 'length and participatory character of the processes'; 'ambiguity/probability and predictability of the results' and the possibility to answer 'I have no opinion about this issue' or indicate other obstacles. Figure 6.6 below presents details on the responses rate to Q6.

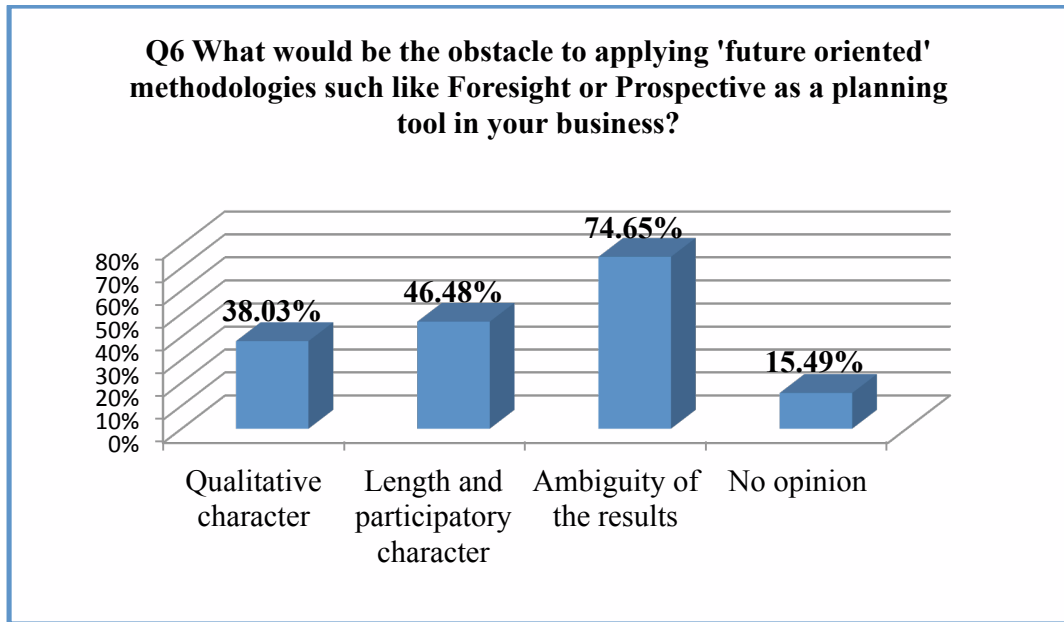


Figure 6.6 Obstacles to application of Futures methodologies in the real estate businesses

The response rate was the same as in case of Q5 and equalled 42%. The majority of the survey participants (74.5%) regarded ‘ambiguity of the results’ as the main obstacle to applying Future methodologies in the real estate business, while their results can often be interpreted in more than one way. ‘Length and participatory character of the processes’ was chosen as the second most significant obstacle to using Futures (with 46.5% of responses). Referring to the theory discussed in Chapter 3 and observations from the BEF 2030 project, Futures processes require the participation of a wide range of experts and could be time-consuming. The ‘Qualitative character of the process’ was the third obstacle in the order of obtained responses, chosen by less than half of experts (38%). It could be said that for at least of half of respondents the non-numerical nature of Futures methodologies was not a factor eliminating them as business tools in the property business. There were also survey participants (15.5%) who decided to select the answer indicating ‘No opinion’ about the issue concerned. None of respondents chose to add obstacles other than those listed.

6.2.7 Recommending Futures methodology as a planning tool

The penultimate question (Q7) was focused on the matter of advocating application of Futures methodologies as planning tools in respondents' companies. As presented in the Figure 6.7, Q7 included three options of possible answer to choose from - Yes, No or No opinion. Similarly to Q6, the response rate for Q7 amounted to 42%.

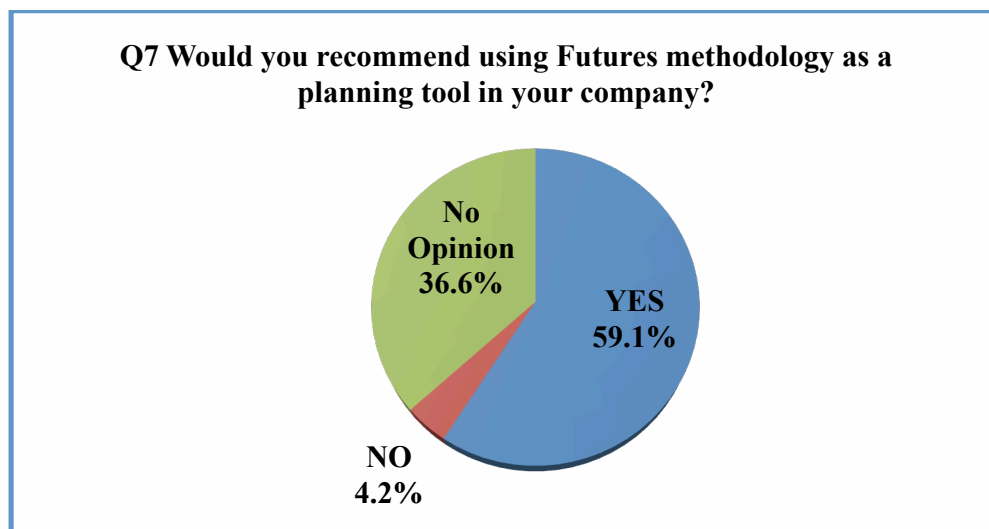


Figure 6.7 Recommending Futures methodologies as a planning tool in respondents' companies

The majority of participants (59%) selected answer 'Yes', indicating that they would recommend Foresight or Prospective as planning tools in their own business environment. Analysis of the responses also revealed that a significant percentage of participants (36.6%) had no opinion regarding this matter. Less than 5% would not recommend the application of Futures methodologies in their organisations and over one third had no opinion about this issue (36.6%). On the one hand, comparison of opinions for and against recommending Futures methodologies by experts taking part in the survey showed that several times more participants had a positive opinion about applying Futures, then negative. On the other hand, these results should not lead to a generalisation that most of professionals would apply Futures, because survey

participants were identified through purposive sampling and had an initial knowledge about methodologies like Foresight and Prospective through participation in the BEF 2030 study or cooperation with The Futures Academy.

6.2.8 Real estate professions represented in the survey

The last question in the survey (Q8) aimed to identify real estate professions represented by the respondents and was included for two reasons:

1. To systemise the group of respondents.
2. To enable analysis of potential correlation between occupation and answers given in Q1-Q7 (which will be discussed later in section 6.4).

Profession was the only criteria used by the author to differentiate the group of respondents, as it was considered valuable for the doctoral research to determine in which sectors of property market futures methods and methodologies are already recognised and could be applied in practice. Respondents were asked to choose one of the five following sectors: asset and property management; appraisal/valuation; consultancy and investment services; agency and brokerage services and development/construction/architecture or add other. Division of the industry into sectors used in this question corresponded with the structure employed in Q4. All respondents decided to mark their profession. N=71 and response rate was 42%. It is important to underline the fact that 21% of survey participants marked other than the listed professions or chose two professions, where one of them was listed and the second one was given by the respondent. The overview of the results is presented in Figure 6.8 below.

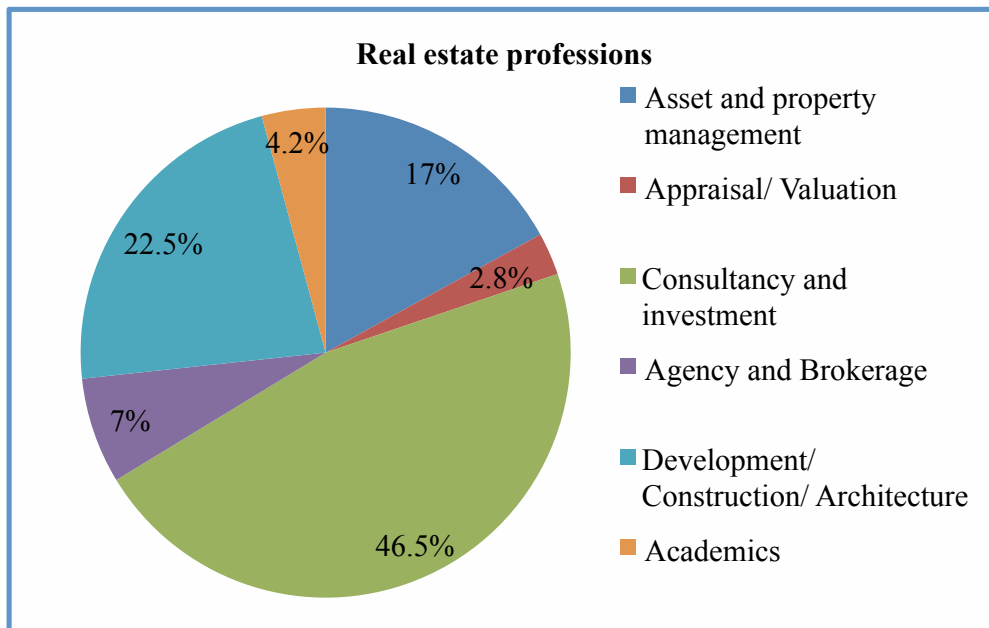


Figure 6.8 Respondents' professions

The majority of respondents (46.5%) represented the consultancy and investment sector. Taking into consideration the initial list of 170 potential respondents and focusing on consultancy and investment services it can be said that the largest group of participants was from advisory corporations operating globally. The second biggest group taking part in the survey (22.5%) were professionals assigned to 'Development/Construction/Architecture'. Referring to the list of potential participants to whom this survey was directed, it could mostly include specialists from small and medium companies of local and regional range rather than large and global companies. The third group in terms of the order of number of representatives was Asset and Property Managers (17%). They could be employed in companies specialising only in real estate management as well as in one of departments of consultancy services firms and de facto enlarging this group. Unfortunately, this information cannot be confirmed by data gathered in the survey. The least represented sectors were Brokers and Surveyors (7% and 2.8%). From the author's point of view it is important to emphasize

that 21% of all respondents were also academics (see Table 6.2 for detailed data). It means that every fifth person contributing to the questionnaire had close ties with higher education. Academics were among 9% of consultants/investment advisors, 12% of developers/ engineers/ architects and 58%% of property managers. 4.2% of the survey participants indicated that they were employed only in the academic field.

Profession	Number of academics in the group	Percentage of academics
Consultants/investors	3 among 33	9%
Developer/ engineers/architects	2 among 16	1.25%
Property managers	7 among 12	58%

Table 6.2 Academics among survey respondents

6.3 Correlation between the real estate profession and knowledge, and attitude towards the Futures field

After completing the analysis of data from Q1-Q8 presented in the previous section, the next step was a statistical test run to identify possible correlations between the answers given. As already justified in section 6.3.8 the only mean of differentiating the group of respondents was their occupation, while gender and age were considered as irrelevant to the issue under examination. To identify the correlation between survey participants' profession and issue like knowledge or attitude towards applying Futures methodologies and methods in the commercial real estate industry the Pearson's Chi-square analysis was conducted. (To briefly recall theoretical assumptions from Chapter 4, its results can be accepted as valid when asymptotic significance is lower than 0.05). Information

regarding significance tests results conducted in SPSS software¹⁴ is presented in Table 6.3 below.

Question 1-7	Pearson Chi-square test correlation between the profession and chosen answer in the questionnaire
1. Are you familiar with the following methods?	Yes. Question 1C
2. Did you use any of the following methods in the planning processes in your company?	No
3. Are you familiar with the following terms?	Yes. Question 3E
4. In which real estate professions are ‘future oriented’ methods and methodologies required at most?	Yes. Question 4B, 4C, 4F
5. What would be the advantage of using ‘future oriented’ methodologies such like Foresight or Prospective in the planning processes?	No
6. What would be the obstacle in applying ‘future oriented’ methodologies such like Foresight or Prospective as a planning tool in your business?	No
7. Would you recommend using ‘future oriented’ methodology such like Foresight as a planning tool in your company?	No

Table 6.3 Pearson Chi-square test results

There were five cases in which asymptotic significance was lower than 0.05, indicating a correlation between the profession of the respondents and answers chosen. These were Q1C, Q3E, Q4B, Q4C, and Q4F. The following sections 6.4.1-6.4.3 present the analysis and discussion on these cases. Data regarding all considered correlations is included in Appendix 15; detailed cross-table regarding identified correlations is presented in Appendix 16.

¹⁴ SPSS software has been recently named ‘IBM SPSS Statistics’.

6.3.1 Chi-square correlation between profession and familiarity with methods

In the first tested relation between the respondents' profession and familiarity with the Future methods (Q1) no significant correlation was identified, except for the answers to 1C regarding environmental scanning. To briefly remind readers, the question was 'Are you familiar with the following methods?'. Answer 1C was chosen by 30 out of 71 respondents (42.3%). Table 6.4 presents the asymptotic significance between the profession of respondents and recognition of the scanning method, which was 0.048, In other cases, for instance, scenario planning asymptotic significance amounted to 0.092, Correlation between respondents' occupation and familiarity with any other method enlisted in Q1 than scanning was not proved.

Question 1 Are you familiar with the following methods?	Pearson's Chi-square Asymptotic Significance (2-sided)
1 A Scenario planning	.092
1 B Strategic conversations	.365
1 C Environmental scanning	.048
1 D Delphi survey	.829
1 E Prospective workshops	.565
1 F CLA	.796
1 G None of them	.659
N of valid cases:	71

Table 6.4 Correlation between answers in Q8 and Q1

Analysis of responses to Q1C grouped according to the profession of survey participants proved that in three cases there was a correlation between occupation and chosen answer. These were:

- 100% of surveyors and others (academics) chose the answer 'Yes'.
- None of the brokers were familiar with the environmental scanning method.

According to Pallant (2007) if the number of responses is lower than 5, the results should be rendered as less valuable. In all three cases N was below 5. Precisely, there were 2 surveyors, 5 brokers and 3 academics whose answers were consistent. In other cases, for example, asset and property managers' distribution of responses was more or less even, indicating no correlation between occupation and reply given. Table 6.5 below presents the number of responses to Q1C according to all professions represented in the survey.

Respondents profession	Response count in Q1C according to the profession	Number of 'Yes' responses	Number of 'No' responses
Asset and property management	12	4	8
Appraisal/ Valuation	2	2	0
Consultancy and investment services	33	15	18
Agency and Brokerage services	5	0	5
Development/ Construction/ Architecture	16	6	10
Other (academics) ¹⁵	3	3	0
Total number	71	30	41

Table 6.5 Number and structure of the response group to Q1C according to profession

¹⁵ The response 'other' includes responses of academics only, excluding replies of survey participants who chose 'academic' as an additional profession. The total number of academics was 3 and market practitioners with academic links 12.

6.3.2 Chi-square correlation between profession and familiarity with Futures methodologies

In case of Q3, focused on familiarity with Futures methodologies, no correlation was detected except for one case of Q3E regarding the Futures Studies term. In other cases the Pearson's Chi-square significance exceeded the value of 0.05. Table 6.6 below includes results of all tests run for Q3.

Question 3 Are you familiar with the following terms?	Pearson's Chi-square Asymptotic Significance (2-sided)
3 A Forecast	.943
3 B Trends extrapolation	.529
3 C Foresight	.555
3 D Prospective	.620
3 E Futures Studies	.023
3 F None of them	.659
N of valid cases:	71

Table 6.6 Correlations between Q8 and Q3

Investigation of replies structure to Q3E showed a strong correlation between respondents' occupation and familiarity with the 'Futures Studies' term in the following groups:

- Appraisal/ Valuation profession, with 100% answers for 'Yes'.
- Consultancy and investment services, with 67% answers for 'Yes'.

As well as a strong correlation between profession and unfamiliarity with the term in the case of:

- 80% of brokers and 75% of developers/engineers/architects were not familiar with Futures Studies.

Similarly to the results of analysis of Q1C, correlation in the group of surveyors and brokers should be considered as less valuable due to the relatively low number of respondents; however, it shows a consistency in both groups. In this context it is important to emphasize results in the consultancy group. The majority of consultants, 22 out of 33 taking part in the survey, signalled familiarity with ‘Futures Studies’ term. Table 6.7 below summarises information regarding the number of responses to Q3E and their distribution according to profession.

Respondent’s profession	Response count in Q3E according to the profession	Number of ‘Yes’ responses	Number of ‘No’ responses
Asset and property management	12	4	8
Appraisal/Valuation	2	2	0
Consultancy and investment services	33	22	11
Agency and Brokerage services	5	1	4
Development/Construction/Architecture	16	4	12
Other (academics) ¹⁶	3	1	2
Total number	71	34	37

Table 6.7 Number and structure of the response group to Q3E according to profession

6.3.3 Chi-square correlation between profession and opinion about use of Futures in the specific real estate sectors

Results of the Chi-square test also proved a correlation between Q8 and Q4, specifically Q4B, Q4C, Q4F. These two regarded regarding respondents’ opinions about the use of Futures methodologies and methods in property consultancy and valuation. In other

¹⁶ Academics without an employment in the commercial real estate industry.

investigated cases there was no relation identified between the participant’s profession and their opinion about the application of Futures in the property industry practice. See Table 6.8 for numerical data on Chi-square results.

Question 4 In which real estate profession are ‘future oriented’ methods and methodologies required at most?	Pearson Chi-square Asymptotic Significance (2-sided)
4 A Asset and property management	.614
4 B Appraisal/ valuation	.012
4 C Consultancy and investment services	.005
4 D Agency and brokerage services	.599
4E Development/construction/architecture	.391
4F Other (academics)	.003
N of Valid Cases:	67

Table 6.8 Correlations between Q8 and Q4

Q4B was focused on possible use of Futures in the appraisal and valuation sector. A correlation was recognised with five out of six professions listed in Q8 and Q4B. In terms of the percentage of responses there was the following distribution of answers according to professions represented in the survey (Q8):

- Appraisal/Valuation with 100% for ‘Yes’ in Q4B.
- All brokers, academics and 87% of developers/engineers/architects and 78% of consultants stated that Futures are not required in agency and brokerage services.

This means that all surveyors answering Q4B stated that Futures are necessary in appraisal and valuation. The rest of the respondents from property brokerage, academics, developers/engineers/architects and consultants had an opinion that Futures are not required in appraisal and valuation.

In the case of surveyors, brokers and academics the number of responses was below 5, which indicates a lower significance of the results. In contrast, in the consultancy services group, there were 26 registered opinions against the application of Futures in property surveying. From the researcher’s point of view the result from the surveyors group was interesting: unlike the majority of questioned respondents, they pointed out the need for using Futures approach in their sector. Table 6.9 presents details regarding the number and structure of responses to Q4B.

Respondent’s profession	Response count in Q4B according to profession	Number of ‘Yes’ responses	Number of ‘No’ responses
Asset and property management	12	6	6
Appraisal/Valuation	2	2	0
Consultancy and investment services	33	7	26
Agency and Brokerage services	5	0	5
Development/Construction/Architecture	16	2	14
Others (academics) ¹⁷	3	0	3
Total number	71	17	54

Table 6.9 Number and structure of the response group to question Q4B according to profession

Another question in which correlation with Q8 was identified was Q4C. It concerned the possible use of Futures in the consultancy and investment services. Analysis of responses according to professions listed in Q8 and answers chosen in Q4C proved a dependency between the positive opinions (‘Yes’ answer) about the use of Futures in the consultancy sector according to representatives of the following professions (see also Table 6.10 below for data):

- Academics 100%.
- Consultancy and investment services 97%.

¹⁷ See remarks in footnote 13.

- Asset and property management 91%.
- Development/ Construction/ Architecture 81%.

The most significant correlations, in terms of absolute numbers, were detected in the consultancy, development and management groups. This proved that these survey participants were most convinced that the Futures approach is required in consultancy/investment services. The result from the academics group is less significant to the study due to the small number of responses (3 answers).

Respondent's profession	Response count in Q4C according to profession	Number of 'Yes' responses	Number of 'No' responses
Asset and property management	12	11	1
Appraisal/Valuation	2	1	1
Consultancy and investment services	33	32	1
Agency and Brokerage services	5	2	3
Development/Construction/Architecture	16	13	3
Other (academics) ¹⁸	3	3	0
Total number	71	62	9

Table 6.10 Number and structure of the response group to Q4C according to profession

The last question in which a correlation with Q8 was identified was in Q4F (detailed data in Table 6.11). It regarded application of Futures in professions other than those listed. Analysis of responses and a correlation test showed a strong dependency between 'No' answers and practically all represented professions, except for the agency and brokerage group (40% for and 60% against application of Futures in any other sectors than the five listed in the question). This proved that the majority of survey respondents

¹⁸ See remarks in footnote 13.

did not consider the need to apply Futures in any additional sectors to those five listed in Q4.

Respondents profession	Response count in Q4F according to profession	Number of 'Yes' responses	Number of 'No' responses
Asset and property management	12	0	12
Appraisal/Valuation	2	0	2
Consultancy and investment services	33	0	33
Agency and Brokerage services	5	2	3
Development/Construction/Architecture	16	1	15
Other (academics) ¹⁹	3	0	3
Total number	71	3	68

Table 6.11 Number and structure of the response group to Q4F according to profession

6.4 Synthesis

Chapter 6 presented the findings which emerged from the 'Future oriented methodologies and methods' survey questionnaire. The data was analysed, interpreted and presented in the form of graphics, tables and word descriptions. Various professions of the commercial property professionals participated in the survey. The results of the questionnaire indicated inter alia that the most recognised Futures methodologies and methods among real estate professionals were Foresight and scenarios, and the least were Prospective and CLA. The most frequently used method among the respondents was environmental scanning and none of them applied Prospective workshops in their businesses.

¹⁹ See remarks in footnote 13.

Other findings indicated that the Futures approach is most required in the consultancy and investment services and least in the appraisal/valuation sector. The survey participants considered the possibility to identify new business fields and options as a key advantage of applying Futures in their organisations and the ambiguity of the results as a main disadvantage. The majority of respondents were willing to recommend using ‘future oriented’ methodology such as Foresight as a planning tool in their companies, although a significant group did not have an opinion about this issue.

Generally, no correlation was identified between a participant’s profession and awareness or opinion about the use of Futures methodologies and methods, with asymptotic significance exceeding 0.05 in almost all examined cases, except for the questions 1C, 3E, 4B, 4C and 4F. In the case of questions 1C and 3E the test was considered as less valuable due to the fact that some cells had less than five observations, although the asymptotic significance was < 0.05 . No correlation was identified between respondents’ occupation and the choice of answers in question 2, 5, 6 and 7. This means that information gathered in the survey should not be analysed and interpreted through the prism of a specific sector of the property profession, for instance, surveyors or brokers, but rather as a general, numerical result of answers given by all respondents regardless of their specific occupation.

Chapter 7: Theoretical Futures Planning Framework

7.1 Introduction

This chapter presents recommendations regarding the use of a futures process as a tool supporting the strategic planning processes in the commercial real estate sectors. The proposition is based on data and experience gathered by the author during the two-and-a-half-year BEF 2030 study, documentary studies, survey questionnaire and oral and written feedback of the project participants, and collaborators. There are numerous factors important to consider while applying Futures in planning or analysis processes. Depending on the specific aim and objectives of the project, different issues will be important and, therefore, it is advisable to develop a flexible Futures model rather than a rigid framework. Its proposition is discussed in the following section 7.2.

7.2 Proposition of a Futures methodological framework

Inspired by ‘Prospective through Scenarios’ methodology tested in the discussed case study, and inspired by Berger’s metaphor (1957) of Futures field compared to the headlights of a speeding car²⁰, the author proposes a futures process framework consisting of three interdependent phases compared to sequences of traffic lights - red, yellow and green. The first of the proposed phases - **Initiation** - can be compared to the *red traffic light* forcing the driver to stop at the junction. It is a period during which

²⁰ Berger (1957) “the faster the car, the further the headlights must go”.

decision-makers should halt for a moment and think about the problem (for instance, about the long-term objectives of the company or a specific project). The second phase of the process - ***Analysis and Anticipation*** - can be illustrated by waiting at the *yellow light*. It is a time which allows for exploration of the current situation and preparation for the challenges ahead. The third phase - ***Towards Action Taking*** - is a parallel of the green traffic light. It is the stage of the process during which action has to be taken and direction chosen. Each of three phases requires numerous activities from the project leaders and stakeholders participating in it. Phases are interdependent and should be executed consecutively; however, their length and individual methods applied could differ significantly (see Figure 7.1). Details of each phase are discussed in the subsections 7.2.1- 7.2.3.

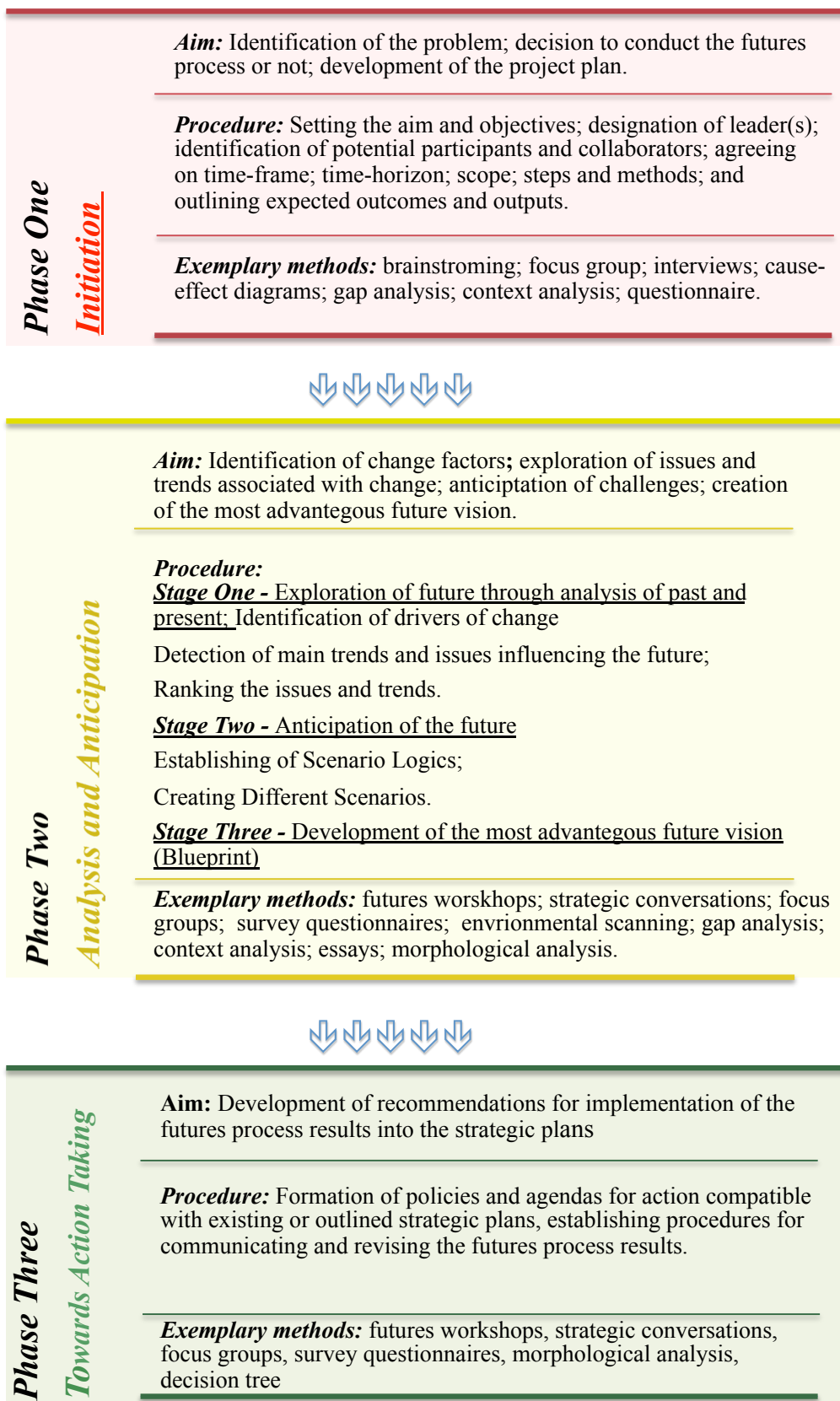


Figure 7.1 Methodological framework of the Futures planning process

7.2.1 First phase: Initiation

The initiation phase should be focused on the design of the process and procedures matching the needs and financial capacity of the specific organisation. There are numerous issues for consideration at this stage. Table 7.1 below presents the most significant ones.

Strategic question, aim and objectives		Project has to be built around clearly articulated question, aim and measurable objectives.
Scope		Differentiated, from internal to external business environment, local, national to international markets.
Human factor	Leadership	One person or a group (preferably authorities with a decision-making power).
	Process management and facilitation	Internal department, for example, research and analysis department, or a group of internal experts established for the purpose of the project. External consultancy company specialising in Futures can also be engaged to manage the entire process or to facilitate specific stages and tasks, such as workshops or focus group discussions.
	Participation and collaboration	Employees (including strategic decision-makers), clients, business partners and other stakeholders interested in the project.
Time-frame		Depending on the issue it concerns and the complexity of the researched area the process could be designed for a couple of weeks to even months but rarely years, due to the commercial character of the undertaking.
Time-horizon		Appropriate time perspectives can reach from a year to one or two decades ahead and in selected cases even longer.
Steps and methods		Strictly depending on the aim, objectives, time-frame and allocated human and financial resources.
Expected outcomes and outputs		Ideas possible to quantify and implement in the strategic plans; development of the most advantageous business solution to the researched problem.

Table 7.1 Issues to consider while designing the futures process

Strategic question, aim and objectives

The first and most important issue to discuss before launching the project concerns setting the strategic question, aim and objectives. They can be given by the research team or be identified at the initial stage of the project. It depends who commissions the project. For instance, it could be an internal initiative of the company and used for the purpose of strategic planning or a client from the market. There are numerous potentially helpful questions to consider when deciding whether or not to use futures methodology, to mention but a few:

- How does the futures approach fit into the existing planning procedure in the company?
- How the futures process and its results will be implemented into strategic planning?
- How will the company benefit from using the futures approach?
- How to identify potential participants and how to encourage them to take part in the study.
- What is the budget and expected duration?
- Do the competencies to manage the process exist within the company or is external support needed?
- What are the possible positive and negative consequences of success or failure of the futures project?

The list of questions presented above is not complete and should be supplemented with issues and areas important for a specific organisation or client and correspond to its needs and plans.

Scope

The scope has to be consistent with the aim and objectives of the study. Usually it includes investigation of the micro- and macro-environment of the organisation, exploration of clients' needs, activities of competition, economic factors or legal requirement influencing the analysed issue.

The human factor in the process: Leadership; Management and Facilitation;

Participation and Collaboration

Leadership, and Management and Facilitation, refer to the appointment of the project leader (or leaders), and delegation of responsibilities for conducting the study and analysis of the material gathered. The leader (leaders) need/s to be professional, with communication and cooperation skills and be open-minded and prepared to work with external experts. Depending on the scope and allocated resources, the project can be managed and facilitated by the leader, internal research team or consultancy company. These are standard solutions applied in the corporate world, including real estate firms. As discussed in Chapter 2, there are companies like Arup which have their own futures department and provide consultancy for clients. Others, like the former King Sturge or Johnson Controls, cooperate with external experts facilitating the futures process for them.

Participation and collaboration includes the choice of experts with a good reputation in the company, and preferably well known in the industry to take part in the study or support it. They can be chosen from among the company's employees or external experts, including managers and line-employees, business partners and clients or other

stakeholders. The goal is to assemble a diverse group of participants representing various perspectives and if possible sectors of the industry. It is crucial for the project leader or team to *cooperate* with and *communicate* the results to the strategic decision-makers to make them foster a sense of ownership of the outputs and commitment (they chose if the results of the futures process will be embedded in the strategy or not). To properly use the results and give the project recognition inside the company or by clients, a clear and effective communication strategy has to be established. This should include use of a wide range of communication channels exceeding printed project reports and descriptive documents. It is advisable to use an Internet platform and organise discussions.

In the author's opinion, throughout the entire process, cooperation and ideas sharing between process participants and project team is essential. To ensure this, three elements need to be considered while designing and conducting the process (see Figure 7.2 below): information, coordination and integration (ICI).

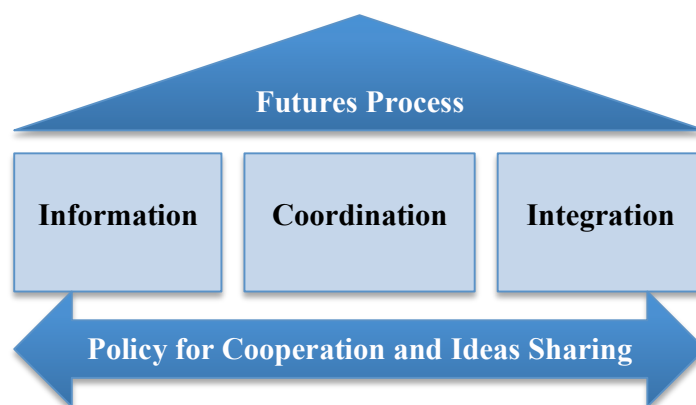


Figure 7.2 ICI Policies

The first element, *Information*, refers to establishing an information policy. This should include the procedure for data gathering and diffusing, while communication of progress and project results at all stages to stakeholders and participants could enhance their commitment to the process. The second factor concerns *Coordination*, which includes the project's leadership, steering committee and facilitation. According to the theory and practice of strategic management, all projects need a clear leadership and supervision. Similarly, all futures projects need to be managed by an individual or a group, preferably with decision-making power to apply the results in practice. The third element is *Integration* of results with strategies and plans of the specific company. It can be achieved through creation of a shared vision and ideas, which enhance the commitment and engagement of stakeholders in popularising and applying the outcomes in practice.

Time-frame and time-horizon

Time-frame and time-horizon depend on resources allocated for the study, subject and its complexity. There is no general rule for the futures project in terms of the time-frame. In a specific company the futures process could last a couple of weeks or months, sometimes even years. The time-horizon for the Futures Studies is usually a decade or two ahead but there also projects focused on the shorter term, like five years. The horizon is conditioned by the investigated problem and specifics of the industry and products.

Steps and methods

The number of steps taken in the process and individual methods applied also depend on the project's aim, time-frame and resources. In the profit-oriented commercial real estate industry it would be advisable to design a process based on the mix of qualitative and quantitative methods, instead of application of only a subjective qualitative model. The purpose is to enhance the credibility and usability of results. There is a wide range of futures and strategic planning methods to choose from. In the initial phase of the process it would be advisable to apply methods enabling identification of the main problems and their characteristics, such as brainstorming sessions, focus groups, interviews, questionnaires or gap analysis.²¹

Expected outcomes and outputs

Last, but not least, expected outcomes and outputs need to be considered before launching the project. Their plausibility, credibility and usability are crucial for the success of a futures exercise. If results of the futures process are supposed to be integrated within the strategic planning, it would be advisable to complement them by strategic competition analysis including monitoring of competitors, suppliers and providers of complementary services and also quantitative data on macroeconomic factors like GDP and foreign direct investment (FDI).

²¹ Gap analysis is used by organisations to compare their actual and potential performance. There are two vital questions to be asked by company while applying this tool: "Where are we?" and "Where do we want to be?" Answers to these questions can provide organisations with the information about gaps between optimal allocation of resources and their actual allocation and reveal areas for improvement (Franklin 2006).

7.2.2 Second phase: Analysis and anticipation

The second phase lies at the heart of the process and could be the most complex and time-consuming in the entire project. It consists of numerous steps requiring application of various methods, preferably not only from the Futures field but also derived from strategic planning and the real estate field, which could enrich and strengthen the credibility of results. This phase is divided into three stages aiming to enable linking present decisions with future expectations and involve analysis of past and present factors influencing or with a potential to influence the issue under investigation.

Stage One: Exploration of future through analysis of present and past

The first stage of the second phase is the analysis of the past and present. It includes identification of main forces driving the change, trends and issues from within and outside the industry. Generally, it can be divided into following steps:

- *Identification of drivers of change* through DEGEST advanced by Kotler (1997).
There are numerous research tools possible to apply to fulfil this task, for example, environmental scanning, futures workshops, expert panels or focus group discussions, targeted questionnaires and strategic conversations. It could also be beneficial to apply in the futures process context an analysis method such as SWOT analysis. It allows investigation of internal strengths and weaknesses and external opportunities and threats in the environment in which the organisation operates. Also, information already gathered by the company in other projects can be a crucial source of information and reduce the workload (see Figure 7.3 Information triangle for source of companies' knowledge).

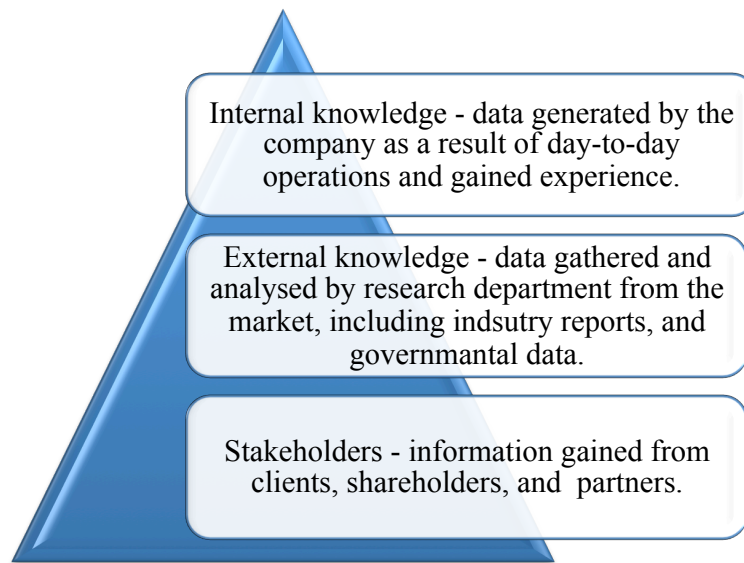


Figure 7.3 Information Gathering Triangle

- *Detecting the main trends and issues influencing the future.* On the basis of driving forces of change identified in the previous step, issues and trends characteristic for the commercial real estate industry and important for the investigated area (strategic question) are considered. These can be executed on the basis of similar methods to the drivers of change. There are no limitations regarding the range or a number of recognised issue and trends; on the contrary, the aim is to gather as many ideas as possible.
- **Ranking the issues and trends.** The purpose of this step is to classify all identified factors according to one of four groups according to their level of impact on the researched problem and likelihood of occurring (probability) – this could be clarified by participants, for instance, in futures questionnaires, futures workshops or expert panels and also by the research team alone. Generally, all issues and trends should be classified into one of the four following groups (see also Figure 7.4: Ranking issues and trends):

- Group one – factors shaping the context and relatively certain to occur. They are ranked as the most important and potentially with the highest impact on the researched problem;
- Group two - significant trends ranked as 2nd relatively certain to arise with a high impact on the subject under consideration but weaker than factors from the first group;
- Group three - pivotal factors, which may or may not occur but with a potentially significant influence on the investigated area, and therefore ranked as 3rd; and,
- Group four - potential jokers, which are highly uncertain factors with a relatively low impact but important to monitor in case of transforming into more significant trends.

It would be advisable to focus on the factors from the 1st and 2nd group to avoid information overload. It is also important not to overlook weak signals from the market and emerging trends usually assigned to the 3rd or 4th group. Issue and trends from this group could be a source of new ideas for products and services leading to a competitive advantage.

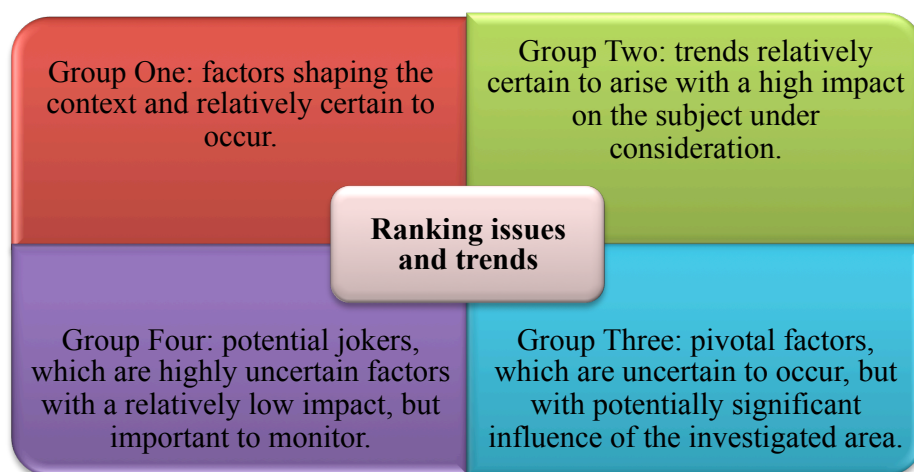


Figure 7.4 Ranking issues and trends

Stage Two: Anticipation of the future

Anticipation of the future is the next stage in the process. It consists of two steps which could be executed during the workshop or focus group discussion with experts or alternatively by the project team members:

- **Scenario logics establishing.** Scenario logics create a framework for plotting the scenarios. They are built on the basis of factors identified in the previous stages, specifically issues and trends from the 1st and 2nd group. There are various approaches towards establishing the logics, for instance, in the form of a matrix created by two factors chosen as the most important for the future of the researched area. Logics can be also developed on the basis of the most significant factor or more than two significant factors from the group one. Once the factors are chosen, the next task is to identify the extremes of their possible outcomes (for example: best - worst, highest – lowest etc.). Figure 7.5 presents selected scenario logics.

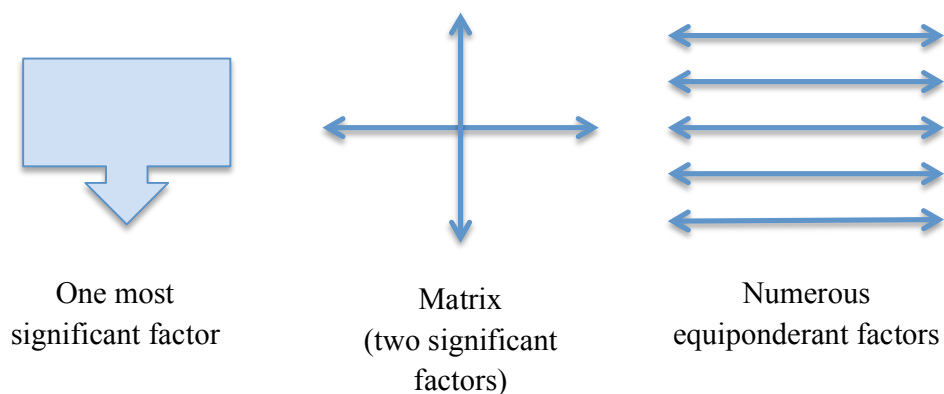


Figure 7.5 Scenario logics

- **Development of scenarios.** They can be stories in the form of narratives, built around scenario logics. There are numerous examples and theories regarding scenario crafting. Each organisation needs to define its own guidelines. The form, time-scale, scope or number of scenarios developed in individual projects can vary significantly

among each other. Table 7.2 presents synthesised information on scenarios development.

Characteristic	Remarks
Form	Most common narratives and also images, graphics, or tables.
Time-scale	From a couple of months to decades but usually 5, 10, 20 or 50 years ahead and reflect the time-scale of the specific project.
Number	Number can vary significantly, although usually 2 - 4 scenarios are created.

Table 7.2 Remarks on scenarios development

Referring to the results from the survey questionnaire 4 and observations from the BEF 2030 discussed in Chapters 5 and 6, there are the following conclusions regarding the use of scenarios by property companies:

- Should be based on both qualitative and quantitative data and projections. This approach could strengthen the credibility of narratives and create visible links between the present and future. It should include data on the return on invested capital and difficult to project natural disasters or consumer fads.
- Could be proactive (strategic) or reactive (tactical) depending on purpose of the project. Proactive scenarios could be applied in the strategic planning process regarding the long-term. Reactive scenarios would be developed as a response to the current situation, usually critical for the company, for instance, natural disaster, loss of reputation etc.
- Should not be only focused on the best and worst case. This approach could lead to oversimplification of the considered problem and make scenarios difficult to apply.

Stage Three: Development of the Blueprint

The third stage of the methodological framework is focused on development of the most advantageous vision (if necessary 2-3 visions). This proposition differs from the approach developed by the Futures Academy and tested in the BEF 2030 project. The author's observations from the project and practical experience from the real estate market led to conclusions that instead of creating a single and preferred vision – Prospective - it would be advisable to develop the most advantageous vision or more than one vision on the basis of objective criteria including quantitative measures. Therefore, it should be realistic and possible to achieve for the company by applying it into strategic plans. Preferably, experts could develop it during the workshop or focus group; alternatively it could be developed by the project team alone. The procedure should be initiated by discussion on ideas for the desired option and followed by development of a vision not in the form of an extensive narration but as a quantifiable Blueprint instead of extensive narration. Referring to the management field this vision could be described as the most favourable strategic option which should be realistic, credible and plausible, yet according to the Futures approach inspiring and comprehensive.

The idea to propose Blueprint instead of Prospective emerged from the results of Q3 from the survey questionnaire 4 proving that less than 20% of respondents chosen in the purposive sampling were familiar with the term Prospective. This result transferred to the entire population could prove that only a marginal number of property professionals have knowledge about Prospective, whereas, for instance, over 90% of respondents claimed their familiarity with Foresight. Referring to the pragmatism of property professionals the author proposes the term Blueprint to describe the most advantageous

vision (Figure 7.6 presents general characteristics of the Blueprint). According to Oxford Dictionaries Online (n.d.) a blueprint is “something, which acts as a plan, model, or template for others”. This term is used in the strategic planning practice. It was also used in the discussed in this thesis publication of ULI from 2008 “The City in 2050: Creating the blueprints for change”.

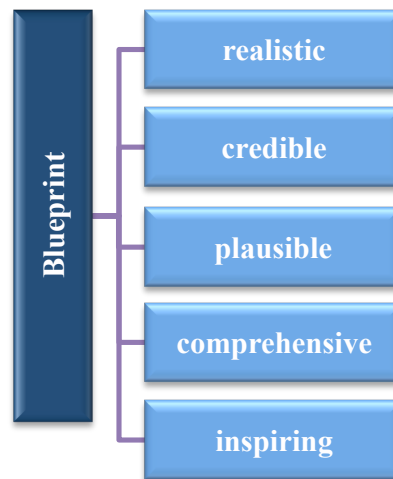


Figure 7.6 Characteristics of the Blueprint (the most advantageous vision)

7.2.3 Third phase: Towards taking action

The third phase of the process aims to bring the results of the futures exercise closer to the strategic planning, to create recommendations for applying the outcomes in practice. This requires consideration of *policies* and *agendas* for taking action based on Blueprint. They can be developed during the workshops or for example on the basis of strategic conversations. The most important issue is that proposed policies and agendas for action have to be robust and relevant to the company or specific project under investigation. They cannot be general and tackling too many problems. They have to provide an essential and informative input for decision makers crafted specifically for a specific company or project.

It is advisable to create between 1 and 5 policies and 5 to 10 plausible action agendas for each of them. They can be used directly in strategy formulation or revision and also be further elaborated in order to match the objectives of the company or specific project (see Figure 7.7 Operational diagram), for instance to outline the investment prospects, attractiveness of specific market sectors and geographical locations or identification of niche markets. It is also important to support these process projections with quantitative simulations. This could include forecasts of potential profits generated by new services and products ideas introduced as a result of the futures process.

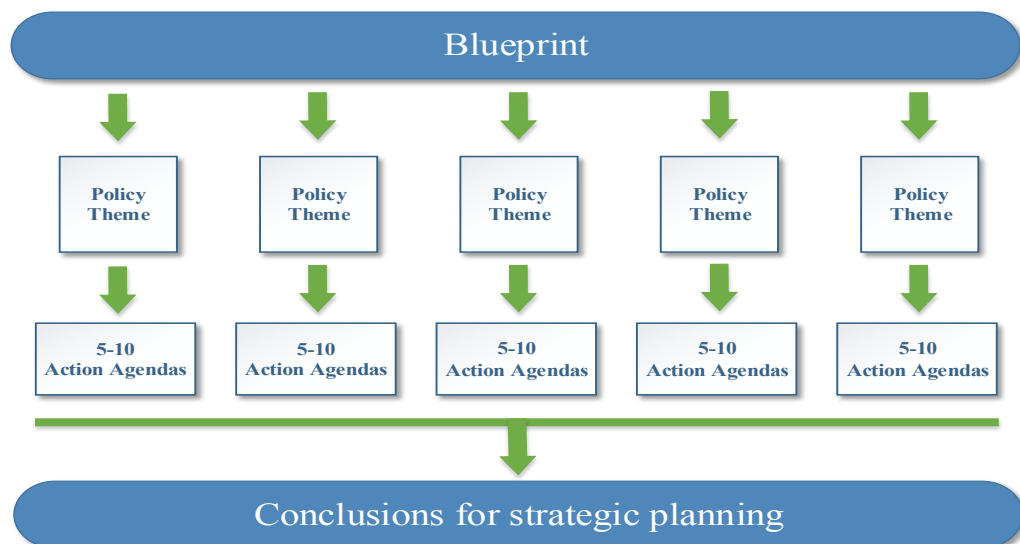


Figure 7.7 Operational diagram

Chapter 8: Summary, Conclusions and Recommendations

8.1 Introduction

This chapter focuses on the review of the doctoral study and its findings. It begins with a summary of the research. Next, the conclusions regarding the futures process and methods are presented. Finally, the contribution to knowledge and recommendations for further research are considered.

8.2 Summary of the research

This doctoral study tackles the issue of incorporating and innovative, qualitative approach based on futures methodology into a traditionally quantitative approach towards data analysis and strategic planning procedures employed by commercial real estate professionals. The main research question in this thesis "How futures methodologies, such as Foresight or Prospective, can be applied to support analysis and long-term planning processes used by the commercial real estate professionals?"

The study was not conducted in order to identify how qualitative methodologies and methods can replace quantitative process in the property practice but to outline and test how a qualitative approach can be used as complimentary and supportive tool for commercial real estate professionals analysing issues and developing business strategies in a complex, changing and uncertain environment. The aim of this work was to

develop a framework for applying futures methodology and associated methods by commercial property professionals.

To address the research question and fulfil the aim, detailed objectives were grouped into research areas and included: exploration of major tendencies in the commercial real estate industry towards the long-term planning; review of futures methodologies - specifically Foresight and Prospective - in relation to the strategic planning field and data analysis methods applied by commercial property professionals; examination and critical assessment of the BEF 2030 study carried out in the commercial real estate industry and formulation of proposals and recommendations for an effective and systematic use of futures methodologies as a tool supporting long-term planning processes and data analysis in the commercial real estate industry in a complex and fast changing environment.

Firstly, major tendencies in the commercial real estate industry towards the long-term planning identified on the basis of documentary research were discussed and presented in Chapter 2. This included a brief introduction to the commercial property industry segmentation and characteristics. Then the major challenges for the real estate companies and issues like risks and market cyclicity forcing change and causing uncertainty in the business environment were examined. After that, methods and processes used in the commercial real estate market analysis and planning were identified and discussed.

Secondly, an overview of futures methodologies and methods relevant to the long-term planning and strategic analysis, with a specific consideration of Foresight and Prospective methodologies, was presented in Chapter 3. This included discussion on the Futures field origins and terminology, major futures methodologies – Foresight and Prospective - and selected futures methods like scenarios and environmental scanning. Chapter 3 was concluded with consideration of similarities and differences between the futures methodologies and strategic planning processes and potential challenges to applying Futures in the commercial real estate practice.

Thirdly, a Futures study - BEF 2030 - carried out by the author of this thesis in the commercial real estate industry, was examined and critically assessed. The case was investigated in terms of its origins, aim and objectives, time-frame and time-horizon, participation and most importantly methodological process, methods and outcomes developed on the basis of a ‘Prospective through Scenarios’ methodological framework and adapted for the investigation of the commercial real estate industry future in three macro-regions and globally. The results of case exploration were discussed in Chapter 5.

Finally, the objective to formulate a proposal for an effective and systematic use of futures methodologies as a tool supporting strategic analysis and planning in the commercial real estate sectors was initially tackled in Chapter 6 and expanded in Chapter 7. This included the analysis of results of BEF 2030 case study and applied methodological procedures and an online survey questionnaire regarding the awareness and use of future-oriented methods and methodologies. Among the examined issues

were familiarity and practical use of futures methodologies and methods among real estate professionals, advantages and obstacles while applying futures methods within the industry and interpretation of significance test results regarding the correlation between a respondent's profession and answers given. Recommendations for the application of Futures methods within the commercial real estate industry are based on the primary and secondary data gathered in this doctoral study are discussed further in this chapter.

8.3 Conclusions

The outcomes of an in-depth examination of theory and practice of analysis and long-term planning procedures in the commercial real estate industry conducted in this thesis confirmed the argument that there is a need for implementation of futures approach to complement traditionally quantitative approach. Especially, that the commercial real estate industry business is rapidly changing and is expanding in multiple senses of its size, geographical extent and becoming an interdisciplinary field - including economics, law, spatial planning, architecture, engineering and business administration. This transformation from practically local and quantitative to global and referring to social and environmental trends requires adjustment from professional and development of new skills, including verbal communication, problem solving, report writing, team working than on technical knowledge.

Results of the BEF 2030 case study investigation and also oral feedback shared by the study participants onsite during the workshops and strategic conversations justify the

reasoning that the Futures field could play a role as a platform for networking, thought-sharing and imaginative thinking as in case of a global futures workshop held during the ULI conference in 2008 and session regarding ‘Best dreams’ and ‘Worst nightmares’ or discussion of emerging issues and potential new trends ignited by ‘Thought Provocateurs’ during the first futures workshop regarding the European strand of the BEF 2030 case study.

Referring to the results of the survey questionnaire discussed in Chapter 6, one can see that there are numerous sectors and issues within the industry in which application of Futures tools is possible and even advisable (see also Figure 8.1 Examples of Futures Application in the Commercial Property Industry). The majority of questionnaire 4 respondents pointed out that application of Futures methodologies and methods is required most in consultancy and investment and also in property development and management. Fewer professionals indicated valuation and agency as sectors in which Futures should be used more frequently. At the same time, the majority of respondents were willing to recommend use of Futures tools in their companies. Taking into consideration the results of the analysed case study and questionnaire, and literature review discussed in Chapter 2 and 3 the author proposes application of Futures methodologies and methods as proactive planning tools for:

- gathering ideas for development of new or redevelopment of existing properties.
- supporting social consultations processes in situations when dialogue and creation of common vision between investors and stakeholders (like local society) is required.
- monitoring emerging trends before they become apparent and obvious and to use this knowledge to create competitive advantage through new products and services.

- enabling analysis of multidimensional problems exceeding economic calculation, for example, including social or environmental like in case of socially responsible investment.
- creating long-term visions including decisions regarding expansion or withdrawal from the markets, potential mergers and acquisitions and launching new services.

Critically assessing the results of the study it has to be stressed out that Futures could be applied within commercial property sectors as tools supporting strategic planning but they need a wider recognition not only in theory but also in business practice. Experience gained from conducting 2.5-year BEF 2030 study proved that Futures is still a novelty for commercial real estate professionals despite the fact that numerous companies and organisations apply it for their internal (in planning) and external operations (for consultancy purposes). Therefore, Futures approach would need to be linked with the theory of real estate market and implemented into practice in the structured and legitimate form. For instance, as proposed in Chapter 7 as a Methodological framework of the Futures planning process based on the concepts and principles characterised by the Futures field, and particularly on the “Prospective through Scenarios” model elaborated by The Futures Academy DIT (section 3.4.2). Additionally, referring to the author’s observations from the study and thoughts about the future of Futures within the commercial real estate industry the role of academia in educating prospective managers and decision-makers cannot be overestimated. Proper information about the Futures field, methodologies and techniques could disseminate the knowledge and encourage alumni to apply Futures in practice.

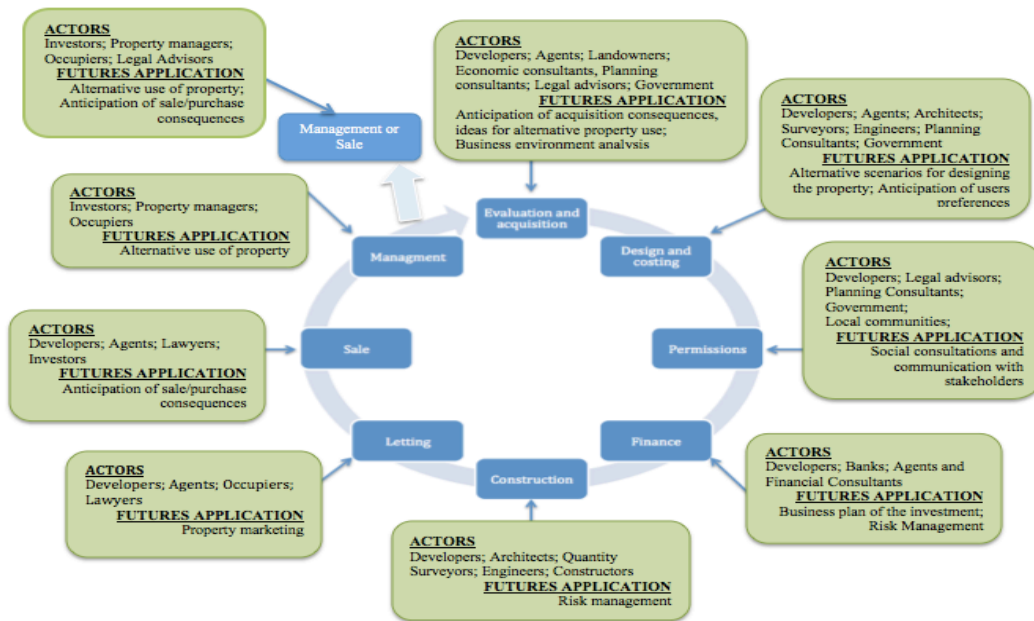


Figure 8.1 Proposition of Futures Application in the Commercial Property Industry

Source: Industry segmentation adapted from RICS (2004)

8.4 Limitations of the research

Although the aim of the research has been reached and objectives have been fulfilled, the author encountered a number of limitations to this research. They were related to *participation, methods, economic situation, budgetary constraints* and *testing of the methodological framework* developed in the result of conducting this doctoral research.

Participation was recognised as one of the main obstacles in this study. Due to business commitments numerous experts invited to participate did not take part in the first or second phase of the research. Therefore, the extent of property professionals and companies has been subject to the availability of those willing to take part. All of them contributed significantly to the research but in some cases their professional experience in analysis and strategic planning was insufficient to allow them to confidently opt for or against discussed issues. This was particularly evident in the results from the Asia-Pacific regional workshops in which many of participants were postgraduate students with relatively little or no professional experience. It did not cause a lapse in terms of the results gathered but created an incomplete overview of the region and its possible future. Therefore, to generalise the results for larger groups, data inefficiency was completed on the basis of documentary research. In addition, although author's involvement in the BEF 2030 study as the project researcher could be a source of bias and influence the assessment of the case study results, efforts have been placed on impartiality and trustworthiness mainly through a triangulation and crystallisation approach for managing and analysing the data.

Limitations also regarded research methods applied in the study. For instance, Questionnaire 4 was anonymous which potentially did not allow the researcher to get back to respondents regarding reasons for giving the specific answers. There were also no questions about age or gender. However, it was a purposeful decision of the author, while it was considered as irrelevant to the researched problem. Limitations concerning methods also resulted from the design of the investigated case study. From the variety of futures methods, only those applied in the *BEF 2030 project* were tested and discussed in the doctoral study. The majority of methods applied in the research were of a qualitative character and were in most of cases a novelty for experts. For instance, the CLA method applied during the first futures workshop to diagnose a situation and consider prospects for the European commercial real estate industry, proved to be too complex to use for the first time in the limited time frame by experts not familiar with the Futures field. In the later phases of the study the CLA method was replaced by a similar yet simplified tools discussed in Chapter 5 (driving forces of changes, major issues and trends).

Another important issue that limited the study was an economic situation. The research was commenced in late 2007, when in the global scale property markets reached their peak. Then, the U.S. subprime mortgage crisis became a trigger for the economic downturn recorded in all regions investigated in the case study. The financial situation of companies had a significant influence on experts. In this phase of the study their approach towards long-term planning and future trends became cautious and even critical; also, their will or availability to participate in Futures exercises, while facing an uncertain future, was limited.

The study was designed to investigate three macro-regions on the basis of the futures approach requiring opinion sharing, communication and interaction between experts and the researcher but unfortunately due to *budgetary constraints* that emerged when the study had already commenced and significant material on the European and global strand was gathered. Asia-Pacific phase was reduced to the necessary minimum, for example, only one researcher facilitated the futures workshop. This proved to be less fruitful than in the case of workshops guided and analysed by three researchers.

Furthermore, *the methodological framework* of the futures planning process has been created and assessed from a conceptual perspective. Nevertheless, a pragmatic testing has not been carried out due to the limitations of time and budget of the doctoral study and availability of experts. On the one hand, the framework might suffer changes or improvements when its implementation is imminent. On the other hand, it was not the aim of the research to develop a closed-end and universal model for application within the commercial real estate industry but to create an easy adjustable conceptual framework to analyse and investigate issue in various property sectors from investment to management sector.

8.5 Thesis contribution to knowledge

This doctoral thesis regarded the issue of application of futures methodologies and methods into analysis and long-term planning methods in the commercial real estate industry. This study was executed, inter alia, through documentary research in Chapter 2 and 3, examination of BEF 2030 case study (discussed in Chapter 5), survey questionnaire (analysed in Chapter 6) and theoretical framework (presented in Chapter

7). It was recognised that futures processes or individual futures methods like scenarios could be applied in the commercial real estate companies as a tool in the process of:

- identification of new, niche markets,
- recognition of customers and business trends specific to the industry;
- capturing a wide range of perspectives; and,
- tackling and reducing complexity and uncertainty through comprehensive outlook of the problem in the macro-economic environment of the firm.

Generally, application of futures methods or methodologies in the company may create opportunities for cooperation between participants from different departments, strengthen communication and exchange of information and enhance innovative, forward thinking and planning, organisation and management of knowledge about internal and external environment of the company. To benefit from applying futures in the business strategies, a company has to develop a structured process.

This doctoral research makes a number of contributions to knowledge. One of the main inputs of this study is *the conceptual framework* for application of Futures research in the real estate analysis and planning, and specifically in the consultancy sector. In the proposed model a multi-method approach was adopted to combine futures methods with strategic planning methods. In this sense the proposed framework advances the existing ‘Prospective through Scenarios’ methodology and adapts it for the needs of property companies. *New methods were tested and evaluated* as tools supporting property market analysis and planning: for instance, CLA. Advantages and disadvantages of applying futures methods tested in the study were specified in primary research results in Chapter 5 and 6. Also in the process of developing the framework *a critical examination of*

current analysis and planning approach within the commercial real estate industry was carried out. Its results are also considered as a contribution to existing knowledge. Also, of the research identified existing but rarely emphasized in the literature and practice links between strategic planning and Futures field, for example, application of the same methods, like scenarios and environmental scanning to analysis and problem solving.

This study also contributes to *the endorsement of Futures thinking in the commercial real estate industry*. For example, it shows the benefits of bringing together actors representing different sectors to analyse long-term trends and visualise their outcomes. This doctoral research provides valuable *insights into how a problem can be perceived differently by professionals from the same industry*, but representing different interest groups or geographical areas. It also identifies companies which could be acknowledged as benchmarks for applying futures methods in real estate and other sectors open to futures thinking.

Additionally, the study provides *a unique portrait of the industry* in the phase of rapid economic change. The research was commenced in the decay of the growth phase of the economic business cycle and carried out through the downturn phase between 2007 and 2011. It captures the views of experts about the future of the industry in the context of sustainable development paradigm seen as both a challenge and opportunity. Finally, the study *identified a number of areas for further research* regarding a broad body of knowledge from real estate market analysis to property management. These recommendations are discussed next in this chapter.

8.6 Further research

In the author's opinion it would be valuable to *empirically test the methodological framework of the futures planning process* in at least two selected property companies willing to participate in such a study, for instance, in two property management or investment companies to allow comparison. This would permit assessment and adjustment of a methodological framework to the needs of a specific company, and even broader, to the needs of the property sector. This framework could be complemented with suggestions and new ideas for improving or crafting it for a specific organisation. The futures process could be applied as a supporting tool, especially in situations where there is a scarcity of quantitative data about the issue and it is difficult to measure it because of the burden of data collection or creating algorithms.

Also, it would be noteworthy to *estimate processes in which Futures Research was applied in the commercial property company to analyse the market or develop strategic plans for taking action*. The study should be conducted among companies already using Futures in practice. In the primary and secondary research conducted in this doctoral research there were several firms identified, which potentially could become a subject of such an inquiry. This could be an important source of information about the best practices in the industry and recorded inefficiencies as necessary adjustments in the process.

Moreover, a *survey questionnaire regarding awareness, understating and willingness to apply Futures Research* in market practice could be applied. It would be addressed to property professionals not taking part in the BEF 2030 study or any other project

regarding the long-term perspective. Its aim would be to determine to what degree average industry representatives are aware of the futures methodologies and methods, and whether they see any convergence between Futures and tools they use in their businesses. The author would also like to suggest consideration of introducing Futures into real estate academic education to inform prospective managers and decision-makers about the field, methods, possible benefits and obstacles to applying the Futures process in to property practice.

Additionally, *an examination of stakeholders' opinions about the application of Futures* in the selected property companies or sectors could be carried out. This might be an interesting source of information regarding the purposefulness of companies using Futures. Opinions of clients, owners, business partners, and also employees could indicate if there is an actual interest in Futures in the real estate business environment. This inquiry would include questions about the benefits of applying Futures.

To conclude, in the case of tackling the multi-dimensional challenges lying ahead of companies operating around the globe there is no universal and one-size fits all approach. The overarching proposition concluding this thesis is that organisations interested in development and implementation of futures approach supporting the long-term planning procedures ought to find their own unique way of combining the two fields together to deliver valuable solutions. There could be numerous benefits of applying the theoretical framework proposed in this doctoral thesis in practice through the process of action research and adjusting it to the needs of the specific organisation. A verified and tested model may provide results better suited to matching the strategy and more comprehensive analysis of trends important for individual company. The

futures process adapted to the vision, values and objectives of the specific property corporation could be a valuable tool, especially in the current economic situation, in which companies need to respond not only to customers' needs and competition but also to act in a complex and fast changing business environment. This includes the global financial downturn, which started in 2007, and recent economic shocks and banking problems in the Eurozone (e.g. in Greece in 2012 and Cyprus in 2013) as well as mergers of leading commercial real estate corporations (for example, Jones Lang LaSalle with King Sturge in 2011).

Bibliography

Addo, Ch. (2000), *Corporate Mergers and Acquisitions: A Case Study*, iUniverse.

Aguilar, F. (1967), *Scanning the business*, New York: Macmillan.

Akademickie Mazowsze 2030. (2010), *Podręcznik metodyki Foresight dla ekspertów projektu Foresight regionalny dla szkół wyższych Warszawy i Mazowsza*, Politechnika Warszawska.

Alexander, K. (2003), *A strategy for facilities management*, Facilities, Vol. 21, Iss: 11/12, pp. 269 – 274.

Alper, A. and Oner, M.A. (2003), *An integrated view of foresight: integrated foresight management model*, Foresight, Vol. 5 Iss: 2, pp.33 – 45.

Amsteus, M. (2008), *Managerial foresight: concept and measurement*, Foresight, Vol. 10 Iss: 1, pp. 53 – 66.

Amsteus, M. (2011), *Managerial foresight: measurement scale and estimation*, Foresight, Vol. 13 Iss: 1, pp. 58 – 76.

Amsteus, M. (2011a), *Managers' foresight matters*, Foresight, Vol. 13 Iss: 2, pp. 64 – 78.

Anderson, D.R. (2005), *Corporate Survival – The Critical Importance of Sustainability Risk Management*, iUniverse.com, Lincoln.

Andriopoulos, C. and Gotsi, M. (2006), *Probing the future: mobilising foresight in multiple-product innovation firms*, Futures, Vol. 38, pp. 50-66.

Angrosino, M., and Rosenberg, J. (2011), *Observations on observation, Continuities and Challenges*, in Denzin N.K. and Lincoln Y.S. (Editors), *The Sage handbook of qualitative research*, 5th edition, Thousand Oaks, Sage, pp. 467-477.

- Ansoff, H.I., Declerck, R.P. and Hayes, R.L. (1976), *From strategic planning to strategic management*, John Wiley and Sons.
- Appleton, A.E. and Lehmann, J.P. (2011), *In pursuit of a sustainable global market economy*, Corporate Governance, Vol. 11, Iss: 4, pp.327 – 336.
- Archer, C. (2001), *International organisations*, Routledge.
- Arup (2006), *Drivers of change: social, technology, environment, economic, political*, Arup, London.
- Ayers, U.R. and Axtell, R. (1996), *Foresight as a survival characteristic: when (if ever) does the long view pay?*, Technological Forecasting and Social Change, Vol. 51 No. 3, pp. 209-35.
- Basu, S. (2010), *Business Cycles and Investment Strategy*, Journal of Financial Service Professionals, Emerald Publishing.
- Bell, W. (1997), *Foundations of Futures Studies*, Transactions Publishers, New Brunswick, New Jersey.
- Belniak, S. (2001), *Rozwój rynku nieruchomości w Polsce na tle krajów wysoko rozwiniętych*, AE w Krakowie, Kraków.
- Belongia, M.T. and Garfinkel, M.R. (1992), *The business cycle: theories and evidence*, Kluwer Academic Publishers Group.
- Benjamin J.D., Jud G.D. and Sirmans, G.S. (2000), *What do we know about real estate brokerage*, Journal of Real Estate Research, Vo. 20, No. 1/2.
- Bennis, W. and Nanus, B. (1997), *Leaders: Strategies for Taking Charge*, HarperCollins, New York, p 82.

- Berger, G. (1957), *Social Science and Forecasting*, quoted in: Cournand, A., (1973) *Shaping the future: Gaston Berger and the concept of prospective*, London: Gordon and Breach.
- Beynon-Davies, P. (2002), *Information Systems: An Introduction to Informatics in Organisations*, Palgrave, Basingstoke.
- Bhattacharya, H. (2008), in Given, L.M., et al. (2008), *The Sage Encyclopedia of Qualitative Research Methods*, Volume 1&2, Sage Publications.
- Bhattacharya, H. (2008), *Interpretative study*, in Given, L.M., et al. (2008), *The Sage Encyclopedia of Qualitative Research Methods*, Vol. 1&2, Sage Publications, pp. 464- 467.
- Bielecka, A. (2011), *Statystyka dla menedżerów: teoria i praktyka*, Wolters Kluwer Publisher, Warszawa.
- Bishop, P., Hines, A., and Collins, T. (2007), *The current state of scenario development: an overview of techniques*, *Foresight*, Vol. 9 Iss: 1, pp. 5 –25.
- Blatter, J.K. (2008), *Case study*, in Given, L.M. (ed.), *The Sage Encyclopedia of Qualitative Research Methods*, Volume 1, Sage Publications, pp. 68-71.
- BOMI Institute (2002), *Facilities Check List Practical, step-by-step guides for the busy FM*, [Online],[Accessed on July 2nd 2012].
Available from World Wide Web:
www.fmlink.com/article.cgi?type=How%20To&title=Facilities%20Management%20Defined&pub=BOMI%20International&id=40883&mode=source.
- Bordum, A. (2010), *The strategic balance in a change management perspective*, *Society and Business Review*, Vol. 5 Iss: 3, pp.245 - 258.

- Borodako, K. (2009), *Foresight w zarządzaniu strategicznym*, C. H. Beck Publishing.
- Bowonder, B. and Miyake, T. (1993), *Technology foresight in Japan*, *Futures*, Vol. 25 No. 7, pp. 757-77.
- Bradfield, R. and Wright, G. (2005), *The origins and evolution of scenario techniques in long range business planning*, *Futures Journal*, Vol. 5.
- Brooks Ch. and Tsolacos S., (2010), *Real Estate Modelling and Forecasting*, Cambridge University Press.
- Brundtland Commission (1987), *Our Common Future*, Oxford University Press.
- Bryman, A. (1988), *Quantity and Quality in Social Research*, Hyman, London.
- Bryx, M. (2006), *Rynek nieruchomości - system i funkcjonowanie*, Poltext.
- Bryx, M. (2008), *Real Estate Market* in: Bryx, M. (Editor), *Real Estate Management*, Construction Managers' Library, Warsaw.
- Bryx, M., Brodowicz D., (2008), Chapter 9: Rynek Nieruchomości in Bryx M. (Editor), *Zarządzanie nieruchomościami*, Leonardo da Vinci, pp. 139-155.
- Bryx, M. (Editor), (2009), *Podstawy Zarządzania Nieruchomościami*, *Biblioteka Menedżerów Budowlanych*, Poltext, pp. 143-154.
- Burrell, G. and Morgan, G. (1979), *Sociological Paradigms and Organizational Analysis: Elements of the Sociology of Corporate Life*, Heinemann.
- Campbell, A. A. and Katona, G. (1953), *The sample survey: A technique for social science research*, quoted in L. Festinger & D. Katz (Editors.), (2011), *Research methods in the behavioural sciences*, 4th edition, New York: Dryden Press, pp. 14-55.

- Chambers, L. and Taylor, M.A.P. (1999), *Strategic planning: processes, tools and outcomes*, Ashgate Publications.
- Chermack, T. (2003), *A methodology for assessing performance-based scenario planning*, The Journal of Leadership and Organisational Studies.
- Chermack, T. (2003a), *Studying scenario planning: Theory, research suggestions, and hypotheses*, Technological Forecasting & Social Change Journal.
- Choo, C.W. (1995), *Information Management for the Intelligent Organisation: the Art of Scanning the Environment*, American Society for Information Science, Medford, NJ.
- Coates, J.F. (1985), *Foresight in federal government policymaking*, Futures Research Quarterly, Vol. 1, Summer, pp. 29-53.
- Coates, J. F. (1996), *An overview of futures methods*, in Slaughter, R. (1996), *The Knowledge Base of Futures Studies*, Vol. 1, Foundation DDM Media Group, Victoria, Australia.
- Conrow, E. (2004), *Effective Risk Management: Some Keys to Success*, 2nd Edition, American Institute of Aeronautics and Astronautics, Inc., Reston, Virginia
- Cooke, H. and Keeping, M. (2011), *Corporate Real Estate Management: Strategy and Implementation*, Journal of Property Investment & Finance, Vol. 29, Iss: 3, pp.331 - 332.
- Cooley, F. (1995), *Frontiers of business cycle research*, Princeton University Press.
- Cornish, E. (2004), *Futuring, The Exploration of the Future*, WFS, Bethesda, USA.
- Cortesi, G.R. (1999), *Mastering real estate principles*, Real Estate Education.

- Crabtree, B.F. and Miller, W.L. (1999), *Doing Qualitative Research*, 2nd Edition, Sage Publications, Thousand Oaks, California.
- Creswell, J. (1994), *Research Design: Qualitative and Quantitative Approaches*, Sage Publications, Thousand Oaks, California.
- Creswell, J. (2007), *Qualitative inquiry and research design: Choosing among the five approaches*, 2nd Edition, Sage, Thousand Oaks, California.
- Crothers, J.H. (1981), *On the graphical presentation of quantitative data*, Field Studies 5, pp. 487- 511.
- Crotty, M. (1998), *The foundations of social research: meaning and perspective in the research process*, Sage Publications.
- Cuhls, K. (2003), *From forecasting to foresight processes: new participative foresight activities in Germany*, Journal of Forecasting, Vol. 22, pp. 93-111.
- Curnow, B. and Reuvid, J. (2003), *The International Guide to Management Consultancy: The Evolution, Practice and Structure of Management Consultancy Worldwide*, Kogan.
- Czaplicka-Kolarz, K., Stańczyk, K., and Kapusta, K. (2009), *Technology foresight for a vision of energy sector development in Poland till 2030. Delphi survey as an element of technology foresighting*, Technological Forecasting and Social Change Volume 76, Issue 3, March 2009, pp. 327-338.
- Dana, L.P. (2004), *Handbook of research on international entrepreneurship*, Edward Elgar Publishing Limited.
- Das, B., and Pani, A.K. (2005), *Real Estate Market: New Economy New Business*, Excel Books.

- Dator, J. (1979), *The futures of cultures and cultures of the future*, in Marsella, T., Ciborowski, T. and Tharp, R. (Editors), *Perspectives on Cross Cultural Psychology*, Academic Press, New York, NY.
- Davenport, T.H., Leibold, M., and Voelpel, S. (2006), *Strategic Management in the Innovation Economy, Strategy Approaches and Tools for Dynamic Innovation Capabilities*, Wiley & Sons.
- David, F.R., (2001), *Strategic management: concepts*, Upper Saddle River, NJ: Prentice Hall.
- David, M., and Sutton, C.D. (2004), *Social Research, the basics*, Sage Publications.
- de Jouvenal, B. (1967), *The Art of Conjecture*, Weidenfeldt and Nicholson, London.
- Dearing, A. (1999), *Have we the foresight for sustainable development?*, Foresight, Vol. 1 Iss: 2, pp. 131 – 142.
- Demeny, P. and McNicoll, G. (2006), *The political economy of global population change, 1950-2050*, Population Council.
- Denscombe, M. (2007), *The good research guide: for small-scale social research projects*, Third Edition, Open University Press.
- Denzin, N.K., and Lincoln Y.S. (2005), *Handbook of qualitative research*, SAGE Publications.
- DeWalt, K.M., DeWalt, B.R., (2011), *Participant Observation: A Guide for Fieldworkers*, Second Edition, AltaMira Press.
- DiPasquale, D., and Wheaton, W. (1996), *Urban Economics and Real Estate Market*, Prentice Hall.

- Downs, A. (2006), *Niagara of Capital: How Global Capital Has Transformed Housing and Real Estate Markets*, ULI, Washington.
- Downs, A. (2009), *Real estate and the financial crisis*, ULI, Washington.
- Drucker, P.F. (1993), *Post-Capitalist Society*, Butterworth-Heinemann, Oxford.
- Drucker, P.F. (2001), *Management Challenges for the 21st Century*, Harper Business, First edition.
- Drucker, P.F. (2007), *The essential Drucker: selections from the management works of Peter F. Drucker*, Oxford ; Burlington : Butterworth-Heinemann.
- Duczkowska-Piasecka, M. (2009), *Polityka Unii Europejskiej wobec przedsiębiorstw*, Chapter 5 in *Unia Europejska: organizacja, funkcjonowanie, korzyści*, Duczkowska- Piasecka, M. (Editor), ALMAMER Wyższa Szkoła Ekonomiczna.
- Dyllick, T. and Hockerts, K. (2002), *Beyond the Business Case Sustainability Business Strategy and the Environment* ,Vol. 11, 130-141.
- Easterby-Smith, M., Thorpe, R. and Lowe A. (1991), *Meaning in Management Research: An Introduction*, London, Sage.
- Edwards, A. (2005), *The Sustainability Revolution: Portrait of a Paradigm Shift*, New Society Publisher.
- Erdmann, L. and Behrendt, S. (2006), *From technology-driven roadmapping towards sustainability-oriented road mapping: development and application of an integrated methods*, paper presented at the Second Seville Seminar on Future-oriented Technology Analysis: Impact of FTA Approaches on Policy and Decision-making, IPTS, Seville.

- Evans, A. W. (2004), *Economics, real estate, and the supply of land*, Oxford: Blackwell Publishing.
- Fahey, L. and Randall, M. (1988), *Learning From the Future*, Wiley and Sons.
- Fildes, R., and Stekler, H. (2002), *The state of macroeconomic forecasting*, Journal of macroeconomics, Volume 24, Issue 4, pp. 435-468.
- Finnair (2008), Future Scenarios, [Online], [Accessed on 14th December 2011]. Available from World Wide Web: www.finnairgroup.com/linked/en/konserni/Futuriikki_EN_LR.pdf
- Fink A., Marr B., Siebe A., Kuhle J-P. (2005), *Management Decision*, Vol. 43, No. 3, pp. 360- 380.
- Fink, A. (2002), *The survey kit*, (2nd edition.), Thousand Oaks, CA: Sage.
- Flick, U. (2006), *An Introduction to Qualitative Research*, (3rd edition), London: Sage Publications.
- Floyd, Ch., and Allen, M.T.(2002), *Real Estate Principles*, Dearborn Real Estate Education, Fifth edition, Chicago.
- FOREN (2001), *A Practical Guide to Regional Foresight*, Report Eur20128En. European Commission, Brussels.
- Franklin, M. (2006), *Performance Gap Analysis: Tips, Tools, and Intelligence for Trainers*, ASTD Press.
- Fraser, J., and Simkins, B.J. (2010), *Enterprise Risk Management: Today's Leading Research and Best Practices for Tomorrow's Executives*, John Wiley & So

- Frej, A.B., and Peiser R.B. (2003), *Professional real estate development: the ULI guide to the business*, Urban Land Institute.
- Friedman, M. (1953), *Essays in Positive Economics*, The University of Chicago Press.
- Friedman, M. (1970), The Social Responsibility of Business is to Increase Its Profits, The New York Times Magazine, Issue from September 13,[Online],[Accessed on 2nd November 2008]. Available from World Wide Web: www.colorado.edu/studentgroups/libertarians/issues/friedman-soc-respbusiness.html.
- Floyd, Ch. F. and Allen, M.T., (2002), *Real Estate Principles*, Dearborn Real Estate Education, Fifth edition.
- Fuller, T. and Tilley, F. (2005), *Corporate ethical futures: responsibility for the shadow on the future of today's ethical corporations*, Futures, Vol. 37, pp. 183-98.
- Fuller, T. and Warren, L. (2006), *Entrepreneurship as foresight: a complex social network perspective on organisational foresight*, Futures, Vol. 38 No. 8, pp. 956-71.
- Galaty, F.W., Allaway, W.J., Kyle, R.C. (2003), *Modern Real Estate Practice*, Dearborn Real Estate Education, Inc.
- Gavigan, J.P, Scapolo, F. (1999), *A comparison of national foresight exercises*, Foresight, Vol. 1 Iss: 6, pp. 495 – 517.
- Geltner, D.M., Norman G. Miller, N.G., Jim Clayton, J., and Piet Eichholtz, P. (2006), *Commercial Real Estate: Analysis and Investment*, South-Western Educational Publishing; Second edition.
- Gerson, K. and Horowitz, R. (2002), *Observation and Interviewing: Options and*

Choices In Qualitative Research, in May, T. (editor) (2002), *Qualitative Research in Action*, Sage: London, pp. 199-224.

Glenn, J.C. (Editor), (1999), *Futures Research Methodology*, The Millennium Project, Version 1.0, [Online], [Accessed on 14th March 2011], Available from World Wide Web: www.millennium-project.org.

Glenn, J.C and Gordon, T.J (2002), *Creating a better world: 15 global challenges*, foresight, Vol. 4 Iss: 5 pp. 15 – 37

Glenn, J.C. and Gordon, T.J. (2003), *Futures Research Methodology: Version 2.0*, American Council for the United Nations University, Washington, DC.

Glenn, J. C., Gordon, T.J., Florescu, E. (2009), *Futures research methodology—Version 3.0.*, Washington, DC: Millennium Project.

Godet, M. (1987), *Scenarios and strategic management*, Butterworths.

Godet, M. (1991), *From Anticipation to Action*, UNESCO, Paris.

Godet, M. (2001), *Creating Futures: Scenario Planning as a strategic management tool*, Economica, London.

Gray, D.E. (2009), *Doing research in the real world*, Sage Publications Ltd.

Greenley, G. (1986), *Does Strategic Planning improve Company Performance?*, Long Range Planning 19, No. 2.

Guba, E.G, and Lincoln, Y.S. (1994), *Competing paradigms in qualitative research*, in Denzin, N.K., and Lincoln Y.S. (2005), *Handbook of qualitative research*, Sage Publications.

- Gubrium J.F., Holstein J.A., (1997), *The New Language of Qualitative Method*, Oxford University Press.
- Hamel, G., and Prahalad, C. K. (1994), *Competing for the Future*, Harvard Business School Press, Boston.
- Hamilton, M. B. (2003). *Online survey response rates and times: background and guidance for industry*, Tercent, Inc.
- Harrison, D., and Seiler, M. (2011), *The political economy of green office buildings*, Journal of Property Investment & Finance, Vol. 29 Iss: 4/5, pp.551 - 565.
- Hart, Ch. (2001), *Doing a literature review: releasing the social science research imagination*, Sage Publications.
- Hart, S.L. (2007), *Beyond Greening: Strategies for a Sustainable World*, Harvard Business Review on *Green Business Strategies*, Harvard Business School Press.
- Heldman, K. (2009), *PMP: project management professional exam study guide*, Wiley Publishing, Inc.
- Hewlett, C.A, and Kaufmann, G. (2008), *Strategy for Real Estate Companies*, Urban Land Institute, Washington.
- Henry, A. (2008), *Understanding strategic management*, Oxford University Press, Oxford; New York.
- Hideg, E. (2007), *Theory and practice in the field of foresight*, Foresight, Vol. 9, Iss: 6, pp. 36 – 46.
- Hill, Ch. W., and Jones, G.R. (2007), *Strategic management: an integrated approach*, Houghton Mifflin Company.

- Hines, A. (2006), *Strategic foresight: the state of the art*, The Futurist, Vol. 40, No. 5, pp. 18-21.
- Hitt, M.A., Freeman, R.E., and Harrison, J.S. (2005), *The Blackwell handbook of strategic management*, Blackwell.
- Hitt, M.A., Ireland, D., and Hoskisson, R.E. (2007), *Strategic Management: Competitiveness and Globalization (Concepts and Cases)*, Thomson South-Western.
- Hopkin, P. (2010), *Fundamentals of risk management: understanding, evaluating, and implementing effective risk management*, The Institute of Risk Management, U.K.
- Horrigan, B. (2010), *Corporate Social Responsibility in the 21st Century: Debates, Models and Practicess Across Government, Law and Business*, Edward Elgar Publishing Limited.
- Horton, A. (1999), *A simple guide to successful foresight*, Foresight, Vol. 1, Iss: 1, pp.5 – 9.
- Howard, A. (2010), *A new global ethic*, Journal of Management Development, Vol. 29 Iss: 5, pp.506 – 517.
- Huberman, A.M., and Miles, M.B. (1994), *Qualitative data analysis: an expanded sourcebook*, Sage Publications.
- Huberman, A. M., and Miles M. B. (2002), *The qualitative researcher's companion*, Sage Publications.
- Hunger, J.D., and Wheelen, T.L. (2003), *Essentials of strategic management*, Prentice Hall.

- Huntington, S.P. (1997), *The clash of civilizations and the remaking of world order*, Simon & Schuster.
- Inayatullah, S. (1998), *Causal layered analysis: Post-structuralism as method*, *Futures*, Vol. 30, Issue 8, October, 1998: 815-29.
- Inayatullah, S. (2004), *The causal layered analysis (CLA) reader: theory and case studies of an integrative and transformative methodology*, Tamkang University.
- Inayatullah, S. (2005), *Questioning the Future: Methods and Tools for Organizational and Societal Transformation*, Tamkang University Press.
- Irvine, J., and Martin, B. (1984), *Foresight in Science*, Pinter, London.
- Jackson, S.E, DeNisi, A., and Hitt, M.A. (2003), *Managing Knowledge for Sustained Competitive Advantage: Designing Strategies for Effective Human Resource Management*, John Wiley & Sons.
- Jacobus, Ch.J. (2009), *Real Estate: An Introduction to the Profession*, Cengage Learning.
- Jeffs, Ch. (2008), *Strategic Management*, SAGE Publications Ltd.
- Jemala, M. (2010), *Evolution of foresight in the global historical context*, Vol. 12, No. 4, *Foresight*, pp. 65-81.
- Jick, T.D. (1979), *Mixing Qualitative and Quantitative Methods: Triangulation in Action*, *Administrative Science Quarterly*, Vol. 24, No. 4, *Qualitative Methodology* pp. 602-611.
- Johnson, G., Scholes, K., and Whittington, R. (2008), *Exploring corporate strategy*, Prentice Hall, Financial Times.

- Johnson, P. and Harris, D. (2002), *Qualitative and quantitative issues in research design*, in Partington, D. (Ed.), *Essential Skills for Management Research*, Sage, London, pp. 99-116.
- Jungk, R., and Müller, N. (1987), *Future Workshops: How to create desirable futures*, Institute of Social Inventions, London, UK.
- Kahn, H. and Wiener, A.J. (1961), *The Year 2000*, Macmillan, pp. 51-55.
- Kahn, H. and Weiner, A.J. (1967), *The year 2000: a framework for speculation on the next thirty-three years*, Macmillan.
- Kay, J. (1993), *Foundations of Corporate Success*, Oxford University Press, Oxford.
- Kazdin, A. (1982), *Single- Case Research Designs- Methods for Clinical and Applied Settings*, Oxford University Press.
- Keenan, M., and Popper, R. (2008), *Comparing foresight “style” in six world regions*, *Foresight*, Vol. 10, Iss: 6, pp.16 – 38.
- Keynes, J. M. (1964). *The General Theory Of Employment, Interest, and Money*, New York: Harcourt.
- Kirk, R.E. (2008), *Statistics: An Introduction*, Thomson Learning Inc.
- Knight, A., and Ruddock L. (2008), *Advanced Research Methods in the Built Environment*, Wiley- Blackwell.
- Knoop T.A (2009), *Recessions and Depressions: Understanding Business Cycles: Understanding Business Cycles*, Greenwood Publishing Group.
- Kothari, C.R. (2004), *Research methodology, Methods and Techniques*, Second Edition, New Age International Publishers.

- Kothari, C.R. (2006), *Research Methodology: Methods and Techniques*, Second Edition, New Age International Publishers.
- Kotler, P. (1997), *Marketing Management*, 9th Edition, Prentice Hall, New York.
- Kotler, P., and Lee, N. (2005), *Corporate Social Responsibility, Doing the Most Good for Your Company and Your Case*, John Wiley & Sons.
- Kunc, M., and Bandahari, R. (2011), *Strategic development processes during economic and financial crisis*, *Management Decision*, Vol. 49, Iss: 8, pp.1343 – 1353.
- Kurz, W.A, and Beukema, S.J. (editors), (2000), *TELSA: the Tool for Exploratory Landscape Scenario Analyses*, *Computers and Electronics in Agriculture*.
- Lancaster, G. (2005), *Research methods in management: a concise introduction to research in management and business consultancy*, Elsevier/Butterworth Heinemann.
- Landeta, J. (2006), *Current validity of the Delphi method in social sciences*, *Technological Forecasting and Social Change*, Vol. 73, p. 467.
- Langley, A. (1999), *Strategies for Theorizing from Process Data*, *Academy of Management Review*, 24(4): 691-710.
- LaPier, T. (1998), *Competition, growth strategies and the globalization of services: real estate advisory services in Japan, Europe and the United States*, London New York, Routledge.
- Larsen, J.E. (2003), *Real estate principles and practices*, John Wiley and Sons.
- Lassarre, P. (2007), *Global Strategic Management*, Second edition, Palgrave.
- Leinberger, Ch. B., (1993), *Strategy for real estate companies: marketing, finance,*

organization, Urban Land Institute.

Leishman, Ch. (2003), *Real estate market research and analysis*, Palgrave Macmillan.

Lenz, R.T. and Engledow, J.L. (1986), *Environmental analysis and strategic decision making: a field study of selected 'leading-edge' corporations*, Strategic Management Journal, Vol. 7 No. 1, pp. 69-89.

Littlejohn, S. (2000), *Theories of Human Communication*, Belmont, CA: Wadsworth.

Lockwood, Ch. (2007), *Building the Green Way*, in Harvard Business Review on *Green Business Strategies*, Harvard Business School Press.

Lockwood, Ch. (2009), *Sustainability Critical when Times are Tough*, [Online], [Accessed on 15th April 2010]. Available from World Wide Web: http://www.americanbanker.com/issues/174_1/-370065-1.html.

Lockwood, Ch. (2009a), *The Green Quotient, Insight from leading experts on sustainability*, ULI, Washington

Longenecker, C.O., and Rieman, M.L. (2007), *Making organizational change stick: leadership reality checks*, Development and Learning in Organizations, Vol. 21, Iss: 5, pp.7 - 10.

Loveridge, D. (2005), *Inclusive foresight*, Foresight, Vol. 7 Iss: 3, pp. 31-47.

Lynch, R. (2009), *Strategic management*, 5th Edition, Prentice Hall.

Maczynska, E. (2008), Chapter 10: Wartość nieruchomości, in Bryx, M. (edit.), (2008), *Zarządzanie nieruchomościami*, Leonardo da Vinci project

Madison, D.S. (2005), *Critical ethnography: Methods, ethics, and performance*, Thousand Oaks, CA: Sage.

- Major, E., Asch, D. and Cordey-Hayes, M. (2001), *Foresight as a core competence*, Futures, Vol. 33 No. 2, pp. 91-107.
- Marczyk, G., Demetto, D., and Festinger, D. (2005), *Essentials of Research Design and Methodology*, John Wiley & Sons.
- Marrien, M., and Jennings, L., edit. (1989), *Future Survey Annual 1988-89*, World Future Society.
- Martin, B. and Johnston, R. (1999), *Technology foresight for wiring up the national innovation system*, Technological Forecasting and Social Change, Vol. 60, No.1, pp. 37-54.
- Martin, B., and Irvine, J. (1989), *Research Foresight: Priority-Setting in Science*, London, Pinter Publishers.
- Masini, E. (1993), *Why Futures Studies?*, London: Grey Seal.
- Maustakas, C. (1994), *Phenomenological research methods*, Thousand Oaks, Sage Publications.
- Maxwell, J.A. (2005), *Qualitative research design: an interactive approach*, Sage Publications.
- McDonald, J.F. and McMillen, M.P. (2007), *Urban economics and real estate: theory and policy*, Blackwell Publishing.
- McGeehin, P. (2002), *UK Technology Foresight – sensors strategy for 2015*, Sensor Review, Vol. 22 Iss: 4, pp.303 - 311.
- McMahan, J. (2006), *The handbook of commercial real estate investing*, New York, McGraw-Hill.

- McNeil, A., and Frey, R. (2005), *Quantitative Risk Management: Concepts, Techniques and Tools*, Princeton University Press, USA.
- Meadows D., Randers J., Meadows D., Behrens III W.W. (1972), *Limits to growth*, Universe Books.
- Meadows D., Randers J., Meadows D. (2005), *Limits to growth, The 30-year update*, Earthscan.
- Melnikov, A. (2004), *Risk analysis in finance and insurance*, Chapman & Hall.
- Merriam, S.B. (2009), *Qualitative research: a guide to design and implementation*, John Wiley and Sons.
- Mertens, D.M. (1998), *Research methods in education and psychology: Integrating diversity with quantitative and qualitative approaches*, Thousand Oaks, CA: Sage.
- Miles, M.P., Munilla, L.S., and Darroch, J. (2006), *The role of strategic conversations in the formation of corporate social responsibility strategy*, Journal of Business Ethics, pp. 195-205.
- Miller, P. (2008), Objectivity, in Given, L.M., (edit.), *The Sage Encyclopedia of Qualitative Research Methods*, Volume 2, Sage Publications, pp. 572-573.
- Mintzberg, H. (1994), *The rise and fall of strategic planning*, Harvard Business Review, November- December, pp. 107-114.
- Mintzberg, H., Lample, J., Quinn, J.B., and Goshal, S. (2003), *The strategy process: concepts, contexts, cases*, (4th edition), Pearson Education Limited.
- Morden, T. (2007), *Principles of strategic management*, Ashgate.
- Moyer K. (1996), *Scenario planning at British Airways-A case study*, Long Range Planning, Volume 29, Issue 2, pp. 172-181.

- Muhlebach, R.F., and Alexander, A. (1997), *Business strategies for real estate management companies*, Institute of Real Estate Management.
- Muller, K. (2008), *Investing in Private Equity Partnerships: The Role of Monitoring and Reporting*, Gabler Edition Wissenschaft.
- Mullineux A.W. (2011), *Business Cycles and Financial Crises*, Mullineux and Ventus Publishing.
- Nilsson, F., Rapp, B. (2005), *Understanding Competitive Advantage: The Importance of Strategic Congruence and Integrated Control*, Springer.
- Neumann, W.L. (2000), *Social research methods: qualitative and quantitative approaches*, (4th ed.), Boston: Allyn & Bacon.
- Nugroho, Y. and Saritas, O. (2009), *Incorporating network perspectives in foresight: a methodological proposal*, Foresight, Vol. 11 Iss: 6, pp. 21 – 41.
- O'Mahoney, J. (2010), *Management consultancy*, Oxford University Press.
- O'Leary, Z. (2007), *The essential guide to doing research*, SAGE Publications.
- Ogilvy, J.A. (2002), *Creating better futures, Scenario planning as a tool for a better tomorrow*, Oxford University Press, pp. 175-191.
- Ohmae, K. (1982), *The Mind of the Strategist*, Penguin.
- Olivier, P. (2004), *Writing Your Thesis*, Sage Publications.
- Onwumere, R., Stewart, R., and Yu, S. (2011), *A Review Of Business Cycle Theory and Forecast of The Current Business Cycle*, Journal of Business & Economics Research - February, 2011 Vol. 9, No. 2, pp. 49-59.
- Orlikowski, W.J. and Baroudi, J.J. (1991), *Studying information technology in*

organizations: research approaches and assumptions, Information Systems Research, Vol. 2, No. 1, pp. 1-28.

Padgett, D. (1998), *Qualitative methods in social work research: challenges and rewards*, Sage Publications.

Pallant, J. (2007), *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using the SPSS*, 3rd Edition Allen & Unwin.

Passemard, D., and Kleiner, B.H., (2000), *Competitive advantage in global industries*, Management Research News, Vol. 23 Iss: 7/8, pp.111 – 117.

Patton, M.Q. (2002), *Qualitative research and evaluation methods*, (3rd ed.), Sage Publications.

Pearce, J.A., and Robinson, R.B. (2005), *Strategic management: formulation, implementation, and control*, McGraw-Hill.

Perry, C. (2004), *Realism also rules OK: scientific paradigms and case research in marketing*, in Buber, R., Gadber, J. and Richards, L. (Editors), *Applying Qualitative Methods to Marketing Management Research*, Palgrave Macmillan, New York, pp. 46-60.

Pettigrew, A. and Whipp, R. (1991), *Managing Change for Competitive Success*, Basil Blackwell, Oxford.

Pollard, D., and Hotho, S. (2006), *Crises, scenarios and the strategic management process*, *Management Decision*, Vol. 44 Iss: 6, pp.721 - 736.

Popper, R. (2008), *Foresight methodology*, in Georghiou, L., Cassingena, J., Keenan, M., Miles, I. and Popper, R. (Eds), *The Handbook of Technology Foresight*, Edward Elgar, Aldershot.

Popper, R. (2008a), *How are foresight methods selected?*, *Foresight*, Vol. 10, Iss: 6,

pp. 62 – 89.

Porter, M. (1985), *Competitive advantage: creating and sustaining superior performance*, New York, N.Y.: The Free Press.

Porter, M.E. (1998), *The Competitive Advantage of Nations*, The Free Press, New York, NY.

Porter, M. (2005), *On Competition, Updated and Expanded Edition*, Harvard Business Review Book.

Pułaska-Turyna, B. (2011), *Statystyka dla ekonomistów*, Difin, Warszawa.

Punch, K. (1998), *Introduction to Social Research: Quantitative and Qualitative Approaches*, London, Sage.

Rand Corporation (2012), [Online], [Accessed on 14th April 2012]. Available from World Wide Web:
http://www.rand.org/content/dam/rand/pubs/corporate_pubs/2012/RAND_CP559-2012.pdf

Ransom, G., and Knighton, T. (1996), *Stepping up to the challenge of change*, *Managing Service Quality*, Vol. 6 Iss: 5, pp.10 - 16.

Ratcliffe, J. (2000), *Scenario building: a suitable method for strategic property planning?*, *Property Management*, Vol. 18 Iss: 2, pp.127 - 144.

Ratcliffe, J. (2001), *Imagineering global real estate: a property foresight exercise*, *Foresight*, Vol. 3 Iss: 5, pp.453 - 465.

Ratcliffe, J. (2002), *Scenario planning: strategic interviews and conversations*, *Foresight*, Vol. 4 Iss: 1, pp.19 - 30.

- Ratcliffe J. and L. Surr (2003), *Futures thinking for the built and human environment: The Prospective Process Through Scenario Thinking for the Built and Human Environment*, [Online], [Accessed on 16th November 2010]. Available from World Wide Web: www.dit.ie/DIT/built/futuresacademy/publications.
- Ratcliffe, J. (2006), Challenges for Corporate Foresight: towards Strategic Prospective through Scenario Thinking, *Foresight*, Vol. 8 Iss: 1, pp.39 - 54.
- Ratcliffe J. S., and Saurin, R., (2007), *Workplace Futures: A Prospective Through Scenarios*, The Futures Academy, Johnson Controls.
- Ratcliffe, J. (2007), *RICS Foundation Proposal*, The Futures Academy, DIT, Dublin.
- Ratcliffe J., (2008), *Built environment futures research: The need for foresight and scenario learning*, p. 218 publicised in Knight A., Ruddock, L., (Editors) *Advanced Research Methods in the Built Environment*, Wiley- Blackwell.
- Ratcliffe J. S., and Saurin, R., (2008), *Towards Tomorrow's Sustainable Workplace: Imagineering a Sustainable Workplace Future*, The Futures Academy, Johnson Controls.
- Ratcliffe J. S., and Saurin, R., (2009), *The Smart Workplace in 2030*, The Futures Academy, Johnson Controls.
- Ratcliffe, J. (2009), *The Necessary Transformation*, Presentation to the Urban Land Institute, Paris.
- Ratcliffe, J., Brodowicz, D., and O'Brien, G. (2009), *Built Environment Foresight 2030: Sustainable Development Imperative*, The Futures Academy, DIT.
- Richardson, L., and Pierr, E.A. (2005), *Writing: A method of inquiry*, in Denzin N.K. and Lincoln Y.S. (Editors), *The Sage handbook of qualitative research*, 3rd edition, Thousand Oaks, Sage, pp. 959- 978.

- RICS (2004), *Sustainability and the built environment - an agenda for action*, [Online], [Accessed on 4th February 2011], Available from World Wide Web: <http://www.rics-foundation.org/news/viewLatestNews.aspx?nid=105>
- RICS (2013), [Online], [Accessed on 10 march 2013], Available from World Wide Web: www.rics.org/pl/about-rics/what-we-do/setting-standards/rics-red-book---global-edition/
- Ringland, G. (2008), *Innovation: scenarios of alternative futures can discover new opportunities for creativity*, *Strategy & Leadership*, Vol. 36, Iss: 5, pp.22 - 27.
- Robson, C. (2002), *Real World Research: A Resource for Social Scientists and Practitioner-Researchers*, 2nd ed., Blackwell, Oxford.
- Robson, C. (2005), *Real World Research*, Blackwell Publishing.
- Rohrbeck, R. (2010), *Corporate Foresight: Towards a Maturity Model for the Future Orientation of a Firm*, Springer Series: Contributions to Management Science, Heidelberg and New York.
- Rohrbeck, R. and Gemünden, H.G. (2011), *Corporate Foresight: Its Three Roles in Enhancing the Innovation Capacity of a Firm Technological Forecasting and Social Change*, pp. 231-243.
- Royal Dutch Shell (2008), *Energy Scenarios to 2050*, [Online], [Accessed on 2nd February 2012]. Available from World Wide Web: <http://www.shell.com/global/future-energy/scenarios.html>
- Rowe, A., Mason, R.O., and Dickel K.E. (1994), *Strategic Management, A methodological approach*, Sage Publications.
- Sadler, P. (1998), *Management Consultancy a handbook of best practice*, Kogan Page.

- Saritas, O. (2006), *Systems thinking for foresight, thesis*, PREST, University of Manchester, Manchester, p. 11.
- Schacht, R., (editor). (1994), *Nietzsche, genealogy, morality: essays on Nietzsche's Genealogy of morals*, University of California Press.
- Schoemaker, P., and van der Heijden, C. (1992), *Integrating scenarios into strategic planning at Royal Dutch/Shell*, *Strategy and Leadership*, Vol. 20, Iss: 3, pp. 41–46.
- Schoemaker, P. (1995), *Scenario Planning: A tool for strategic thinking*, *Sloan Management Review/ Winter 1995*.
- Schumpeter, J. (1927), *The Explanation of the Business Cycle*. *Economica*.
- Schumpeter, J. (1939), *Business Cycles*, New York.
- Schwandt, T. A. (2000), *Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics, and social constructionism*, in Denzin, N.K. and Lincoln, Y.S. (Editors), *Handbook of qualitative research*, 2nd edition, Thousand Oaks, Sage, pp. 189–213.
- Schwartz, J.O (2009), *The symbolism of foresight process in the organisation in Handbook of Research on Strategy and Foresight*, Costanzo L.A et al. 2009, Edward Elgar Publishing Limited.
- Schwartz, P. (1995), *Scenarios: the future of the future*, *Wired*, October Issue.
- Schwartz, P. (1996), *The Art of the Long View: Planning for the Future in an Uncertain World*, First Edition, Doubleday, New York, NY.
- Schwarz, B., and Svedin, U. (1982), *Methods in Futures Studies, Problems and Applications*, A Westview Replica Edition.

- Schwarz, J.O. (2005), *Pitfalls in implementing a strategic early warning system*, Foresight, Vol. 7 No. 4, pp. 22-30.
- Schwarz, J.O. (2008), *Assessing the future of Futures Studies in management*, Futures, Vol. 40, No. 3, pp. 237- 246.
- Scott, J. (2006), *Documentary Research*, London, Sage Publications.
- Sedmak, M., and Longhurst, P. (2010), *Methodological choices in enterprise systems research*, Business Process Management Journal, Vol. 16, Iss: 1, pp.76 - 92.
- Sell, C. (2007), *Defining the Future: What does sustainability mean to the construction industry?* [Online], [Accessed on 24 May 2010], Available from World Wide Web: www.arabianbusiness.com.
- Selltiz, C., Jahoda, M., Deutsch, M., and Cook, S.W. (1959), *Research Methods in Social Relations*, New York, Holt, Rinehart and Winston.
- Sherman, H. (1989), *Theories of Economic Crisis: Demand-Side, Supply-Side, and Profit Squeeze*, Science & Society.
- Silberman, M.L. (2003), *The Active Manager's Tool Kit*, McGraw- Hill Companies.
- Silverman, D. (1998), *Qualitative research: meanings or practices?*, Information Systems Journal, Vol. 8, No. 1, pp. 3-20.
- Silverman D. (2004), *Qualitative research, Theory, Method and Practice*, Sage Publications.
- Silverman, D., and Marvasti, A. (2008), *Doing Qualitative Research, Comprehensive Guide*, Sage Publications.

- Singh, Y.K. and Bajpai, R.B. (2007), *Research methodology data presentation*, A.P.H Publishing.
- Slaughter, R. (1995), *The Foresight Principle: Cultural Recovery in the 21st Century*, Praeger, Westport.
- Slaughter, R. (1996), *The Knowledge Base of Futures Studies*, DDM Media Group, Victoria, Australia.
- Slaughter, R. (1998), *Futures Studies as an Intellectual and Applied Discipline*, American Behavioural Science.
- Slaughter, R. (2001), *Knowledge creation, futures methodologies and the integral agenda*, Foresight, Vol. 3, Iss: 5, pp. 407 – 418.
- Slaughter, R. (2002), *From forecasting and scenarios to social construction: changing methodological paradigms in Futures Studies*, Foresight, Vol. 4, Iss: 3, pp. 26 – 31.
- Smith, A. and Graetz, F. (2011), *Philosophies of Organizational Change*, Edward Elgar Publishing Limited.
- Spiggle, S. (1994), *Analysis and Interpretation of Qualitative Data in Consumer Research*, Journal of Consumer Research, Vol.21, pp. 491-503.
- Stacey, R. (2003), *Strategic Management and Organizational Dynamics: The Challenge of Complexity*, Prentice-Hall, p. 727.
- Stake, R.E. (1995), *The Art of Case Study Research*, Sage Publications, Thousand Oaks, California.
- Strauss, A.L. (1987), *Qualitative Analysis for Social Scientists*, Cambridge University Press, Cambridge, MA.

- Stubbart, C. (1982), *Are environmental scanning units effective?*, Long Range Planning, Vol. 15, pp. 139-45.
- Suarez, J.L. (2009), *European real estate markets*, Palgrave Macmillan, New York.
- Sweeney, D.J., Anderson, D.R, Williams, T.A, Camm, J.D., Cochran, J.J, Fry, M.J., and Ohlmann J.W. (2013), *Quantitative Methods for Business*, South-Western, Cengage learning, Second edition.
- The Futures Academy (2004), *The Futures Academy Compendium*, [Online], [Accessed on 5 January 2010], Available from World Wide Web: <http://www.thefuturesacademy.ie/node/88>.
- The Futures Academy (2008), *Twice the Size? Imagineering the Future of Irish Gateways*, [Online], [Accessed on 16th March 2010], Available from World Wide Web: <http://www.thefuturesacademy.ie/node/63>.
- The Futures Academy and King Sturge (2001), *Global Real Estate Scenarios*, [Online], [Accessed on 15th June 2010]. Available from World Wide Web: www.thefuturesacademy.ie/node/90.
- The Futures Academy and King Sturge (2005), *European Real Estate Scenarios*, [Online], [Accessed on 15th June 2010]. Available from World Wide Web: <http://www.thefuturesacademy.ie/node/89>.
- Thompson, J., and Martin, F.M. (2005), *Strategic Management, Awareness and change*, (5th edition), South-Western, Cengage Learning.
- Tsoukas, H., and Sheppard, J. (2004), *Managing the Future: Foresight in the Knowledge Economy*, London: Blackwell.
- Tvede, L. (1997), *Business cycles: from John Law to the Internet crash*, Routledge.
- Tvede, L. (2001), *Business Cycles: history, theory and investment reality*, John Wiley

& Sons.

ULI (2008), *The City in 2050: Creating Blue Prints for Change*, [Online], [Accessed on 4th March 2013]. Available from World Wide Web: http://www.morpc.org/pdf/ULI_cityin2050.pdf

ULI and PWC, (2009), *Emerging Trends in Real Estate Asia Pacific 2009*, Washington.

ULI and PWC, (2010), *Emerging Trends in Real Estate Asia Pacific 2010*, Washington.

UN (2010), *World Population Prospects, the 2010 Revision*, [Online],[Accessed on July 2nd 2012]. Available from World Wide Web: <http://esa.un.org/unpd/wpp/index.html>

UN (2011), *UN Global Compact Brochure*, [Online], [Accessed on 8th May 2012]. Available from World Wide Web: http://www.unglobalcompact.org/docs/news_events/8.1/GC_brochure_FINAL.pdf

UNIDO (2005), *Technology Foresight Manual, Organisation and Methods Volume 1*, Vienna.

Van der Heijden, K. (1996), *Scenarios, the Art of Strategic Conversation*, Wiley, London.

Van der Heijden, K. (2005), *Scenarios: The Art of Strategic Conversation*, John Wiley and Sons.

Veblen, T. (1904), *The Theory of Business Enterprise*, New York: Charles Scribner's Sons.

Vester, F. (1999), *Die Kunst vernetzt zu denken. Ideen und Werkzeuge für einen neuen Umgang mit Komplexität. Der neue Bericht an den Club of Rome*, Deutscher Taschenbuch Verlag, München.

- Vinten, G. (2002), *The corporate governance lessons of Enron*, Corporate Governance, Vol. 2 Iss: 4, pp.4 - 9.
- Voros, J. (2001), *Reframing environmental scanning: an integral approach*, Foresight, Vol. 3, No. 6, pp. 533-52.
- Voros, J. (2003), *A generic foresight process framework*, Foresight, Vol. 5, Iss: 3, pp. 10 – 21.
- Voros, J. (2006), *Introducing a classification framework for prospective methods*, Foresight, Vol. 8, Iss: 2, pp. 43 – 56.
- Vose, D. (2006), *Risk analysis: a quantitative guide*, John Wiley & Sons.
- Walcott, H.F. (1990), *Writing up qualitative research*, Newbury Park, CA: Sage.
- Ward, J., Peppard, J. (2002), *The Strategic Framework. In Strategic Planning for information systems*, England: John Wiley & Sons.
- Waterman, R. (1987), *The Renewal Factor: How the Best Get and Keep the Competitive Edge*, Bantam.
- Weinberg, S.L. and Knapp Abramowitz, S. (2001), *Data analysis for the behavioural sciences using SPSS*, Cambridge University Press, UK.
- Wells, H.G., (1932), *Wanted- Professor of Foresight*, [Online],[Accessed on 4th April 2012]. Available from World Wide Web: <http://strategicforesight.tv/why-strategic-foresight>.
- Weingand, D.E. (1995), *Futures Research Methodologies: Linking Today's Decisions With Tomorrow's Possibilities*, presented at 61st IFLA General Conference, [Online], [Accessed on 4th April 2012]. Available from World Wide Web: <http://archive.ifla.org/IV/ifla61/61-weid.html>.

- Will, M. (2008), *Talking about the future within an SME?: Corporate foresight and the potential contributions to sustainable development*, Management of Environmental Quality: An International Journal, Vol. 19, Iss: 2, pp.234 – 242.
- Wilson, J.M, and Eilertsen, S. (2010), *How did strategic planning help during the economic crisis?*, Strategy & Leadership, Vol. 38, Iss: 2, pp.5 - 14.
- Wisker, G. (2001), *The Postgraduate Research Handbook*, Succeed with your MA, MPhil, EdD and PhD, Palgrave Study Guides.
- Wittmann, R., and Reuter, M.P., (2008), *Strategic Planning: How to Deliver Maximum Value Through Effective Business*, Kogan Page Limited.
- Wonglimpiyarat, J. (2006), *Technology foresight: creating the future of Thailand's industries*, Foresight, Vol. 8, Iss: 4, pp. 23 – 33.
- Zarnowitz, V. (1992), *Business Cycles: Theory, History, Indicators, and Forecasting*, The University of Chicago.
- Yin, R.K. (1994), *Case Study Research: Design and Methods*, 2nd ed., Sage, Thousand Oaks.
- Yuan, B., Hsieh, C. H. and Chang, C. C. (2010), *National technology foresight research: a literature review from 1984 to 2005*, International Journal of Foresight and Innovation Policy, Vol. 6, 1-3, pp. 5-35.

Not Dated References from the World Wide Web:

Arup (n.d.), [Online], [Accessed on 15 May 2009]. Available from World Wide Web:
<http://www.arup.com>

Colliers International (n.d.), [Online], [Accessed on 2nd February 2010]. Available
from World Wide Web: <http://www.colliers.com>

Cushman & Wakefield (n.d.), [Online], [Accessed on 2nd February 2010]. Available
from World Wide Web:
<http://www.cushwake.com/cwglobal/jsp/globalHomeSSO.jsp>

Hayward. P. (n.d.), *Comments on CLA*, Swinburne University, Melbourne, Australia,
[Online], [Accessed on 10th April 2011], Available from World Wide Web:
www.metafuture.org/Books/causal_layered_analysis_reader.html.

IVSC (n.d.), [Online], [Accessed on 24th November 2013]. Available from World Wide
Web: <http://www.ivsc.org>

JLL (n.d.), [Online], [Accessed on 12 July 2011]. Available from World Wide Web:
<http://www.joneslanglasalle.com/Pages/Home.aspx>

Oxford Dictionary (n.d.), [Online], [Accessed on 2nd November 2008]. Available
from World Wide Web:
<http://oxforddictionaries.com/search?searchType=dictionary&isWritersAndEditors=true&searchUri=All&q=method&contentVersion=WORLD>

UN (n.d.), Millenium Project, [Online], [Accessed
on 5th April 2012]. Available from World Wide Web:
<http://www.unmillenniumproject.org>

The University of Texas (n.d.), *Assess Teaching, Response Raters*, [Online], [Accessed on 2nd February 2012]. Available from World Wide Web:
<https://www.utexas.edu/academic/ctl/assessment/iar/teaching/gather/method/survey-Response.php>

ULI (n.d.), [Online], [Accessed on 2nd February 2012]. Available from World Wide Web: <http://www.uli.org>

University of Hawaii at Manoa, Hawaii Research Center for Futures Studies (n.d.), [Online], [Accessed on 14th March 2011]. Available from World Wide Web: www.futures.hawaii.edu

University of New South Wales, City Futures Research Centre (n.d.), [Online], [Accessed on 14th March]. Available from World Wide Web: <http://www.be.unsw.edu.au/research-centres-and-clusters/city-futures/about-us>

University of Southampton, Work Futures Research Centre, (n.d.), [Online],[Accessed on 14th March]. Available from World Wide Web: www.southampton.ac.uk/wfrc/

University of Turku (n.d.), Finland Futures Research Centre, (n.d.), [Online], [Accessed on 14th March 2012]. Available from World Wide Web: <http://ffrc.utu.fi/en/>

Appendices

Appendix 1 List of qualitative risk detection methods

Method	Description/ Procedure
Questionnaires and checklists	Use of structured questionnaires and checklists to collect information that will assist with the recognition of the significant risks.
Workshops and brainstorming sessions	Collection and sharing of ideas at workshops to discuss the events that could impact the objectives, core processes or key dependencies.
SWOT	Analysis of strengths, weaknesses, opportunities and threats for the specific organisation applying this method.
Inspections and audits	Physical inspections of premises, activities and audits of compliance with established policies and procedures.
Flowcharts and dependency analysis	Flowcharts and dependency analysis- analysis of the processes and operations within the organisation to identify critical components that is a key to success.

Source: Conrow (2004), Melnikov (2004), Lancaster 2005; Hopkin (2010)

Appendix 2 List of quantitative risk detection methods

Method	Description/ procedure
Decision trees	Graphic approach to compare competing alternatives and assign values to those alternatives by combining uncertainties, costs, and payoffs into specific numerical values; takes as input an object or situation described by a set of properties, and outputs a yes/no decision.
Bayesian networks	Illustrate the conditional independence between random variables; consists of events (nodes) and arrows. The arrows indicate dependencies, i.e. causal connections. Each node can be in various states, the risk analyst selects their number.
Neural Networks	Artificial intelligence that attempts to imitate the way a human brain works; used for predictions; adapting and learning from past patterns
Monte-Carlo analysis	Problem-solving technique that uses random samples and other statistical methods for finding solutions;
Regression	Technique for finding correlations between two variables using set of individual data points.

Source: Conrow (2004), Melnikov (2004), Lancaster 2005; Hopkin (2010)

Appendix 3 History of Foresight

UNIDO (2005) and Jemala (2010) divided Foresight history into five distinctive generations:

1. Post- war environment, mainly in the USA and Japan.
2. Emerged around 1990, focused on business markets and industries.
3. Started around the year 2000, gained social perspective, and engaged social stakeholders, like non-profit social and environmental organisations.
4. Fourth and fifth generation focused on a common vision building towards correlation of Research & Development (R&D), technology management, as well as social and sustainable development.

Years	Historical events	Generation of foresight	Foresight by countries	Historical events of Foresight
1914-1950	From World War I to NATO establishment and European Coal and Steel Community	Forecasting	UK, USA,	Professor of Foresight, Birth of strategic management
1950-1990	European Common Market, Beginning of Information Age, Recession	First Generation of Foresight	USA, Japan, France, Australia, Finland	US and Japanese Foresight; French National Colloquium on R&D Club of Rome
1990-till late 90s	US Stock Market Boom, Financial Crisis in Developing Countries, Internet Boom,	Second Generation of Foresight	France, Spain, Ireland, Thailand, South Korea, Netherlands	100 Key Technologies in France, Future Key Technologies in Thailand, OPT Spain

Years	Historical events	Generation of foresight	Foresight by countries	Historical events of Foresight
Late 90s- today	Attacks September 11; Largest expansion of European Union, Global Financial Crisis	Third, Fourth and Fifth Generation of Foresight	Czech Republic, Denmark, Estonia, Slovakia, Poland	National and regional Foresight programmes, Wide use of foresight in business environments

Source: Cuhls (2003); Keenan and Popper 2008; Czaplicka-Kolarz; Stańczyk and Kapusta (2009); Yuan, Hsieh, Chang (2010); Jemala (2010)

Despite various differences between Foresight from presented generations (see Table 3.3 Foresight Generations), the main functions remained – to analyse past results, current positions and to anticipate new emerging trends, opportunities and risks in order to be able to benefit from the future (Jemala 2010).

Appendix 4 Types of Foresight

Foresight is being used on national and regional level by governmental bodies and also by companies and non- governmental bodies as a major long term planning tool or to support previously developed and used planning processes. Foresight can be classified against numerous criteria, such like aim, subject or time horizon. Borodako (2009:30-31) divided Foresight types according to thirteen criteria including subject, object, area, budget.

Criteria	Foresight type	Comment
Leading organisation	Led by government or the government body; Led by independent consulting body; Led by agency funding the research; Led by industry or research company;	Ministries, scientific committees, or corporations with large R&D budgets lead these types of Foresight. In most of cases research is focused on the national level or specific industry.
Object	Societal; Technological; corporate	Foresight focused on specific object, target, which could be society, identification of new technologies or company's strategy
Territory/ range	international; national; interregional; regional; metropolitan; urban; local	Foresight could be also grouped according to their geographical or administrative range and focus.
Functional	To build recommendations; develop action priorities; reach consensus; appeal to decision makers.	Depending on expected result of the process, Foresight could be used to support setting of priorities, policies development, and to communicate possible actions and solutions
Scope and level	Macro, mezzo, micro	Holistic Foresight concerns a wide spectrum of issues. Macro foresight is focused on areas where interdisciplinary is required. Mezzo level represent projects focused on a single research area. Micro level indicates foresight, which is used as one of the tool/ additional in a specific project.

Criteria	Foresight type	Comment
Time horizon	Short- term; medium- term; long- term.	Short- term indicates 3-5 year perspectives, medium- term 5-10 years, while long- term 15-30 years.
Foresight's perception	As a process; a product; as a potential.	Foresight can be perceived and used as a process enabling communication between stakeholders. It can also be seen as product-recommendations, action agendas, policy themes, or be used to boost potential and activate resources.
Methodological approach	Qualitative; quantitative; normative; extrapolative.	Depending on character of the research, methods used in the process, such like statistical analysis, scenarios, and Delphi method.

Source: Loveridge 2005; Saritas (2006); Wonglimpiyarat 2006; Borodako (2009); Nugroho and Saritas 2009; Rohrbeck and Gemunden 2011

Although the criteria presented in Table 1 do not to enlist all possibilities, in practice the most widely used classification of foresights is division into three types (FOREN 2001):

1. National/ regional- national foresight programmes are those, in which governments play a role of sponsor, usually through appropriate ministries of departments. In case of regional foresight, a number of international governmental organisations (IGOs), such as the European Commission (EC), UNIDO, APEC, are active promoters of foresight to stimulate the setting-up of forward-thinking initiatives across several regions. Usually the aim of the Foresight undertaken by national authorities is to secure the technological and knowledge components of a sustainable and competitive economy and to enhance quality of life for citizens (Gavigan et al. 1999:498), like in case of projects - Poland 2020, or FutuRIS France 2020.
2. Technological - a tool used to assess development in scientific and technological field, which could have a strong impact on industrial competitiveness, wealth creation, as well as natural environment or quality of life. The technology foresight

exercises are widely used in various countries, for instance, in the UK, in the US, and Japan (Martin and Irvine 1989; Bowonder and Miyake 1993, Wonglimpiyarat 2006).

3. Corporate - also known as Managerial Foresight is as a process aiming to develop a mid- to long-term vision on future markets and customer needs (Alper and Oner 2003; Will 2008). Applied alongside traditional methods of strategic planning can widen companies' planning horizons. It may strengthen corporate competitiveness, while its goals are to (Ibid.):

- deliver business intelligence by gathering background information;
- warn early enough about recent developments;
- set priorities and action agendas for strategic planners;
- boost innovation;
- support present-day decision making.

More often Foresight is seen by corporate managers as a business skill linked with other business tools like crisis management, or innovation (Major, Asch and Cordey-Hayes 2001). There are numerous examples of companies, which use Foresight or other Futures methodologies, like Shell, British Airways, ECRC, Siemens or General Electric.



RICS FOUNDATION



FUTURES ACADEMY

King Sturge

Built Environment Foresight 2030:

the sustainable
development imperative

Collaborator Views



John Ratcliffe, The Futures Academy, University of Salford

"A revolutionary transformation lies ahead. It will be an extraordinary time; the era of sustainability and the era of responsibility. For both the built environment in general, and the real estate industry in particular, there will be new ways of thinking about things – more strategically, more systemically and more creatively; and new ways of behaving – responsibly, across disciplines and with new values and beliefs through foresight. Above all, we will have mainstreamed sustainability so that it is not just the honest and ethical thing to do, but also the economic and profitable. There might be a long way to go, but at least the era of denial is over."



Angus McIntosh, King Sturge LLP

"The Credit Crunch of 2007/08, and recession which followed, caught most of us by surprise and exposed the drawbacks of conventional forecasting, techniques that are generally limited to only five years. Understanding our cities, and their property markets, a generation from now depends on our decisions (or lack of them!) today. How cities will change more than 20 years from now will be influenced by environmental, cultural, demographic, financial and other trends - trends which are emerging today. The Built Environment Foresight project helps us see alternative visions of the future, as well as the different perspectives around the world (Europe, Asia-Pacific and North America). These visions of tomorrow help us plan our lives today."



Stephen Brown, The RICS Foundation

"It is difficult to know whether to be awash with optimism or drowning in pessimism - the best that one can say is that we now know the nature of the challenge. We now realise that it is no longer other species that we are threatening with extinction by our actions - it is we ourselves who are in danger. Our actions over the next 10 years or so will determine whether we have a continued existence and, indeed, whether we have earned the right to a place on this beautiful planet we call Earth."

Background

Over the past hundred years the world has undergone radical transformations in technology, demography, human culture and the environment. The last three decades, in particular, have been characterised by accelerated technological change, deregulation and privatisation, which have galvanised the process of globalisation. The simultaneous increase in the transparency of markets and the impact of the ICT revolution has meant that companies are now facing both challenges and growth opportunities as never before. Greater transparency, however, has also created the need for companies to justify and accept responsibility for the decisions they make.

"The future is a given uncertainty"

Whilst the activities of real estate professions have gone virtually uncontested for decades in a traditionally non-transparent industry, increasing concerns about global warming have begun to put the built environment in the national and global spotlight.

To quote one expert:

"something has occurred in the last few years, which has triggered a shift in perception from the key players within the real estate market".

Concepts such as sustainability, energy efficiency and 'green' building design have gained increasing recognition among those in the real estate professions. We now recognise that the way that we develop residential areas, offices, retail and leisure centres, transport links and car parks has a direct impact – positive or negative – on everyday life.

"I met the enemy – It's us!"

Considering that globally an estimated 60 per cent of all materials go into the construction industry, and 60 per cent of the world's energy is used to heat, light and ventilate buildings, it seems the time has come for the built environment professions, and the real estate industry more specifically, to incorporate sustainable development more profoundly into its thinking and practice. It needs to demonstrate a greater concern about its commitment towards cultivating a shared vision of the future.

Through the responsible management of social, environmental and human resources, the real estate sector can demonstrate to its peers how the values of Corporate Social Responsibility are best put into practice.

"Imagine tomorrow, decide today"

It is no longer a question of whether to embrace built environment sustainability, but more a question of how? Just how can the real estate industry incorporate sustainable development more profoundly into its thinking?

An economist is an expert who will know tomorrow why the things he predicted yesterday didn't happen

L.T. Peter

Study how a society uses its land, and you can come to pretty reliable conclusions as to what its future will be

E.F. Schumacher
Small is Beautiful

The Built Environment Foresight 2030 Study

Climate change is the biggest problem that civilisation has had to face

Sir David King
former Chief Scientific
Advisor, UK

I cannot teach anybody anything, I can only make them think
Socrates

When the facts change, I change my mind. What do you do, sir?
John Maynard Keynes

In response to this, The Futures Academy (Europe), now at Salford University, in collaboration with King Sturge LLP International Property Consultants and the RICS Foundation launched the Built Environment Foresight 2030 Study, which aimed to answer one major question:

“What are the major forces of change affecting the built environment in general, and the real estate industry in particular, and how should the global real estate community prepare itself now to address the sustainable development imperative?”

This report summarises the findings of the work. It is based on the results of workshops, face-to-face interviews and questionnaires, involving key real estate practitioners from around the world (listed in Appendix 3). They were given a time-horizon of 2030 and were initially asked to describe the one or two most vital issues that they would like to know more about. Two issues stood out from their responses:

- the level of government intervention in city planning and development
- the relative degree of economic prosperity prevailing internationally, regionally and locally

Alongside this, they were also asked what the key drivers of change were, against six headings. Their responses were as follows:

Cultural change

- Twin forces – **homogeneity and diversity** – are at play in transforming society into something new and unexpected. On the face of it contradictory, but in fact mutually supportive, the first is leading to an awareness of the second.
- The greatest threat to future world order and peace is the potential **clash of civilisations**, not of countries. Future flashpoints and terrorism will lie not along national boundaries, but where different civilisations meet.
- **A new business culture is emerging** – one that is based as much on principle – centred leadership as it is on the pure profit motive.

- The twenty-first century will see the **culture of universal education** for all people, worldwide, and throughout their lives.
- There is a **changing culture of healthcare** centred around such issues as new medical discoveries, alternative or complementary treatments, the duties and rights of patients and the roles and responsibilities of providers.
- Advances in **information technology** raise cultural questions about security, surveillance, control, access, privacy, crime, taxation, propaganda and social colonisation.
- It is possible to discern a movement in society **towards a rediscovery of certain fundamental values**. A shift away from materialism towards more enduring philosophical and spiritual values. More cynically, ethical business is now good business.

Demographic change

- The **world's population is growing**, moving and getting older.
- **Income disparities** between rich and poor nations continue to grow in a world composed of around four billion poor people, two billion aspirants and something over a billion citizens of wealthy nations. The first group creates less than 1% of world product and the last over 85% of it.
- The **average age is increasing** in the 'industrialised' world and will be around 40 by 2020.
- A 'grey' future is faced by most industrialised nations as their population ages and **elderly dependency ratios rise**.
- **Immigration will become a crucial issue** over the next 20 years, as a tidal wave of people seek to surge from undeveloped to developing and developed countries.
- The phenomenon known as **'the global teenager'** will become a powerful demographic force. Connected, communicating, concerned, cynical, idealistic, ambitious – global youth could exercise enormous social, economic and political power – but in what direction?

- The next ten years will witness about half the world's population **living in urban centres**, almost 400 million people having homes in the biggest 25 cities, and well over 300 cities in the developing world will have a population of over a million.

Economic change

- A radical restructuring of the world's economic order is taking place. **Economic globalism** is the name of the game. The dynamics of this new economic world, however, are largely untried, decidedly uncertain and little understood.
- **Capitalism** is the only economic system that has been seen to work anywhere, but even its foundations are shaking with the speed and force of change, so that the eternal verities of capitalism – growth, full employment, financial stability, rising real wages – are threatened.
- The one-third of humanity, and the one-quarter of the landmass, which was previously communist, has joined the old capitalist world with **serious problems in such sudden assimilation**.
- There will be a continued shift to an era dominated by **'brainpower' industries**.
- Advances in technology, transportation and communications are creating a world where **anything can be made anywhere** and sold everywhere.

"Economists have predicted nine of the past five recessions"

- The twenty-first century will be a period where there is **no dominant economic, political or military power** and no single country able to design, organise and enforce the rules of the economic game.
- The main foundations underpinning economic growth will be the development of a **ubiquitous digital economy**, increased research and innovation, and improved skills and knowledge of the workforce.
- Above all, the businesses that flourish in the twenty-first century will be those that master

the **art of getting information** to and from their customers.

- A **new financial architecture** in terms of global standards, regulation, compliance, taxation, risk assessment and corporate governance, will emerge.

"The future is already happening ..."

Environmental change

- Environmental issues will form a major dimension of change and the concept of **'sustainability'** will increasingly dominate the formulation of public policy at all levels.
- **Four basic questions** will constantly be addressed: Is there a **crisis**? Can the world **feed** itself? Is there enough **water**? Will there be sufficient **energy**?
- Top of the environmental agenda will be the issue of **global warming**, with consequent climate change and rising sea levels, resulting from high levels of greenhouse gas emission due to fossil fuel burning and land use change.
- There will be a steady growth in the number of environmental policy instruments introduced at international, national, regional and local level.
- Attention will increasingly be focussed upon the shape, density and functioning of cities. Bio-pandemics may challenge all cities.
- Organisations, of all kinds, will progressively have to demonstrate a sound and effective approach towards environmental resource management, and improved performance.

"Imagine ahead, plan backwards"

Governance

- National governments throughout the world will become less and less powerful. **Power** will be passed upwards to **supra-national bodies**, and downwards to **subsidiary authorities** at regional, federal, provincial, and town or city level.
- **Fiscal and monetary policy** will increasingly be determined by the world's financial markets.

Contributing to economic euphoria ... is the extreme brevity of the financial memory ... and ... the specious association of money and intelligence ... only after the speculative collapse does the truth emerge

John Kenneth Galbraith

We tend to underestimate change in the long-term and over estimate it in the short-term..."

Government will only have limited control over cyber space...

- Governments generally will be expected to **do less** and not more but, as the credit crunch has shown, this expectation will still go into reverse when there is a crisis.
- The accent by government will be placed upon **regulation** to secure effective, efficient and equitable provision of services.
- **Persuasion** will accompany regulation through better public education, public relations and public disclosure.
- Electorates of the developed world will be more and more disinclined to vote for increased **taxation**.
- **Social security** and welfare systems will come under **greater pressure**, with a growing tension between those in work and those not working having an impact on global cultural behaviour.
- **User charges**, for erstwhile free or subsidised public services, will be more common.
- **Cities** will emerge as the **critical focus** of economic activity, of governance and of social organisation for the future.

... on-line advocacy, activity groups and crime will expand exponentially ...

Technological change

- Over the next generation, until around 2030, the emphasis will be not so much upon inventing new technologies but on creating new and cheaper ways of applying existing ones: **greater efficiency**.
- Essentially 'mechanical' technologies will be comparatively slow to change, whereas those which can be classified as '**electronic**' will be very fast.
- The continued growth in computing capacity means that the process of data collection and analysis becomes continuous, so that in terms of decision-making and production, more and more things will be brought into '**real time**' management.
- The world will be embedded in a largely unbroken system of data exchange by 2020, and **costs will continue to fall**.
- Profound changes will occur in **workstyle** and workplace resulting from advances in

All our knowledge brings us closer to our ignorance...

T.S. Elliot

information and communications technology (ICT).

- Corporations will have to respond to an increasingly dynamic business environment by **creating flexible networked structures** characterised by the emerging 'virtual organisation', where loose, transient agglomerations join together to create new products and services, dissolving and reforming in different formats according to business imperatives.

"By 2030, 60% of the globe will live in cities"

- Corporate infrastructure will have to respond to two critical and competing needs of the business organisation in a globally dispersed operating environment – the need for organisational '**proximity**' and the need for organisational '**mobility**'.
- Advances in ICT will have an impact upon **urban structure**, layout and form, producing pressures for both centralisation and decentralisation.
- **Bio-technology** will become a driving force, linked with electronic nano-technology.

Drawing these together, the researchers created a series of scenarios for the world and regions of the world, which portrayed plausible 'futures', and used them to explore the challenges that these raised for the built environment professions.

Global scenarios



The only way to discover the limits of the possible is to go beyond them into the impossible
Arthur C. Clarke

It was just possible to read ... the three slogans of the party – War is Peace, Freedom is Slavery, Ignorance is Strength
George Orwell, 1984

The scenarios

Scenarios are instruments for ordering people's perceptions about alternative future environments in which today's decisions might play out.

Scenario planning (see Appendix 3) is now widely regarded as a basic tool for thinking strategically about the future. Scenarios have long been used by government planners, corporate strategists and military analysts as powerful aids in decision making in the face of uncertainty. What 'futures' did the scenarios in this study portray?

Firstly, the global scenarios in 2030. These set the framework for the European, Asia-Pacific and North American scenarios which follow.

Archipelagos: no barriers for free trade; economy and technology rule the world

This scenario assumes a world where economic growth is supported by rapidly developing technologies. Market integration progresses, but rather than creating one global market, most of the developed economies merge into competitive regional blocs. It is a world where individualism, inventiveness and entrepreneurship are appreciated.

Responsibilities and the power of institution, at both national and international level, are weakened since free market mechanisms dictate activities in all sectors. Rapidly expanding urban areas put severe pressure on fresh water supplies, infrastructure and housing. Sustainable cities exist but only the wealthiest can afford the costs of living in them.

You can never buck
the market

Former UK Prime
Minister, Margaret
Thatcher

Supernova: social unrest based on unequal distribution of wealth

It is a world where social and political tensions are heightened due to global economic stagnation. The world is shifting towards instability as markets reach an all-time low. The recession is in full swing. Conflict between rich and poor regions escalates, leading to violence and disorder.

The world fragments along ethical lines. Immoral capitalism takes its toll on society. Ongoing pollution of the natural environment buries all attempts towards sustainability. Ghettos and gated communities dominate the structure of urban areas which resemble fortresses rather than liveable cities.

Mission earth: economic systems based on knowledge and values supporting the principles of sustainable development

It is a world where a renewed global concern has put all dimensions of sustainable development on political and corporate agendas. Europe, Asia-Pacific and North America are economically and socially stable and their involvement in environmental issues slowly restores the natural balance.

Knowledge and talent are the most important resources contributing to prosperity and security. Decision-making processes are delegated to expert panels over public bodies and servants. Civic society has the authority to shape political and social agendas, focused on improvement of the natural and built environment.

The following pages set out scenarios for each of Europe, Asia-Pacific and North America. They differ from the Global Scenarios in some important areas. These are followed by some specific property market implications.

The key factors that underpinned the creation of these scenarios were uncertainty over the impact of sustainability, and the extent and degree of European integration that would take place.

The scenarios for Europe



I honestly think we will win the world cup ... unless something unexpected happens

Bastions

In 2030, the worldwide economic depression is in full swing and economic activity reaches an all-time low. Europe in 2030 has been predominantly shaped by long periods of global economic instability, as economic growth stalls around the world. A major oil price spike in 2014 set off a chain of economic events leading to a worldwide economic collapse, resembling that of the great depression.

The inward focus on job preservation and social cohesion in countries came at the expense of international competitiveness.

Investment in new technology and new productive capacity has dried up, as consumer spending continues to decrease. It is a world of striking disparities, where inequality, conflict and unsustainable development prevail. In such an atmosphere of rising social, environmental and economic tension, violence is endemic, leading to a massive movement of refugees.

Web

This scenario assumes a triumph of global corporatism. Economic stability, increased globalisation and rapid technological advances characterise the global economy. By 2030 it is a world of high consumption and sophisticated technology. Europe has developed into a strong, competitive trading bloc and is steadily coming closer to realising its ambition of becoming a serious world player in an increasingly competitive economic climate.

Although the integration process brought prosperity and political balance, the complex EU apparatus is becoming weaker, and gradually loses its efficiency.

The European Union operates like a massive corporate body used to create regulation, ensuring private profit maximisation, and is a safe haven for free trading. EU cohesion policies become obsolete as international companies influence and manage economic and social aspects of

I am shocked, shocked to find that gambling is going on here

Claude Rain as Captain Renault in Casablanca

daily living. Sustainability is only a buzzword remembered from companies' glossy brochures from the beginning of 21st century.

Terra Nova

Astonishing transformations have occurred worldwide over the last 25 years. The emergence of a new set of values placing emphasis on quality of life, solidarity, and environmental protectionism has replaced the creed of consumerism and individualism. Efforts to develop a co-ordinated pro-environment and anti-poverty policy have galvanised sustainable economic development across the globe.

Enhancing the quality of life has become the foundation for growth. Individual nation states have witnessed a fundamental departure from the old capitalist economic system. 2030 marks decades of development based on moral, values-based politics.

Guided by a new global ethic, countries in the developed world have set new standards to promote greater solidarity among developing countries. By 2030 it is a world that is close to being free of inequity and violence.

The scenarios for Asia-Pacific



It has yet to be proven that intelligence has any survival value
Arthur C. Clarke

The key factors that underpinned the creation of these scenarios were uncertainty over the level of internal reforms within countries in Asia-Pacific, and the extent and degree of regional integration that would take place.

Orient Express

Around the world the status quo endures. Economic stability, increased globalisation and rapid technological advances characterise the global economy in 2030. It is a world of high consumption and sophisticated technology. Economic interdependence between nations is at an all time high. Asia-Pacific in 2030 is a region full of contradictions and deep local differences, but has proved itself as a strong contender in the international arena.

After a series of economic shocks and breakdowns affecting markets all over the globe between 2012 and 2015 most Asia-Pacific countries found their own way to cope with the challenges. South East Asia suffered the brunt of the depression.

Investors from the region, especially Chinese and Japanese corporations, became crucial partners, creating successful joint ventures with investors from the USA and the EU. The energy crises from 2018 pushed many Asia-Pacific economies to close cooperation and exchange with the Middle East and Russia.

United States of Asia

By 2030, it is a considerably different world to that of the turn of the century. After several periods of economic and political reform, astonishing transformations have occurred worldwide. Global technology transfer and joint sustainable development initiatives, instigated by the Obama administration, has sparked a new wave of globalisation. Co-operation between rich and poor regions emerges, as the political systems of countries such as the North Korea, India, China and Japan move towards transparency, participation and inclusion.

In less than a generation the world has morphed

A sense of complete helplessness had descended upon him. To begin with he did not know with any certainty that this was 1984
George Orwell, 1984

The www can
gather vast
amounts of
information quickly

S. Pritchard
The Web of intrigue

into a thread of highly interconnected regional trade networks, where new technologies are openly developed, traded and applied in innovative ways across all sectors. Large scale industries have made room for smaller businesses catering for national needs.

The emergence of a new set of values placing emphasis on quality of life, solidarity and environmental protectionism is gradually replacing the creed of consumerism and individualism.

Broken promises

Economic stagnation in most major regions of the world marks the decade since 2008's financial meltdown. By early 2009 a world-wide economic depression is in full swing as economic activity reaches an all time low

A second major oil spike in 2010 set off a chain of events leading to worldwide economic collapse, resembling the great depression.

As life-long savings in stocks, mutual funds, pension and insurance funds are wiped out the fate of national economies is clouded by uncertainty. Investment in new technologies and new productive capacity quickly dries up as consumer spending decreases. It is a world of striking disparities, where inequality, conflict and unsustainable development prevail.

The scenarios for North America



There are risks and costs to a program of action. But they are far less than the long-range risks and costs of comfortable inaction...

President John F. Kennedy

The key factors that underpinned the creation of these scenarios were uncertainty over the level of political stability and civic security in the region, and the extent and concerns about energy security and resource management.

Happy in the dark

By 2030 the global population has reached close to 10 billion people, with less than a third having access to food and water. Over 20 cities now have populations of more than 40 million people, putting severe pressure on fresh water supplies and infrastructure. Rising social pressures, caused by rapidly growing populations, fuels insurgency. Illegal migration is on the increase as vast portions of populations in the East and South pack their bags in hope of a better life. It has become a world of scarce resources, inequity, political extremism and global pandemics.

Slowly but surely the East usurps the West, and China assumes its position as global economic powerhouse, followed by Russia, whose supply

of oil and gas puts the country in an enviable position on the economic and political scene. North America remains the world's second centre of gravity, trailing behind Asia-Pacific in terms of its economic prowess.

Despite the global demographic shift, the US population shows signs of stabilising by 2030. The significant legal inflow of Latin American citizens has resulted in a more economically integrated North and South America. Latinos climb the ladder of power as the US begins to align itself more with the rapidly developing Brazil and Argentina. Regional governance is the name of the game. By 2030 political and economic stability within North America returns but is no match for the rising power of the East. The lack of a coherent energy policy spells a bleak future for energy availability on the continent. What will happen when the lights go out?

"I am just going outside and may be
sometime"

We will harness the sun and the wind and the soil to fuel our cars and run our factories.

President Barack Obama, inaugural
Address January 2009

I have seen the future and it is very much like the present, only longer
 Kahlil Gibran,
 The Prophet

Micro fanaticism

The global economy recuperates with renewed growth across Europe, Asia-Pacific and North America. Nevertheless, the depression of 2010 inspired behavioural change across industries, leading to greater transparency and a new found openness to change.

"Trains at speed may run out of steam..."

The motto in 2030 is 'think global, act local'. Local capacity building has been a key focus of the last decade. The proliferation of micro-financing has succeeded in lifting a large percentage of the world's poor out of poverty, as global governments at last seem to have grasped the benefits of a 'thriving third world'. Prospects for North America improve as civic instability and insecurity gradually becomes a thing of the past.

In just two decades progress can be defined by a new generation of globally educated women. Population levels in developing countries decrease as women begin to make their mark in business and society. Consumer preferences create a strong demand for 'sustainable' products and services, as the catastrophic effects of climate change continue to awaken our 'green' senses. Increased research into climate change adaptation leads to the development of mass solar desalination plants throughout Australia and South Africa.

By 2030 large scale eco-parks abound as green plantations begin to flourish. Strong economic conditions prevail and a high level of trust characterises the general social mood in North America by 2030. The transformed region has become a global leader in sustainability having made the move away from fossil fuels towards a stronger reliance on nuclear and renewable energy by 2030. New-found advances in energy efficiency technology, including the carbon nano-tube in 2015 has led to superconductivity, and ultimately enables a reduction in the region's carbon footprint by over 50% - an unimaginable feat just two decades ago.

Prophecy is a good line of business, but it is full of risks
 Mark Twain

Oil and vinegar

North America gradually retreats behind its borders in an attempt to contain rising populations, poverty, political tension and the outbreak of yet another global pandemic. Prospects for the region are uncertain as the country begins to forge an inward strategy, moving away for regionalism in favour of going it alone.

Economies are localised and, after long periods of little growth, the economy in the USA gains momentum again. However investor confidence is low and they wonder whether the North American market will ever grow to pre-crash heights, and most remain apprehensive that continued over-reliance on the old free-market ideology will bring the economy crashing once again. Many avoid the stock market, housing market and other commodity based markets as fear of repeating past mistakes increases.

What can we draw from this?

The first point to note is that due to the variety of values, culture and opinion between participants in each of the three spheres of influence, Europe, Asia-Pacific and North America, it is difficult, if not impossible to form one overall conclusion for the future for the global built environment in general, and the real estate industry specifically.

Different standards and policies may have relevance to companies operating in Europe, and North America for instance may bear no significance for companies operating in the Far East.

However, a few key conclusions emerge. In 2030 the real estate industry will need to:

- cater for over 7 billion people, with the majority living in urban areas.
- creating neighbourhoods and communities will make for more successful urban areas.
- adjust to climate change: higher temperatures, weather anomalies and sea levels rising will force a revolution in building design

patterns, in terms of determining location and development processes.

- take a closer look at infrastructure: transit oriented developments will prevail.
- adopt energy efficient solutions.
- focus on retrofitting existing building stock: since regulations and market demand will force the development of green and sustainable projects.
- heavily rely on advanced technology from construction stage through to building operations.
- reshape the office sector to meet the demands of a changing workplace.
- address the need for properties and special amenities of ageing populations in developed countries.
- be shaped by demographic trends: investment and development will follow migration waves.

Today, only a handful of people know what it means – soon you will know

The China Syndrome

What does this mean for the real estate professions?

Five key areas emerge.

- **Education:** Educate real estate professionals in the advantages of conducting business activities in a more holistic manner.
- **Stakeholder Dialogue:** Increase dialogue between the various stakeholders in the real estate process from design to implementation to management and monitoring.
- **Sustainability Mindset:** Prepare a new generation of real estate managers to develop a more holistic approach, shifting the corporate culture and incentive system to support sustainable business.

- **Cross Sector Linkages:** Recognise the benefits of developing coherent linkages across sectors – from developers, architects, engineers, planners, suppliers, builders, environmental consultants, academia – to draw out the various roles and responsibilities to enable shared learning and mutual benefit. Greater linkages between, government, industry and community stakeholders is needed.

- **Partnerships:** Build public-private-partnerships (PPPs) to ensure increased proliferation and market uptake of existing and emerging technologies and real estate/construction methods

You kept so few of your promises, its destroyed credibility of all politicians ...

John Toly,
Politician, Canada

Finally, questions for the professions

Prediction is very difficult, especially if it's about the future

N. Bohr
Nobel Laureate, Physics

Finally the research posed five big questions for the profession.

How will we think?

Getting people to change their minds, about things that matter, is perhaps the greatest challenge of them all. There was a growing awareness throughout the project, however, that mind sets in the built environment would have to change in the following directions and dimensions.

- **Strategically.** The art of the long and wide view needs to be cultivated more assiduously, with a better understanding of the driving forces of change and a clearer vision of the chosen path towards a preferred future.
- **Systematically.** Perhaps the biggest breakthrough in how we comprehend the built environment and guide change, in the organisations that contribute towards its stewardship, is to be gained from systems theory and systems thinking. All participating disciplines should be better versed.
- **Creatively.** Everyone has creative capacities, but all too often they are stifled or suppressed. As the precursor to innovation, itself the salvation for sustainability, there is a need to develop and exploit the creative capacities across and within built environment organisations.
- **Responsibly.** As we enter the 'age of sustainability' we also enter the 'age of responsibility' – individually, corporately and collectively.
- **Inter-generationally.** A perspective based on the sharing of information, thoughts, feelings, experiences, and skills across and between generations can enrich all of us, and is, at heart, the central core of sustainability.

Will we behave differently?

Thinking is one thing – acting entirely another. With varying emphases between the regions of the world, there was agreement among participants in the project that we would have to nurture altered modes of behaviour in the following spheres.

- **With Values.** Determining the right set of

values at every level – individual, group, community, corporation, city, region and global – is at the root of everything, however, patent or pretentious it might sound. It came to the fore, sometimes surprisingly so, at all the workshops.

- **With Responsibility.** Repetitious but fundamental, the role that responsible behaviour, especially within the corporate sectors of the built environment, is the active or operational face of establishing values. Rapid change is taking place, superficial at first, but increasingly sincere and significant.
- **With Cross-Disciplinarity.** Whether inter-, multi-, or trans-disciplinary, the complex nature of built environment issues demands such an approach.

"Happiness is bliss"

- **With Discretion.** Not just generally exercising more and better judgement as what to build where, but also ensuring greater flexibility and adaptability in planning, design, financing, construction, servicing, management and use.
- **With Foresight.** Following in the footsteps of science and technology, the built environment disciplines and agencies are beginning to develop a capacity for critical thinking concerning long-term developments; foster debate and decision-making across broader constituencies; and acquire an appreciation of how to shape a preferred future. The capacity of foresighting – of which, of course, this project is a modest contribution.

Who will be involved?

With mounting regulation, greater accountability and heightened levels of compliance there will be more parties, players and participants in the processes of the built environment. Some of the most notable trends identified in the project are summarised below.

- **The Professions.** Serious questions must be raised about the continuing relevance of institutionalised professions along the lines of the British model. The challenge is to represent

the complex cross-disciplinary nature of the built environment on the one hand with the constantly changing highly specialised skill-sets required on the other.

- **Public-Private Partnerships.** As the private sector looks for new markets, especially in the infrastructure, health, affordable housing, and education fields, and the public sector faces diminishing budgets, there will be an inevitable growth in the number of public-private partnerships in real estate development.
- **Regulators.** In the wake of the collapse of the global financial system, and with pressure to secure sustainable urban development, there will assuredly be greater regulation and more regulators in the processes, procedures and practices of real estate investment, development, management and valuation.
- **Communities.** There is a growing expectation on the part of communities, of all kinds, not just to be consulted on development proposals but increasingly to collaborate in their location, design and use.

"Fanaticism is fatal..."

- **Leaders.** Leadership has become the mantra of the moment; nevertheless, the gift of inspiring others to works of excellence is one that is much needed generally in those organisations contributing to the built environment, and has arguably been specifically lacking in the continuing executive education of the real estate professions. This is starting to change.

... and what about real estate?

However foolhardy it might be to draw just a few substantial conclusions from such a diverse study of this kind, the following factors came frequently to the fore.

- **Quality.** Real estate will return to being assessed qualitatively for its physical and functional properties rather than simply quantitatively as a financial asset class.
- **New Asset Classes.** Infrastructure will become a major sector in the global real estate market;

and health, education and leisure will continue to grow in importance.

- **Service.** Real estate will become increasingly a service industry with changing patterns of tenure (more transient), facilities (fuller provision) and management (greater attention).
- **Market Divergence.** A two-tier market will emerge between truly 'sustainable' buildings and 'other'; with the accent also firmly placed on flexibility and adaptability. Space over place.
- **Changing Locations.** Locational preferences will alter as personal mobility decreases and the costs of distribution soar resulting from rising fuel prices; while at the same time technological advances obviate the need for so much travel.

Finally, what really lies ahead?

Who, of course, can truly tell? But five recurring themes ran through the project in all parts of the world.

- **Managing the Energy Deficit.** The replacement of fossil fuels with clean energy during the first half of this century is a tall order, particularly since the world's energy requirement will double by 2050 to 2 trillion watts. Solving the energy problem is the secret to solving all other problems relating to water, food, health and prosperity.
- **Defusing the Demographic Time Bomb.** Not only is the population of the world growing, moving and ageing, but, for the first time in human history, economic growth has become the prerogative and purpose of most people on the planet.
- **Exploiting Convergent Technologies.** Combinations of nanotechnology, biotechnology and information technology are transforming human society. Technological convergence is beginning to define the way societies interact and organise themselves. Who will own, control and use them? What, moreover, will be the long-term impact of such meta-technologies on our self-understanding and existence? We need to exploit the benefits

To expect the unexpected shows a thoroughly modern intellect
Oscar Wilde

Some things are so unexpected that no one is prepared for them

L. Roster, Rome Wasn't Burned in a Day

and protect ourselves from the worst excesses of scientific achievement.

■ **Mainstreaming Green Development.** New planning policies, design strategies, funding sources, energy-efficient material and innovative building technologies are helping to take green development mainstream. The World Green Building Council model, for example, is proving infectious, as new councils are formed across the world. The biggest challenge, however, is not so much with new development, but with the green regeneration and retrofitting of other parts of cities.

■ **Profiting From a Responsible and Sustainable Future.** Again we return to the twin concepts that have framed this project. Corporations are under increasing pressure from customers, employees, legislators, banks and insurance companies to embrace social and environmental responsibility. There is now a growing recognition, however, that the business paybacks of sustainable development strategies are quantifiable and real. Sustainability is not only the responsible and ethical thing to do it's the economic and profitable thing too.

There are numerous ways in which we can steer future events so as to avoid the pitfalls that lurk in our path and to create opportunities for a better world and a better built environment. A revolutionary transformation lies ahead, and this Built Environment Foresight study has attempted to play a part, however small, in exploring that transformation for those who will be involved in taking the real estate industry forward.

We have it our power to begin the world over again

Thomas Paine
Common Sense 1776

In conclusion, there has probably never been a period in human history when strategic foresight has been more needed, whether for countries, corporations, cities, communities or even the individual. This is an extraordinary time. Not least for the built environment in general, and the real estate industry in particular.

Appendix 1

The Futures Academy Salford University The RICS Foundation King Sturge

The Futures Academy

The Futures Academy was established at Dublin Institute of Technology (DIT) in January 2003 to provide both a research and consultancy forum for promoting and encouraging the concept of 'future-proofing' policy and strategic decisions. From 2009 it has reformed as The Futures Academy (Europe) based at the School of the Built Environment, Salford University.

The Futures Academy is a very pragmatic, down-to-earth research and consultancy service. Through the experience of its associates, it recognises the need for government and industry alike to be provided with useful, practical, comprehensible information which can make a positive difference to everyday policy and practice.

School of the Built Environment, Salford University

The University of Salford has a rich history stretching back to 1896. Salford is widely regarded as one of the UK's leading enterprising universities, delivering real-world results to business, industry and the community locally, nationally and internationally.

The School of the Built Environment is a nationally and internationally recognised centre of excellence for Built Environment study and research. It offers a comprehensive range of world class, management focused and professionally accredited postgraduate programmes, developed in partnership with the Built Environment industries and the Professional Bodies. The School's aim is to develop ever more highly-skilled and innovative managers, able to take on the challenges of the future.

The RICS Foundation

The RICS Foundation is a world wide charitable Foundation, which seeks to enhance the quality of the built and natural environments for the benefit of all, and is committed to ensuring that sustainability is an intrinsic part of all its undertakings. The RICS Foundation was formed by the Royal Institution of Chartered Surveyors (RICS) in 2000 and is independent of the RICS.

King Sturge

King Sturge is one of the largest international property consultancies with a network of over 210 wholly owned, associated and affiliated offices in 45 countries worldwide. Over 3,800 staff throughout these offices cover all property sectors and specialisms, including plant and machinery. King Sturge is a leading supplier of property and related services in the commercial market including the industrial, office, retail and leisure sectors. These services include agency, asset management, building consultancy, business recovery, corporate real estate, development, financial services, investment, landlord & tenant and valuation.

Appendix 2

People over 65 will more than double by 2050

Authors

Professor John S. Ratcliffe: Project Leader

John is a chartered planning and development surveyor with over forty years experience as a consultant and academic in the fields of urban planning and real estate development. Until recently he was Director and Dean of the Faculty of the Built Environment at the Dublin Institute of Technology, where he commenced this project. He is now Professor of Built Environment Futures at the University of Salford and an independent consultant through The Futures Academy on strategic foresight.

The author of a number of books and numerous other publications on land use and development matters, John Ratcliffe has also acted as a consultant to national and international organisations and agencies in both the public and private sectors. Over the past decade he has acquired a particular expertise in the futures field, with special reference to the sustainable development of city regions.

Gillian O'Brien BA, MSc, PhD: Project Manager

Gillian project managed this two-year global research project whilst working as a doctoral researcher in The Futures Academy at DIT. Her own research examined the notion of Corporate Social Responsibility within the commercial real estate industry using a foresight approach. She has a background in sustainable development and international business and now works as a Programme Manager for the Office of Government Commerce, UK.

Dominika P. Brodowicz MA: Project Researcher

Dominika has a background in real estate and international business relations, graduating from the Warsaw School of Economics. She was a full-time doctoral researcher at The Futures Academy at DIT but has now returned to the Warsaw School of Economics to complete her doctoral studies in the field of sustainable development and foresight within the real estate industry. She is an active member of the Urban Land Institute and has taken part in a number of their conferences and events in both Europe and the United States.

Anyone who believes that exponential growth can go on forever in a finite world is either a madman or an economist
Kenneth Boulding

Appendix 3

The context of foresight and scenario planning

What is foresight and scenario planning?

In essence, foresight is the process of attempting to broaden the boundaries of perception by carefully scanning the future and clarifying emerging situations. Foresight pushes these boundaries of perception forward in at least four major ways:

- By assessing the implications of present actions and decisions (consequence assessment).
- By detecting and avoiding problems before they occur (early warning and guidance).
- By considering the present implications of possible future events (pro-active strategy formulation).
- By envisaging aspects of desired futures (normative scenarios).

What are scenarios?

Scenarios are instruments for ordering people's perceptions about alternative future environments in which today's decisions might play out.

Scenario planning is now widely regarded as a basic tool for thinking strategically about the future. Scenarios have long been used by government planners, corporate strategists and military analysts as powerful aids in decision making in the face of uncertainty.

In practice, scenarios resemble a set of stories built around carefully constructed plots. Such stories can express multiple perspectives on complex events, with the scenarios themselves giving meaning to these events.

How do you create scenarios?

The process is highly interactive, intense and imaginative. It begins by isolating the decision to be made, rigorously **challenging the mental maps that shape people's perceptions**, and hunting and gathering information, often from unorthodox sources.

The next steps are more analytical: **identifying the driving forces**, the predetermined elements and the critical uncertainties. These factors are then prioritised according to importance and uncertainty.

Subsequently, three or four thoughtfully composed scenario 'plots', each representing **plausible alternative futures**, against which policy options can be tested and implications identified.

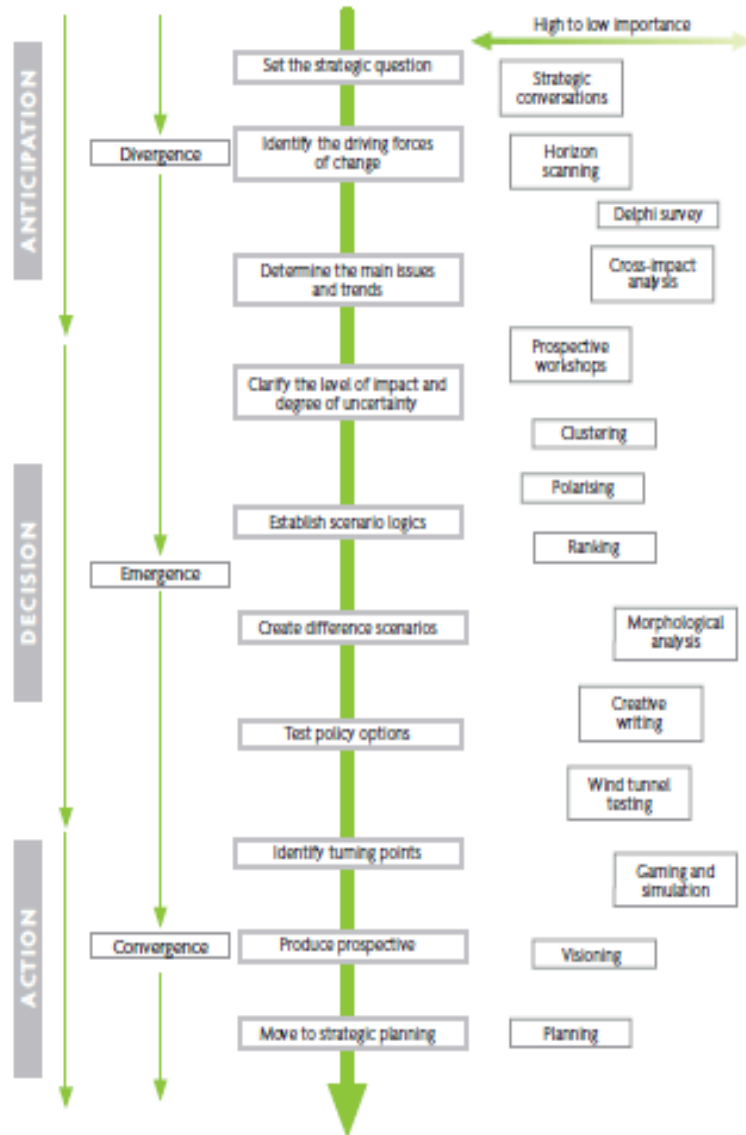
Why use scenarios?

Scenarios are powerful planning tools because the future is unpredictable. Their main characteristics being that they:

- present alternative images instead of extrapolating trends from the present.
- embrace qualitative perspectives as well as quantitative data.
- allow for sharp discontinuities to be evaluated.
- require decision makers to question their basic assumptions.
- create a learning organisation possessing a common vocabulary and an effective basis for communicating complex – sometimes paradoxical – conditions and options.

Good scenarios are plausible and surprising. They have the power to break old stereotypes; **by rehearsing tomorrow's future, they produce better decisions today.**

The prospective scenario process



Source: Ratcliffe and Sirr (2003) The Futures Academy

Built Environment Foresight 2030: the sustainable development imperative

The scenario study

A scenario study was undertaken during the years 2007-2009 to test the methodology and refine the approach. What follows is a very brief description of the process.

The strategic question

Resulting from workshops, and reinforced by selected interviews, the strategic question was set as:

"What are the major forces of change affecting the global real estate industry, and how should the property profession position itself now to face the future?"

In defining this question, participants in both the initial workshop and the opening interviews were asked to "**think the unthinkable**"; what are the one or two vital issues that would affect the nature and direction of the real estate industry. Two things they would most wish to know were:

- the level of government intervention in city planning and development
- the relative degree of economic prosperity prevailing internationally, regionally and locally

These two fairly familiar factors were used to form the scenario matrix within which the alternative scenario logics or story lines were developed. At this stage, the time horizon of 2030 was established.

The driving forces of change

A combination of environmental scanning, a brainstorming session at workshops and later interviews identified the driving forces of change. These were the most significant elements at play in the external environment.

In this exercise, the "six sector system" widely used in strategic planning and business management was used; **Culture, Demography, Economics, Environment, Governance and Technology.**

Issues and trends

From the exploration of the general driving forces of change, more particular issues and trends

pertaining to real estate futures were identified. Over 100 issues and trends were diagnosed and classified according to the six sectors.

Impact and uncertainty

The issues and trends identified were evaluated for the likely impact and degree of uncertainty they would have upon prospective priorities, policies and plans. For clarity and simplicity, these were plotted on a grid according to their perceived impact and uncertainty.

Creating the scenarios

It was decided to construct a set of three plausible, differentiated, internally consistent, yet challenging, scenarios of the world in 2030 against the two axes of economic growth and government intervention.

Scenario testing and interpretation

Following the presentation of the global scenarios, (plus policy proposals formulated from an analysis of the issues and trends), the scenario construction process and the selective interviews were tested against each vision of the future.

The driving forces of change

All the dimensions of change – frequency, magnitude, complexity, rapidity and visibility – are happening at an ever accelerating pace. In the past, there has been a discernible pattern to change. This time, however, it is different, for change is far less sequential and certain, showing much greater discontinuity and unpredictability.

To get a vision of real estate in the future, it is first necessary to gain a vision of society in the future.

This is not the end, it is not even the beginning of the end, but it is the end of the beginning.

UK Prime Minister Winston Churchill 1942

Contributors

The following took part in the events below:

London Workshop (November 2007)

ULI European Sustainable Development Council Workshops (Paris, February 2008)

Hong Kong and Singapore Workshops (July 2008)

Chicago Workshop (June 2009)

Additional Participants in Strategic Conversations held in London, Hong Kong, Miami and Chicago (2007 – 2009)

Questionnaire Respondents

Kirk	Alter	Purdue University
Kevin	Augustyn	USA Commercial
Richard	Barkham	Gravenor
Stephen	Berler	Gravenor, London
Brad	Berhart	Pepper Construction
Steve	Bickell	TSA
Bill	Beier	Business In The Community, London
Nick	Brooke	Professional Real Estate Services Ltd.
Stephen	Brown	RICS Foundation, London
Nicholas Patrick	Braune	The University of Melbourne
Jürgen	Brun-Berensberg	HafenCity Hamburg
Emer	Byrne	DTI
David	Cadman	Upstream
David	Canavan	University of Aberdeen
Michael	Cannon	Arch Consultants Ltd
Suzanne	Cannon	DePaul University
Yang	Cao	University of Aberdeen
John R.	Caswell	Government Services Administration
Michelle	Chenyi Huang	The University of Melbourne
Daly	Chong Huang	Tongji University, PRC
Greg	Clark	Organisation for Economic Co-operation & Development, London
Stephen	Clarke	University of Aberdeen
Max	Cookes	The University of Melbourne
Robert	Cox	Purdue University
Alex	Dervell	Hong Kong University
Sebastian	Drapac	The University of Melbourne
Darcia	Dihaguerre	University of Aberdeen
Louise	Elliott	Investment Real estate Forum, London
David	Faulkner	Colliers Director / Consultancy and Valuation Asia
Rosemary	Feeman	JLL, London
Nan	Feng	The University of Hong Kong
Besale	Feng Xu	Tongji University, PRC
Ward	Feste	Carlyle Group
Martin	Field	The Urban Consortium
Jacopo Della	Fontana	Design 2 Users, Milan
Teresa	Fourcher	Siddmore, Owings and Merrill LLP
John	Goddard	J Goddard & Co
Robert	Goldman	DIA Piper LLP
Anthony	Goldby	Walsh Group

Chris	Goodier	Loughborough University
Mark A.	Goodman	Mark Goodman & Associates
Jim	Goudie	University of Aberdeen
Zac	Grant	Faber Maunsel
Blair	Hajjull	James Lang LaSalle, Dubai
Jürgen	Horvath	HAG - Gesellschaft fuer Oekonomie und Technik mSH, Munich
Eather	Howe	URS Corporation Limited, London
Nick	Hudson	RCS Oceania
Brian	Israel	River North Residents Association
Jeff	Janick	Mortensen Construction
Arash Pellica	Johanna	Beijing Foreign Studies University
Bradley	Kanvask	Equity Residential
Despina	Kakivakis	DEGW, London
Miles	Keeping	GVA Grimley, London
Hwei Jin	Keow	The University of Melbourne
Chi	Kin Law	Hong Kong Land
Ron	Kobold	Methel Colin Associates
Amy	Kong	Hong Kong Science & Technology Parks
Eugene	Kwan Rung Chan	The University of Melbourne
Rene	Lacoste	Foundation for the Urban Environment, Kortenber
Bernadette	Lau	Colliers International
Gary	Lawrence	Principal, Urban Strategies Leader, Anup
Jim	Lee	Tsinghua University, PRC
CY	Leung	CY Leung & Co. Ltd
Rachelle	Lewitt	Urban Land Institute, Washington
Bo	Li	University of Aberdeen
Xuan	Li	University of Aberdeen
Hongyu	Liu	Institute of Real Estate Studies Tsinghua University
Nick	Loup	Grovenor Asia
Mary	Ludgin	Heltman
Lary	Lund	Real Estate Planning Group
Berbara	Mathopoulos	Chicago Association of Realtors
Maureen	McAvey	Urban Land Institute, Washington
Angus	McIntosh	King Sturge, London
Keith	McDonnell	Hong Kong University
Paul	McNamara	PRIPM, London
Sarah	Meritt	Present Makers
Arita	Mitchell	James Lang LaSalle
Stuart	Morley	GVA Grimley, London
Anthony	Najem	Meyer – Najem Construction
Antone	Najem	Venture Real Estate
Nathan	Najem	Meyer – Najem Construction
Helen	Ng	Acumen Fund, New York
Roger	Nisam	Sun Hung Kai Properties
Bernie	O’Roarty	RSEF, London
Gerald	Peris	Lehman Brothers, London
Stephanie	Peter	Chicago Tribune, USA
Andrea Christle	Pizzacconi	Christle Company, New York
William	Poppel	De Paul University, USA
Bob	Pratt	Pratt Design Studio
Brian	Pulver	Weiss Jerning
Patrick	Reddin	Association of Building Engineers, London
Richard	Reed	Deakin University, Melbourne

William	Remmer	Hart Howerton, London
Will	Rowson	ING, The Hague
Paul L.	Scales	Pacific Investments Asia Ltd
Kurt	Schmigel	DLZ Engineering
Pedro	Seabra	CBRE Richard Ellis, Lisbon
James	Shilling	DePaul University, USA
Noah	Shlain	Grubb & Ellis Co, USA
Jitaporn	Sriboonjit	Thammasat Business School, Thammasat University
Colin	Sutherland	Rawlinsons Ltd.
Gene	Taylor	The University of Melbourne
Bob	Thompson	RETI Group, London
Lewis	Tong	The University of Melbourne
Chun-Kil	Trent Lo	The University of Melbourne Royal Parade
Arjen	van den Berg	DSI
Douglas J.	Volgt	Skidmore, Owings and Merrill LLP
Ujjval	Vyas	Alberti Group
Mark	Weintraub	Mark Weintraub Architecture & Design LLP, LLI London
Julien	Whitton	Jones Lang LaSalle Hotels
Philip	Whiting	IV Interiors
Sara	Wilkinson	Deakin University
Eris James	Wilson	The University of Melbourne
Richard A.	Wilson	Skidmore, Owings and Merrill LLP
Y.C.	Wong	Hong Kong
Merle	Woo	Professional Real Estate Services Limited
Andrew	Wood	ANNEX 360 (now Venaco)
Xinyu	Zhang	Tsinghua University PRC
Zidi	Zhao	The University of Melbourne, Royal Parade
Jacques-Olivier	Zink	University of Aberdeen

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Built Environment Foresight 2030: the sustainable development imperative

Appendix 6 Sample of the regional questionnaire with a cover letter



BUILT ENVIRONMENT FORESIGHT: The Sustainable Development Imperative

The Futures Academy Questionnaire

The aim of this questionnaire is to collect your thoughts on a range of issues affecting the future of the built environment in North America, with particular emphasis on real estate sustainability and corporate social responsibility. The results of this questionnaire will be used in the creation of a set of scenarios for the built environment in North America.

All responses will be kept strictly confidential, however, if you wish to be listed in the appendix of the final report, please provide your name and organization in the space provided.

*Dominika Brodowicz MA
Gillian O'Brien MSc
Professor John Ratcliffe*



NAME:

ORGANISATION:

EMAIL:

NB. If you wish to remain anonymous please leave this section blank.

- 1. What pivotal events from the past few years provide good lessons for the future of the commercial real estate industry in North America?**
- 2. What are the most serious problems and challenges affecting the real estate industry in your region today?**
- 3. Under the following headings, identify two or three major issues and trends that you feel will affect American commercial real estate industry over the next 20 years.**
 - Demographic
 - Economic
 - Governance
 - Environmental
 - Technological
 - Social
- 4. Looking forward at environmental and social issues over the next decade, how do you believe the role of government in NA will evolve as regards the business sector? Tick all that apply**
 - Increased use of regulatory instruments
 - Less use of regulatory instruments
 - Increased use of guiding policy and voluntary approaches
 - Less use of guiding policy and voluntary approaches
 - Increased engagement on social and environmental issues
 - Less engagement on social and environmental issues
- 5. Do you agree or disagree with the following statements concerning corporate responsibility in North American commercial real estate industry (1 = strongly agree, 5 = strongly disagree)**
 - No clear definition of CSR
 - Too many standards, codes and guidelines
 - No clear guidance on/ criteria for selection
 - Too much overlap
 - Too much incompatibility
- 6. Which group advocates sustainability and is proactive in terms of sustainable solutions? Tick all that apply, give rank 1 to 3 to three most influential groups**
 - Architects

- Developers
- CRE Leaders
- Property managers
- Architects
- Developers
- CRE Leaders
- Property managers
- Facilities managers
- Landlords
- Brokers
- Insurers
- Investors
- Occupiers
- Stakeholders- society/ local communities
- Public planners

7. Which group advocates sustainability and is proactive in terms of sustainable solutions? Tick all that apply, give rank 1 to 3 to three most influential groups

- Architects
- Developers
- CRE Leaders
- Property managers
- Facilities managers
- Landlords
- Brokers
- Insurers
- Investors
- Occupiers
- Stakeholders- society/ local communities
- Public planner

8. Which of the following issues related to sustainability are important to your company?

- Carbon emissions
- Environmentally friendly business operations
- Energy and water utilization
- Corporate social responsibility
- Other (please state)

9. Mark the level by which following factors are most likely to increase the importance of sustainability within the commercial real estate industry?

High Medium Low

- Government incentives
- Energy and emissions regulations
- Energy and carbon taxes
- Growing costs of energy use
- Improved technology
- CEO and senior management focus and support
- Employee's interest
- Customers' pressure

10. How many sustainable project has your company completed in:

- Last year
- Two to five years ago
- On-going projects
- Planned projects for next two years

11. What is the availability of sustainable solutions in your sector? Choose one of the following:

- Good
- Limited
- Minimal
- Hardly any

12. Choose the opportunities, which creates sustainability for your organization:

- Risk management
- Diversification
- Growth
- PR tool
- Other (please state)

13. In your opinion does American commercial real estate industry cater for CSR / sustainability requirements? How it will look in next twenty years?

14. Would you like to add any comment?

Thank you for your time and assistance!

Please return by email or post to:

Dominika Brodowicz
The Futures Academy,
Faculty of the Built Environment
Room 427, Bolton Street
DIT
Dublin 1
dominika.brodowicz@dit.ie

Appendix 7 List of real estate professionals invited to take part in the on-line survey – Questionnaire 4

1.	Alex Darvell	Hong Kong University
2.	Amy Kong	Hong Kong Science & Technology Parks
3.	Anais Felicia Johanna Cosneau	Beijing Foreign Studies University
4.	Andrea Christie Pizzacconi	Christie Company
5.	Andrea Ciaramella	Politecnico di Milano
6.	Andrew Wood	ANNEX 360
7.	Angus McIntosh	King Sturge
8.	Anita Mitchell	Jones Lang LaSalle
9.	Anna Stankowska	Elbud
10.	Anna-Liisa Sarasoja	Technical University of Denmark
11.	Anthony Goldsby	Walsh Group
12.	Anthony Najem	Meyer – Najem Construction
13.	Anton Troianovski	The Wall Street Journal
14.	Antone Najem	Venture Real Estate
15.	Arjen van den Berg	DSI
16.	Barbara Matthopoulos	Chicago Association of Realtors
17.	Bee Gan	Sheffield Hallam University
18.	Bernadette Lau	Colliers International
19.	Bessie Feng Xu	Tongji University
20.	Bill Boler	Business in The Community
21.	Blair Hagkull	Jones Lang LaSalle
22.	Bo Li	University of Aberdeen
23.	Bob Pratt	Pratt Design Studio
24.	Bob Thompson	RETRI Group
25.	Brad Benhart	Pepper Construction
26.	Bradley Karvasek	Equity Residential
27.	Brenna O’Roarty	RREEF
28.	Brian Israel	River North Residents Association
29.	Brian Pulver	Weiss Jenning Elsner
30.	Bruce R. Schultz	Prism Development Co.

31.	C.Y. Leung	C.Y. Leung & Co. Ltd
32.	Chi Kin	Law Hong Kong Land
33.	Chris Goodier	Loughborough University
34.	Christopher Hughes	RREEF
35.	Chun-Kit	The University of Melbourne Royal Parade
36.	Clint Bautz	Skidmore, Owings and Merrill LLP
37.	Colin Sutherland	Rawlinsons Ltd
38.	Daisy Chong Huang	Tongji University
39.	David Cadman	Upstream
40.	David Canavan	University of Aberdeen
41.	David Faulkner	Colliers, Consultancy and Valuation Asia
42.	Dawid Rutkowski	AIB Polonia Property Funds
43.	Despina Katsikakis	DEGW
44.	Dorota Malinowska	Cushman & Wakefield
45.	Douglas J. Voigt	Skidmore, Owings & Merrill
46.	Eleine Worzala	Center for Real Estate Development
47.	Emrah Senel	Global Real Estate Institute
48.	Eseosa Ekhaguere	University of Aberdeen
49.	Esther Howe	URS Corporation Limited
50.	Eugene Kwan Fung Chan	The University of Melbourne
51.	Gary Lawrence	Arup
52.	Gene Taylor	The University of Melbourne
53.	Gerald Parks	Lehman Brothers
54.	Graham Lane	ERM Central Europe
55.	Greg Clark	Organisation for Economic Co-operation & Development
56.	Helen Ng	Acumen Fund
57.	Hielke Hekman	Hanzehogeschool Groningen
58.	Hongyu Liu	Institute of Real Estate Studies Tsinghua University
59.	Hwei Jin Keow	The University of Melbourne
60.	Jacopo Della Fontana	Design 2 Users
61.	Jacques-Olivier Zirah	University of Aberdeen

62.	James Shilling	DePaul University
63.	Jaroslav Prawicki	HB Revis
64.	Jason Stanley	Skidmore, Owings and Merrill LLP
65.	Jeannie Klein	Boca Raton Resort & Club
66.	Jeff Janicek	Mortensen Construction
67.	Jeffrey Rappin	Evergreen Real Estate Services
68.	Jerry Ferstman	Forest City Enterprises Inc.
69.	Jim Goudie	University of Aberdeen
70.	Jin Lee	Tsinghua University
71.	Jittaporn Sriboonjit	Business School, Thammasat Universi
72.	John Goddard	J. Goddard & Co
73.	John R. Caswell	Government Services Administration
74.	Jozef Szmigielski	JS Consulting Engineers
75.	Julian Whiston	Jones Lang LaSalle Hotels
76.	Jürgen Bruns-Berentelg	HafenCity
77.	Jürgen Horvath	HAG - Gesellschaft fuer Oekonomie und Technik GmbH
78.	Kacper Remisko	DTZ
79.	Karen Case	LaSalle Bank Chicago
80.	Keith McKinnell	Hong Kong University
81.	Kevin Augustyn	HSA Commercial
82.	Kirk Alter	Purdue University
83.	Kris James Wilson	The University of Melbourne
84.	Krzysztof Chuchra	Edinburgh World Heritage
85.	Kurt Schmeigel	DLZ Engineering
86.	Kurt Tahacan	REMAX Joker
87.	Larry Lund	Real Estate Planning Group
88.	Laura Peuhkuri	Imatra Region Development Company (KEHY)
89.	Lewis Tong	The University of Melbourne
90.	Louise Ellison	Investment Real estate Forum
91.	Lukasz Reksa	Polish Financial Supervision Authority
92.	Lukasz Skowronski	Global Development

93.	Magdalena Cicharska	Prestige Development
94.	Mara Cole	Bauhaus Luftfahr
95.	Marek Meluch	Bank Przemysłowo Handlowy
96.	Maria Woo	Professional Real estate Services Limited
97.	Mark A. Goodman	Mark Goodman & Associates
98.	Mark Weintraub	ULI
99.	Martin Field	The Urban Consortium
100.	Mary Ludgin	Heitman
101.	Maureen McAvey	Urban Land Institute
102.	Max Cookes	The University of Melbourne
103.	Michael Buckley	Columbia University
104.	Michael Cannon	Arch Consultants Ltd
105.	Michael Drew	Structured Development LLC
106.	Michael H. Newman	Golub & Co.
107.	Michael Wagoner	Bentall Kennedy
108.	Michelle Chenyan Huang	The University of Melbourne
109.	Miles Keeping	GVA Grimley
110.	Muhammad Najib Razali	Universiti Teknologi Malaysia,
111.	Nan Feng	The University of Hong Kong
112.	Nathan Najem	Meyer – Najem Construction
113.	Nicholas Patrick Browne	The University of Melbourne
114.	Nick Brooke	Professional Real estate Services Ltd.
115.	Nick Hudson	RICS Oceania
116.	Nick Loup	Grosvenor Asia
117.	Nick Nunnington	Higher Colleges of Technology
118.	Noah Shlaes	Grubb & Ellis Co.
119.	Patrick Reddin	Association of Building Engineers
120.	Paul E. Scales	Pacific Investments Asia Ltd
121.	Paul McNamara	PRUPIM
122.	Pedro Seabra	CBRE Richard Ellis
123.	Peter Stanczewski	Arch Capital Group
124.	Philip Hench	CB Richard Ellis Investors LLC
125.	Philip Whiting	PV Interiors

126.	Pierre Laconte	Foundation for the Urban Environment
127.	Piotr Filip	Jones Lang LaSalle
128.	Rachelle Levitt	Urban Land Institute
129.	Richard A. Wilson	Skidmore, Owings and Merrill LLP
130.	Richard Barkham	Grosvenor
131.	Richard Cline	Hometown America Communities Chicago
132.	Richard Reed	Deakin University
133.	Richard van Gelder	MVGM Bedrijfshuisvesting
134.	Robert Bach	Grubb & Ellis
135.	Robert Cox	Purdue University
136.	Robert Goldman	DLA Piper LLP
137.	Robert Pacult	Ameron Poland
138.	Roger Nissim	Sun Hung Kai Properties
139.	Ron Kobold	Matthei Colin Associates
140.	Rosemary Feenan	Jones Lang La Salle
141.	Sara Wilkinson	Deakin University
142.	Sarah Meritt	Pinsent Masons
143.	Sebastian Drapac	The University of Melbourne
144.	Stephanie Pater	Chicago Tribune
145.	Stephen Aguilar-Millan	The European Futures Observatory
146.	Stephen Barter	Grosvenor
147.	Stephen Brown	RICS
148.	Stephen Catena	Boca Raton Resort & Club
149.	Stephen Clarke	University of Aberdeen
150.	Steve Bickell	TBA
151.	Stuart Morley	GVA Grimley
152.	Sukhvir Kaur	Sangha Property Management
153.	Susanne Cannon	DePaul University
154.	Tatiana Spitsyna	KTH Royal Institute of Technology
155.	Teresa Fourcher	Skidmore, Owings and Merrill LLP
156.	Theresa Frankiewicz	Crown Community Development
157.	Tim Bennett	Kingston University
158.	Tom Ohlson	Grosvenor

- | | | |
|------|----------------|---|
| 159. | Ujval Vyas | Alberti Group |
| 160. | Ward Feste | Carlyle Group |
| 161. | Will Rowson | ING |
| 162. | William Poppei | De Paul University |
| 163. | William Renner | Hart Howerton |
| 164. | Xinyu Zhang | Tsinghua University |
| 165. | Xuan Li | University of Aberdeen |
| 166. | Y.C. Wong | Grosvenor Asia |
| 167. | Yang Cao | University of Aberdeen |
| 168. | Yenlien Kuo | National S&T Center for Disaster
Reduction |
| 169. | Zac Grant | Faber Maunsell |
| 170. | Zidi Zhao | The University of Melbourne |

Appendix 8 Sample schedule of the Futures workshop



BUILT ENVIRONMENT FORESIGHT 2030

The Sustainable Development Imperative

Futures Workshop

Monday 26th November 2007

RICS HQ

9.30 a.m. to 15.35 p.m.

Briefing Session:

09.30–10.00 Welcome and Introduction (Coffee)

10.00–10.45 Thought Provocateurs

Session 1 CLA:

10.45–11.30 Deconstruct the Sustainable and Responsible commercial real estate industry and Cluster Themes

11.30–12.15 Underlying Causes

12.15–12.30 Group Presentations

12.30–13.00 Analyses of Worldviews

13.00–13.15 Group Presentations

13.15–14.00 Lunch

Session 2 Scenarios:

14.00–14.45 Create Alternative Scenarios

14.45–15.00 Group Presentations

15.00–15.20 Policy Themes, Action Agendas, Turning Points

15.20–15.35 Group Presentations

End of Workshop

Appendix 9 CLA approach - procedure from London Futures workshop

(November 2007)

Introduction

Introduce the idea of driving forces, explaining that they will be examined at three different levels during the workshop.

In this futures workshop participants will generate a set of driving forces by exploring the problem space using a **layered analysis**. The layers explored are:

- 1. Symptoms**
- 2. Causes**
- 3. Worldviews**

The analysis will be carried out in the three ways:

1. A facilitator- led introduction carried out in plenary.
2. A brainstorming sessions carried out by participants in breakout groups.
3. A reporting session after each break out session, where the groups report in plenary, which will result in a list of key driving forces for the scenarios.

Procedure

Stage 1

“Symptoms”- Deconstruct/ Unpack the Sustainable and Responsible (CRB) Real Estate Industry and Cluster Themes

Before starting the session- put large sheets of paper on the wall and provide all participants with sticky notes and pens (Label the sheets- “Symptoms”)

1. Ask participants to brainstorm the issues they feel must be addressed under the Sustainable Development and CRB in the commercial real estate industry.

The aim of this stage is to focus on the symptoms (to list the problem areas within the subject concerned) of the sustainable development addressing the question of corporate responsible behaviour in the commercial real estate industry.

Example:

Incorporating CRB and sustainability into business strategies leads to reduced operating costs from reduced energy requirements.

2. Direct them to write their answers on the sticky notes and place them on the large sheets (1 answer is to be written on 1 sheet of paper).
3. Ask each participant to read out 2/3 descriptions that she/he would like to share with the group.
4. Group the descriptions into clusters of similar themes. Once this is done, depending on how many themes emerge, split the group into three groups and divide the themes between each group for stage 2 of the process.

The participants can be shown a list of questions in order to help them to unpack the trends:

- What do you understand under the term sustainability, as it relates to the commercial real estate industry?
- What issues concerning sustainable development through CRB must be addressed today?
- What are the main trends connected with sustainability and CRB facing the real estate industry?

Stage 2

“**Causes**”- identify underlying causes, using **STEEP** (Social, Technical, Environmental, Economic and Political) perspectives.

1. Ask each group to brainstorm and identify the underlying causes of their themes from phase 1, by answering the following questions:

Note: All questions can be considered together or can be answered one after the other.

Questions to answer:

- How and why did this cluster of themes arise?
- How are these themes addressed? And by whom?
- What are the underlying causes?

- What are the major trends identified through these themes?
 - What are the driving forces of change behind these themes?
 - Resulting from these themes, are there new factors ‘in the pipeline’?
1. Each group will then be asked to categorise their answers using the STEEP perspectives (if applicable).
 2. Direct each group to list their comments on the flipcharts provided in each breakout area.
 3. The three groups are then asked to move to the areas where they will hold their breakout session.
 4. Once 30 minutes is up, the participants will join together in plenary to discuss the results of their breakout session. Each group will nominate a rapporteur, who will in turn report on the groups’ list of driving forces issues and trends.

Examples:

“Legislation, regulation and penalties is the factor that makes developers consider energy efficiency when they produce commercial property.”

‘Faulty Towers’ (Gensler, 2006)

“Demand for environmentally friendly offices is increasing among occupiers.”

Environmental

Stage 3

“**Worldviews**”- Analysis of Worldviews, Cultures and Values.

1. Ask each group to continue brainstorming the themes from phase 1, except this time they will be asked to analyse their themes under worldviews, cultures and values. In doing this they will have to answer the following questions.

Questions:

- Who are the major players? Who talks and lobbies about this issue?
- What do they stand to lose or gain?
- What are their values?
- Who has most control over this issue?

2. As before, the three groups will be asked to move to the areas where they will hold their breakout session, direct each group to list their comments on the flipcharts provided in the each breakout room
3. After 45 minutes, the participants will join in plenary to discuss the results of their breakout sessions. Each group will report on its list of driving forces, by a nominated reportee.

Appendix 10 Sample of the strategic conversations invitation and questions

Strategic Conversation Invite – North America

REAL ESTATE FUTURES 2030:

The Sustainable Development Imperative

Dear ...

In collaboration with DePaul University, Purdue University and the Royal Institution of Chartered Surveyors Foundation, The Futures Academy at the Dublin Institute of Technology, Ireland, is currently conducting a two-year global research project on Real Estate Futures.

The general aim of the study is to conduct comparative research between the three global ‘spheres of influence’: Europe, Asia Pacific and North America, in order to identify the major forces of change affecting the built environment in general, and the specific issues and trends likely to affect the commercial real estate industry at a global, regional and local level. Ultimately, we intend to develop a number of propositions to guide global real estate professionals in addressing the myriad and complex challenges associated with sustainable development. We have so far conducted workshops and strategic conversations in Europe and Asia-Pacific - North America is the third and final strand of the project.

The Strategic Conversation is one of the primary techniques that we use during the research process in order to gain insights from leading authorities in the real estate field. On behalf of Professor John Ratcliffe, we would like to invite you to take part in a strategic conversation to discuss the future of the built environment, looking specifically at issues such as sustainability and corporate social responsibility and their importance for the commercial real estate industry over the coming decades.

Myself, and Gillian O’Brien, both Futures Academy researchers, will be in Chicago between the 2nd and 4th June. I realize it is extremely short notice but we would be delighted if you could take an hour out of your busy schedule to meet with us during this time. We can arrange to come to your office any time if that would suit better?

I look forward to hearing from you.

Yours sincerely,

Dominika Brodowicz

Doctoral Researcher
The Futures Academy,
Dublin Institute of Technology, Ireland

Questions:

1. What is your vision of sustainable building/ city
2. Is commercial real estate industry heading towards sustainability?
3. What has to happen to make sustainability more important for the industry?
4. Will the impulse come from government? Economy? Environment? Or Society?
5. Who is more active in terms of sustainable solutions- demand side or supply?
6. What kind of business opportunities do you see in sustainability?
7. Does your organization have sustainable/ green policy statements? How has this affected real estate decisions in your department?
8. Which dimension of sustainability do you consider as a driving force of change in your company/ among your clients/ commercial real estate industry?
9. What are the major drivers of sustainability in your sector of commercial real estate industry?
10. Will sustainability be a major issue or just one of the trends driving commercial real estate industry within next years?
11. How would you describe economic, environmental and societal dimensions of sustainability as/ in the commercial real estate industry context?
12. Which cities or states are leaders in terms of sustainable regulations, and executed projects?
13. Is sustainability a challenge or already reality and well established within the industry?
14. What the most common sustainable real estate solutions used/ provided in your company are?
15. Is sustainability a business imperative? Do you see proves of this in the industry in last 2-3 years?

Appendix 11 List of names and companies of participants of the BEF 2030 study

Participants in the strategic conversations held in London, Hong Kong, Miami and Chicago (between 2007 and 2009)

1.	Bob Thompson	RETRI Group
2.	Paul McNamara	PRUPIM
3.	Rosemary Feenan	Jones Lang La Salle
4.	Richard Barkham	Grosvenor
5.	Stuart Morley	GVA Grimley
6.	Miles Keeping	GVA Grimley
7.	Stephanie Pater	Chicago Tribune
8.	Richard A. Wilson	Skidmore, Owings and Merrill LLP
9.	Teresa Fourcher	Skidmore, Owings and Merrill LLP
10.	Jason Stanley	Skidmore, Owings and Merrill LLP
11.	Clint Bautz	Skidmore, Owings and Merrill LLP
12.	Nick Brooke	Professional Real Estate Services Ltd.
13.	Gary Lawrence	Urban Strategies Leader, Arup
14.	Douglas J. Voigt	Skidmore, Owings & Merrill
15.	Mark A. Goodman	Mark Goodman & Associates

Questionnaire respondents (names of experts who agreed to be listed)

1.	Amy Kong	Hong Kong Science & Technology Parks
2.	David Faulkner	Colliers, Consultancy and Valuation Asia
3.	Jittaporn Sriboonjit	Business School, Thammasat University
4.	Hongyu Liu	Institute of Real Estate Studies Tsinghua University
5.	Maria Woo	Professional Real estate Services Limited
6.	Anita Mitchell	Jones Lang LaSalle
7.	Nick Hudson	RICS Oceania
8.	Paul E. Scales	Pacific Investments Asia Ltd
9.	Philip Whiting	PV Interiors

10.	Julian Whiston	Jones Lang LaSalle Hotels
11.	Sara Wilkinson	Deakin University
12.	Professor Richard Reed	Deakin University
13.	John Goddard	J. Goddard & Co
14.	Colin Sutherland	Rawlinsons Ltd

Workshop 1 London (November 2007)

1.	Steve Bickell	TBA
2.	Stephen Brown	RICS
3.	Emer Byrne	DIT
4.	David Cadman	Upstream
5.	Rosemary Feenan	Jones Lang LaSalle
6.	Martin Field	The Urban Consortium
7.	Chris Goodier	Loughborough University
8.	Zac Grant	Faber Maunsell
9.	Angus McIntosh	King Sturge
10.	Sarah Meritt	Pinsent Masons
11.	Brenna O’Roarty	RREEF
12.	Bob Thompson	Retri Group
13.	Arjen van den Berg	DSI
14.	Mark Weintraub	ULI
15.	Andrew Wood	ANNEX 360

Workshop 2 ULI European Sustainable Development Council, Paris (February 2008)

1.	Stephen Barter	Grosvenor
2.	Bill Boler	Business in The Community
3.	Jürgen Bruns-Berentelg	HafenCity
4.	Greg Clark	Organisation for Economic Co-operation & Development
5.	Louise Ellison	Investment Real estate Forum

6.	Jacopo Della Fontana	Design 2 Users
7.	Blair Hagkull	Jones Lang LaSalle
8.	Jürgen Horvath	HAG - Gesellschaft fuer Oekonomie und Technik GmbH
9.	Esther Howe	URS Corporation Limited
10.	Despina Katsikakis	DEGW
11.	Pierre Laconte	Foundation for the Urban Environment
12.	Rachelle Levitt	Urban Land Institute
13.	Maureen McAvey	Urban Land Institute
14.	Angus McIntosh	King Sturge
15.	Helen Ng	Acumen Fund
16.	Gerald Parks	Lehman Brothers
17.	Andrea Christie Pizzacconi	Christie Company
18.	Patrick Reddin	Association of Building Engineers
19.	William Renner	Hart Howerton
20.	Will Rowson	ING
21.	Pedro Seabra	CBRE Richard Ellis
22.	Bob Thompson	RETRI Group
23.	Mark Weintraub	Mark Weintraub Architecture & Design LLP

Workshop 3 Hong Kong (July 2008)

1.	Keith McKinnell	Hong Kong University
2.	Alex Darvell	Hong Kong University
3.	Anais Felicia Johanna Cosneau	Beijing Foreign Studies University
4.	Zidi Zhao	The University of Melbourne Royal Parade
5.	Chun-Kit	The University of Melbourne Royal Parade
6.	NanFeng	The University of Hong Kong
7.	Chi Kin	Law Hong Kong Land
8.	Hwei Jin Keow	The University of Melbourne
9.	Michelle Chenyan Huang	The University of Melbourne
10.	Eugene Kwan Fung Chan	The University of Melbourne

11.	Kris James Wilson	The University of Melbourne
12.	Nicholas Patrick Browne	The University of Melbourne
13.	Sebastian Drapac	The University of Melbourne
14.	Max Cookes	The University of Melbourne
15.	Lewis Tong	The University of Melbourne
16.	Gene Taylor	The University of Melbourne
17.	Jin Lee	Tsinghua University
18.	Xinyu Zhang	Tsinghua University
19.	Bessie Feng Xu	Tongji University
20.	Daisy Chong Huang	Tongji University
21.	Bernadette Lau	Colliers International
22.	Yang Cao	University of Aberdeen
23.	Stephen Clarke	University of Aberdeen
24.	Eseosa Ekhaguere	University of Aberdeen
25.	Jim Goudie	University of Aberdeen
26.	Bo Li	University of Aberdeen
27.	Xuan Li	University of Aberdeen
28.	Jacques-Olivier Zirah	University of Aberdeen
29.	David Canavan	University of Aberdeen

Workshop 4 Chicago (June 2009)

1.	Kirk Alter	Purdue University
2.	Robert Cox	Purdue University
3.	Susanne Cannon	DePaul University
4.	Brad Benhart	Pepper Construction
5.	Brian Israel	River North Residents Association
6.	Bradley Karvasek	Equity Residential
7.	Larry Lund	Real Estate Planning Group
8.	Anthony Goldsby	Walsh Group
9.	Ujjval Vyas	Alberti Group
10.	Anthony Najem	Meyer – Najem Construction
11.	Antone Najem	Venture Real Estate

12.	Nathan Najem	Meyer – Najem Construction
13.	Michael Cannon	Arch Consultants Ltd
14.	Mary Ludgin	Heitman
15.	William Poppei	De Paul University
16.	Bob Pratt	Pratt Design Studio
17.	Jeff Janicek	Mortensen Construction
18.	Ron Kobold	Matthei Colin Associates
19.	Barbara Matthopoulos	Chicago Association of Realtors
20.	Brian Pulver	Weiss Jenning Elsner
21.	Kevin Augustyn	HSA Commercial
22.	James Shilling	DePaul University
23.	Noah Shlaes	Grubb & Ellis Co.
24.	Robert Goldman	DLA Piper LLP
25.	Kurt Schmeigel	DLZ Engineering
26.	John R. Caswell	Government Services Administration
27.	Ward Feste	Carlyle Group

Appendix 12 Abstract of the Global Real Estate Scenarios 2020 (The Futures Academy and King Sturge 2001)

“Lords of Misrule”

Social reaction to over rapid change

- ❑ Socio-political backlash against the forces of change.
- ❑ Regressive developments in institutions, failure of cohesion amongst the wealthy world and a dislocation in the developing nations.
- ❑ A world that moves towards increasing instability.

It is a ‘fortress world’ where the global market boom remains highly concentrated. Fewer than two dozen developing nations benefit to any significant degree from private investment, while in more than 70 countries incomes are lower than they were in 2000. Islands of prosperity co-exist within an ocean of poverty and frustration. Economic stagnation spreads as wealthy enclaves devote ever more resources to maintaining security and stability. Inevitably, there is growing conflict between rich and poor, with a future threat of escalating violence and social disorder, a rising tide of illegal immigration washes around the world. Furthermore, the dark side of capitalism is all too evident in the sweatshops and horrendous pollution of industrialising Asia, and in the expanding popularity of gated communities in the United States. Europe, however, remains as a relative haven of comfort and security – but at a high economic cost. Nevertheless, the disparity of wealth is more and more skewed and severe social upheaval results. Global criminal organisations operate with seeming impunity, corrupting many developing nations, while new and more deadly forms of terrorism proliferate.

“Bazaar”

Complexity managed by ‘marketising’ decision processes

- ❑ New technologies rapidly change the fundamental principles by which industry and commerce are structured.
- ❑ Social and governmental institutions are weakened at the national and international level.
- ❑ Industrial nations are fragmented into many differentiated and competing sub-national regions and interests.

It is a ‘market world’ where the United States extended economic boom shows that free market policies, corporate restructuring and entrepreneurship offer a model for the rest of the world leading to increased global market integration, unprecedented technological innovation, pressures for independence of thought and action, and rising standards of literacy in most parts of the world. Free market reforms have moved governments everywhere to downsize, deregulate and privatize. The pace of innovation breeds now opportunities at astonishing speed. Generally, the thesis is: let markets work, turn loose the private sector, break down the barriers to free trade, and all will be well. Sooner or later, rapid economic growth and increasing prosperity will happen in virtually every region of the earth. The rising tide floats all boats.

“Socratic Systems”

Harnessing the knowledge economy

- ❑ Commercial and institutional renewal accelerates across the developed world.
- ❑ Policy-making and decision-taking become increasingly delegated and expert.
- ❑ Institutional improvements worldwide facilitate sustainable development.

It is a ‘transformed world’ where social and economic change gives rise to enlightened policies and voluntary actions that shape or supplement market forces. Civic society has the power to frame social and political agendas; there has been the ‘greening’ of a growing number of global corporations; and the imaginative use of new technologies has expanded communications networks and services world-wide. There is a trend towards a more peaceful, equitable and environmentally stable world. Greater access to information exists, power is more widely shared, new grass roots coalitions shaping what governments and institutions do have sprung-up, and the form of governance has generally been broadened. Communities make use of market forces and private enterprise, but align free market forces with social and environmental goals, accepting economic competition but not losing sight of the need for making deliberate social choices and meeting basic human needs.

Appendix 13 Abstract of the research paper “Real estate industry scenarios: the sustainable development imperative”

Submitted, peer-reviewed and presented by the author of this thesis at the ISDRS conference in Utrecht, July 2009



Author Brodowicz Dominika, The Futures Academy, Dublin Institute of Technology, Ireland

Title: “Real estate industry scenarios: the sustainable development imperative”

Topic: Track 1B - Long term change towards sustainable societies: scenarios, forecasting and backcasting

Keywords: real estate industry, scenarios, sustainable development

Abstract text

Purpose - One of the most significant challenges facing the real estate industry in the next decades is the shift towards sustainability. Therefore the purpose of the paper is to consider the possibilities of use of scenarios planning tool to investigate the challenge of sustainable development, with a specific consideration of European and Asia- Pacific property industry future.














Design - The paper focuses on the scenario development process and discusses the primary research findings gathered by the Futures Academy (Dublin Institute of Technology) in the frames of the ‘Built Environment Foresight- Sustainable Development Imperative’ project.

Findings - Majority of approaches towards planning among real estate professionals are focused on short term and economic issues, which fail to address social and environmental aspects of sustainability. For this to change, a new mind-set is required

among property community worldwide. 'Futures' oriented approach, with an emphasis on scenarios planning tool, can enable real estate professionals to anticipate challenges laying ahead, and most importantly, to plan and act proactively while facing the challenge of sustainability.

Originality - Discussion concerning sustainable development cannot be further postponed by the real estate professionals. 'Futures Studies' tools can play a significant role in encouraging and facilitating a debate concerning efforts towards achieving sustainability goals in this industry.

Appendix 14 Copy of the results from the on-line survey

1. Are you familiar with the following methods? (multiple choice)			Create Chart	Download
		Response Percent	Response Count	
Scenario planning		90.1%	64	
Strategic conversations		31.0%	22	
Environmental scanning		42.3%	30	
Delphi survey		74.6%	53	
Prospective workshops		46.5%	33	
Causal layered analysis		2.8%	2	
None of them		2.8%	2	
			answered question	71
			skipped question	0
2. Did you use any of following methods in the planning processes in your company? (multiple choice)			Create Chart	Download
		Response Percent	Response Count	
Scenario planning		17.1%	12	
Strategic conversations		5.7%	4	
Environmental scanning		21.4%	15	
Delphi survey		7.1%	5	
Prospective workshops		0.0%	0	
Causal layered analysis		1.4%	1	
None of them		68.6%	48	
			answered question	70
			skipped question	1

3. Are you familiar with the following terms? (multiple choice)		Create Chart	Download
		Response Percent	Response Count
Forecast		95.8%	68
Trends extrapolation		35.2%	25
Foresight		91.5%	65
Prospective		19.7%	14
Futures studies		47.9%	34
None of them		2.8%	2
		answered question	71
		skipped question	0

4. In which real estate professions are 'future oriented' methods and methodologies required at most? (multiple choice)		Create Chart	Download
		Response Percent	Response Count
Asset and property management		64.2%	43
Appraisal/ valuation		25.4%	17
Consultancy and investment services		92.5%	62
Agency and Brokerage services		46.3%	31
Development/ Construction/ Architecture		73.1%	49
		Other (please specify) Show Responses	3
		answered question	67
		skipped question	4

5. What would be the advantage of using 'future oriented' methodologies such like Foresight or Prospective in the planning processes? (multiple choice)		Create Chart	Download
		Response Percent	Response Count
Development of various scenarios and a range of options supporting decision making processes		66.2%	47
Cooperation of various divisions and decision-makers in the processes		43.7%	31
Identification of new business fields and options (Increase of the innovation capacity of a firm)		71.8%	51
I have no opinion about this issue		14.1%	10
		Other (please specify)	0
		answered question	71
		skipped question	0

6. What would be the obstacle in applying 'future oriented' methodologies such like Foresight or Prospective as a planning tool in your business? (multiple choice) [Create Chart](#) [Download](#)

	Response Percent	Response Count
Qualitative character of the process	38.0%	27
Length and participatory character of the processes	46.5%	33
Ambiguity/ probability and predictability of the results	74.6%	53
I have no opinion about this issue	15.5%	11
Other (please specify)		0
answered question		71
skipped question		0

7. Would you recommend using 'future oriented' methodology such like Foresight as a planning tool in your company? [Create Chart](#) [Download](#)

	Response Percent	Response Count
Yes	59.2%	42
No	4.2%	3
I have no opinion about this issue	36.6%	26
answered question		71
skipped question		0

8. Please indicate which real estate profession from those listed below, you represent: [Create Chart](#) [Download](#)

	Response Percent	Response Count
Asset and property management	17.6%	12
Appraisal/ Valuation	2.9%	2
Consultancy and investment services	48.5%	33
Agency and Brokerage services	7.4%	5
Development/ Construction/ Architecture	23.5%	16
Other (please specify) Show Responses		15
answered question		68
skipped question		3

Please note that in case of Q7 the response number was 71. Surveymonkey system did not add 3 responses of academics (only academics without employment in the industry) to the overall number of participants and faultily assigned them to 'skipped question'. These 3 answers were registered among 15 answers in 'Other' group. Among them were 3 academics and 12 professionals with university/research centre employment (dual employment).

Appendix 15 Pearson's Chi-square test results

The test was applied in order to identify correlation between respondents' professions defined in question 8:

1. Asset and property management;
2. Appraisal/ Valuation;
3. Consultancy and investment services
4. Agency and Brokerage services;
5. Development/ Construction/ Architecture;
6. Other ...

and answer to Q1-Q7.

1. Q1 Dependency between respondent's profession and familiarity with the following methods: (multiple choice)

1. Scenario planning
2. Strategic conversations
3. Environmental scanning
4. Delphi survey
5. Prospective workshops
6. CLA
7. None of them

Q8 * Q1A Scenario planning

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	9.454 ^a	5	.092
Likelihood Ratio	8.433	5	.134
Linear-by-Linear Association	1.954	1	.162
N of Valid Cases	71		

0.092 > 0.05 results- no relation between the variables

Q8 * Q1B Strategic conversations

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	5.440 ^a	5	.365
Likelihood Ratio	5.706	5	.336
Linear-by-Linear Association	.579	1	.447
N of Valid Cases	71		

0.365 > 0.05 results- no relation between the variables

Q8 * Q1C Environmental scanning

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	11.170 ^a	5	.048
Likelihood Ratio	14.795	5	.011
Linear-by-Linear Association	.187	1	.665
N of Valid Cases	71		

0.048 < 0.05 results- there is a correlation between the variables

Q8 * Q1D Delphi survey

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	2.141 ^a	5	.829
Likelihood Ratio	2.574	5	.765
Linear-by-Linear Association	.159	1	.690
N of Valid Cases	71		

0.829 > 0.05 results- no relation between the variables

Q8 * Q1E Prospective workshops

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	3.891 ^a	5	.565
Likelihood Ratio	4.021	5	.546
Linear-by-Linear Association	.521	1	.470
N of Valid Cases	71		

0.565 > 0.05 results- no relation between the variables

Q8 * Q1F CLA

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	2.370 ^a	5	.796
Likelihood Ratio	3.132	5	.680
Linear-by-Linear Association	.081	1	.775
N of Valid Cases	71		

0.796 > 0.05 results- no relation between the variables

Q8 * Q1G None of them

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	3.269 ^a	5	.659
Likelihood Ratio	3.856	5	.570
Linear-by-Linear Association	.081	1	.775
N of Valid Cases	71		

0.659 > 0.05 results- no relation between the variables

2. Q 2 Did you use any of following methods in the planning processes in your company? (multiple choice)

1. Scenario planning
2. Strategic conversations
3. Environmental scanning
4. Delphi survey
5. Prospective workshops
6. CLA
7. None of them

Q8 * Q2A Scenario planning

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	2.078 ^a	5	.838
Likelihood Ratio	3.145	5	.678
Linear-by-Linear Association	.131	1	.717
N of Valid Cases	70		

0.838 > 0.05 results- no relation between the variables

Q8 * Q2B Strategic conversations

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	7.161 ^a	5	.209
Likelihood Ratio	6.856	5	.232
Linear-by-Linear Association	.464	1	.496
N of Valid Cases	70		

0.209 > 0.05 results- no relation between the variables

Q8 * Q2C Environmental scanning

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	5.589 ^a	5	.348
Likelihood Ratio	6.978	5	.222
Linear-by-Linear Association	1.634	1	.201
N of Valid Cases	70		

0.348 > 0.05 results- no relation between the variables

Q8 * Q2D Delphi survey

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	2.606 ^a	5	.760
Likelihood Ratio	4.009	5	.548
Linear-by-Linear Association	.721	1	.396
N of Valid Cases	70		

0.760 > 0.05 results- no relation between the variables

Q8 * Q2E Prospective workshops

Chi-square Tests

	Value
Pearson Chi-square	. ^a
N of Valid Cases	70

No statistics are computed because Q2E PROS WORK is a constant.= 0 answers

Q8 * Q2F CLA

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	1.168 ^a	5	.948
Likelihood Ratio	1.549	5	.907
Linear-by-Linear Association	.040	1	.841
N of Valid Cases	70		

0.948 > 0.05 results- no relation between the variables

Q8 * Q2G None of them

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	2.932 ^a	5	.710
Likelihood Ratio	4.428	5	.490
Linear-by-Linear Association	.197	1	.657
N of Valid Cases	70		

0.710 > 0.05 results- no relation between the variables

3. Q 3: Are you familiar with the following terms? (multiple choice)

1. Forecast
2. Trends extrapolation
3. Foresight
4. Prospective
5. Futures Studies
6. None of them

Q8 * Q3A Forecast

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	1.220 ^a	5	.943
Likelihood Ratio	1.528	5	.910
Linear-by-Linear Association	.124	1	.725
N of Valid Cases	71		

0.943 > 0.05 results- no relation between the variables

Q8 * Q3B Trends extrapolation

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	4.140 ^a	5	.529
Likelihood Ratio	4.363	5	.498
Linear-by-Linear Association	.118	1	.731
N of Valid Cases	71		

0.529 > 0.05 results- no relation between the variables

Q8 * Q3C Foresight

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	3.963 ^a	5	.555
Likelihood Ratio	4.293	5	.508
Linear-by-Linear Association	.043	1	.835
N of Valid Cases	71		

0.555 > 0.05 results- no relation between the variables

Q8 * Q3D Prospective

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	3.522 ^a	5	.620
Likelihood Ratio	4.249	5	.514
Linear-by-Linear Association	.690	1	.406
N of Valid Cases	71		

0.620 > 0.05 results- no relation between the variables

Q8 * Q3E Futures Studies

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	13.030 ^a	5	.023
Likelihood Ratio	14.196	5	.014
Linear-by-Linear Association	1.616	1	.204
N of Valid Cases	71		

0.023 < 0.05 results- there is a correlation between the variables

Q8 * Q3F None of them

Chi-square Tests

	Value
Pearson Chi-square	. ^a
N of Valid Cases	71

a. No statistics are computed because Q3F FUTUROLOGY is a constant.= 0 answers

4. Q 4: In which real estate professions are ‘future oriented’ methods and methodologies required at most? (multiple choice)

1. Asset and property management
2. Appraisal/ valuation
3. Consultancy and investment services
4. Agency and Brokerage Services
5. Development/ Construction/ Architecture
6. Other

Q8 * Q4A Asset and property management

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	3.561 ^a	5	.614
Likelihood Ratio	4.216	5	.519
Linear-by-Linear Association	1.488	1	.223
N of Valid Cases	67		

0.614 > 0.05 results- no relation between the variables

Q8 * Q4B Appraisal/ valuation

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	14.631 ^a	5	.012
Likelihood Ratio	15.363	5	.009
Linear-by-Linear Association	8.436	1	.004
N of Valid Cases	67		

0.012 < 0.05 results- there is a correlation between the variables

Q8 * Q4C Consultancy and investment services

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	16.580 ^a	5	.005
Likelihood Ratio	13.194	5	.022
Linear-by-Linear Association	.762	1	.383
N of Valid Cases	67		

0.05 results- there is a correlation between the variables

Q8 * Q4D Agency and Brokerage Services

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	3.665 ^a	5	.599
Likelihood Ratio	3.794	5	.579
Linear-by-Linear Association	2.705	1	.100
N of Valid Cases	67		

0.599 > 0.05 results- no relation between the variable

Q8 * Q4E Development/Construction/Architecture

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	5.208 ^a	5	.391
Likelihood Ratio	5.043	5	.411
Linear-by-Linear Association	1.520	1	.218
N of Valid Cases	67		

0.391 > 0.05 results- no relation between the variables

Q8 * Q4F Other

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	18.181 ^a	5	.003
Likelihood Ratio	10.644	5	.059
Linear-by-Linear Association	1.728	1	.189
N of Valid Cases	71		

0.03 < 0.05 results- there is a correlation between the variables, but the number of observations was lower than 5

5. Q 5: What would be the advantage of using 'future oriented' methodologies such like Foresight or Prospective in the planning processes? (multiple choice)

1. Development of various scenarios and a range of options supporting decision making processes
2. Cooperation of various divisions and decision-makers in the processes
3. Identification of new business fields and options (increase of the innovation capacity) of a firm
4. I have no opinion about this issue
5. Other

Q8 * Q5A Development of various scenarios and a range of options

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	7.263 ^a	5	.202
Likelihood Ratio	7.944	5	.159
Linear-by-Linear Association	.002	1	.966
N of Valid Cases	71		

0.202 > 0.05 results- no relation between the variables

Q8 * Q5B Cooperation of various divisions and decision-makers**Chi-square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	2.302 ^a	5	.806
Likelihood Ratio	2.407	5	.790
Linear-by-Linear Association	.213	1	.644
N of Valid Cases	71		

0.806 > 0.05 results- no relation between the variables

Q8 * Q5C Identification of new business fields and options**Chi-square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	4.813 ^a	5	.439
Likelihood Ratio	4.981	5	.418
Linear-by-Linear Association	1.943	1	.163
N of Valid Cases	71		

0.439 > 0.05 results- no relation between the variables

Q8 * Q5D No opinion**Chi-square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	9.292 ^a	5	.098
Likelihood Ratio	9.521	5	.090
Linear-by-Linear Association	1.000	1	.317
N of Valid Cases	71		

0.098 > 0.05 results- no relation between the variable

Q8 * Q5E Others

Chi-square Tests

	Value
Pearson Chi-square	. ^a
N of Valid Cases	71

No statistics are computed because Q3F FUTUROLOGY is a constant.= 0 answers

6. Q 6: What would be the obstacle in applying ‘future oriented’ methodologies such like Foresight or Prospective as a planning tool in your business? (multiple choice)

1. Qualitative character of the process
2. Length and participatory character of the processes
3. Ambiguity/ probability and predictability of the results
4. I have no opinion about this issue
5. Other

Q8 * Q6A Qualitative character of the process

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	3.547 ^a	5	.616
Likelihood Ratio	3.633	5	.603
Linear-by-Linear Association	.011	1	.917
N of Valid Cases	71		

0,616 > 0.05 results- no relation between the variables

Q8 * Q6B Length and participatory character of the processes

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	4.813 ^a	5	.439
Likelihood Ratio	4.981	5	.418
Linear-by-Linear Association	1.943	1	.163
N of Valid Cases	71		

0.439 > 0.05 results- no relation between the variables

Q8 * Q6C Ambiguity/ probability and predictability of the results

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	4.813 ^a	5	.439
Likelihood Ratio	4.290	5	.508
Linear-by-Linear Association	.138	1	.710
N of Valid Cases	71		

0.439 > 0.05 results- no relation between the variables

Q8 * Q6D No opinion

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	13.534 ^a	5	.119
Likelihood Ratio	12.775	5	.026
Linear-by-Linear Association	.452	1	.502
N of Valid Cases	71		

0.119 > 0.05 results- no relation between the variables

Q8 * Q6E Other

Chi-square Tests

	Value
Pearson Chi-square	. ^a
N of Valid Cases	71

a. No statistics are computed because Q6F Other is a constant.

7. Q7: Would you recommend using ‘future oriented’ methodology such like Foresight as a planning tool in your company? (single choice available)

1. Yes
2. No
3. I have no opinion about this issue

Q8 * Q7

Chi-square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	7.617 ^a	10	.666
Likelihood Ratio	8.940	10	.538
Linear-by-Linear Association	1.211	1	.271
N of Valid Cases	71		

0.666 > 0.05 results - no relation between the variables

Appendix 16 Crosstables results for Q8 and Q1C, Q3E, Q4B, Q4C and Q4F

Crosstable 1Q8 * Q1C- Environmental scanning

		Q1C- ENV SCAN		Total
		No	Yes	
Q8	Asset and property management	8	4	12
	Appraisal/ Valuation	0	2	2
	Consultancy and investment services	18	15	33
	Agency and Brokerage services	5	0	5
	Development/ Construction/ Architecture	10	6	16
	Other	0	3	3
Total		41	30	71

Crosstable 2 Q8 * Q3E Futures

		Q3E FUTURES		Total
		No	Yes	
Q8	Asset and property management	8	4	12
	Appraisal/ Valuation	0	2	2
	Consultancy and investment services	11	22	33
	Agency and Brokerage services	4	1	5
	Development/ Construction/ Architecture	12	4	16
	Other	2	1	3
Total		37	34	71

Crosstable 3 Q8 * Q4B Appraisal/Valuation

		Q4B APPR-VAL		Total
		No	Yes	
Q8	Asset and property management	6	6	12
	Appraisal/ Valuation	0	2	2
	Consultancy and investment services	26	7	33
	Agency and Brokerage services	5	0	5
	Development/ Construction/ Architecture	14	2	16
	Other	3	0	3
Total		54	17	71

Crosstable 4 Q8 * Q4C Consultancy and Investment Services

		Q4C INV SER		Total
		No	Yes	
Q8	Asset and property management	1	11	12
	Appraisal/ Valuation	1	1	2
	Consultancy and investment services	1	32	33
	Agency and Brokerage services	3	2	5
	Development/ Construction/ Architecture	3	13	16
	Other	0	3	3
Total		9	62	71

Crosstable 5 Q8* Q4F Other

		Q4F Other		Total
		No	Yes	
Q8	Asset and property management	12	0	12
	Appraisal/ Valuation	2	0	2
	Consultancy and investment services	33	0	33
	Agency and Brokerage services	3	2	5
	Development/ Construction/ Architecture	15	1	16
	Other	3	0	3
	Total	68	3	71

List of Publications

The following is a list of publications that have arisen from the research undertaken as part of the Doctoral Thesis.

Academic report:

Ratcliffe, J., Brodowicz, D., and O'Brien, G. (2009), *Built Environment Foresight 2030: Sustainable Development Imperative*, The Futures Academy, DIT, Dublin.

Corporate report:

Ratcliffe, J., Brodowicz, D., and O'Brien, G. (2010), *Built Environment Foresight 2030: Sustainable Development Imperative*, King Sturge and RICS Foundation, London.

Conference paper:

Brodowicz, D., (2009), *Real estate industry scenarios: the sustainable development imperative*, submitted and presented at *the 15th annual ISDRS conference: Taking up the Global Challenge*, 5-8 July 2009, Utrecht.