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## Building a Transition Game

Wolsink, Arnoud Derk Jan

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# Building a Transition Game



# Building a Transition Game

Corporate Social Responsibility and the airline industry

Arnoud Derk Jan Wolsink

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University of Groningen  
Science Shop of Economics, Management & Organization  
Coordinators: drs. E. Kamphuis and drs. F.J. Sijtsma  
Secretariat: H.W. Janssen  
Supervisory lecturer: dr. W. Jager  
Supervisor Science Shop: drs. F.J. Sijtsma  
Inquirer: Friends of the Earth Netherlands (Milieudefensie)

Address:

University of Groningen, Science Shop of Economics, Management & Organization  
PO box 800  
9700 AV Groningen, The Netherlands  
tel: 050-3633754  
fax: 050-3637337  
E-mail: [ebwinkel@rug.nl](mailto:ebwinkel@rug.nl)  
Internet: <http://www.rug.nl/wewi/eb>

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***Publisher's preface***

This report is the result of a project of the Science Shop of Economics, Management and Organization. The project ran in the years 2004-2005. It started with a request of Friends of the Earth - Netherlands (Milieudefensie) in Amsterdam, who were working on a project officially named 'Network and Capacity Building Air Travel and Climate Change', unofficially 'The sky is the limit'<sup>1</sup>.

Within this project there was a possibility to develop a board game around Corporate Social Responsibility and climate change in the airline industry. The board game should act as a communication instrument for different stakeholders with widely different 'mind frames': the broad aim of the instrument was to facilitate better informed debate among stakeholders around the main policy issues. The game had a specific interest in making some of the underlying economics involved in the airline industry capacity and network building more clear to a non-economically trained audience. Arnoud Wolsink picked up the challenge of developing such a game in combination with writing his master thesis, supervised by Wander Jager teaching at the Faculty of Management and Organisation and Frans J. Sijtsma of the Science Shop.

This Science Shop report not only presents the game as such but it also presents the theoretical and practical results of Arnoud's master thesis; including directions for future research.

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<sup>1</sup> This Friends of the Earth – Netherlands (Milieudefensie) project was sponsored by the Dutch 'VROM' – The Ministry of Housing, Spatial Planning and the Environment



***Preface from the author***

“Every new beginning comes from some other beginnings end” a phrase from a Semisonic song characterizing this period of my life. Finishing this thesis means entering a new period for me, and with it the ending of another one. What this new period brings I don’t know, and that’s the fun part. Knowing what you’re doing tomorrow, the day after tomorrow, next month or next year makes a person numb. And numbness can’t be an issue if you want to do something with your life and your world. Numbness makes us taking things for granted, and taking things for granted can cause neglect, neglect of ourselves, our world and the ones we love. What the old period brought I do now, lots of fun, lots of tears and mostly a lot of learning. Mom and dad, thanks for your patience the last couple of years. You always gave me space to make my own decisions and mistakes but in the meantime provided a steady base to fall back on when necessary which is fundamental for someone in this period of his life. Sophie, thanks for your company and friendship this last year. I enjoyed our discussions about contextual influences and graduation in general. It was nice to have someone around knowing what it’s like to be in the middle of a graduation project. Richard, thanks for your friendship and patience. You never seemed to get annoyed about me occupying your spell-check and desk. Wander, thanks for your support during and before this graduation project. There’s no better icebreaker than whiskey and guitars! I enjoyed having you as a supervisor. Hopefully we’ll see each other around in future projects. Friends and relatives, thanks for your support. Last but certainly not least, Loreen, thanks for being you. This graduation project costed a lot of time, energy, sweat and tears. But it also brought a lot of fun, experience and new insights. Hopefully you’ll enjoy reading my findings presented in this thesis.

Arnoud Wolsink, Groningen 2005



*Closing time, time for you to go out go out into the world.  
Closing time, time to turn the lights on over every boy and every girl.  
So gather up your jackets, move it to the exits, I hope you have found a friend.  
Closing time, every new beginning comes from some other beginnings end.*

Semisonic, Closing Time from the album Feeling Strangely Fine (1998)

## ***Executive Summary***

This thesis explores the potential of simulation models in the area of sustainability by using the exploration of the possibilities for a sustainability transition in the European airline industry as an example. The main goal of this research is the development of the earlier mentioned game. Therefore the reader must not expect to be presented with a valid and extensive market analysis of the airline industry on sustainable aspects. This thesis tends to develop a physical simulation game. The airline industry is merely functioning as a pool of information with possible input for the development of a simplified picture of reality.

When exploring the possibilities for a sustainability transition, an insight in various areas needs to be gained. A transition towards sustainability asks for the creation of one vision among the several actors participating in the process. Without this single vision a transition towards sustainability will be impossible for an industry and its context. The goal of this research is to develop an instrument that can contribute to the development of this shared vision by offering a means of gaining insight in to the dynamics of sustainability. In the development of an instrument that could contribute to the development of this shared vision several factors need to be taken in to account. These factors are the market situation, the political climate and consumer behavior. Implementation of these factors into an instrument asks for awareness and care regarding the complexity of the instrument. Making it too complex will make it inoperable. A transition occurs across various levels in an industry's context. This is based on the so-called multi-level perspective. This multi-level perspective describes this context which exists of: - technological niches, - technological regimes and a socio-technical landscape. Niches act as incubation rooms for radical novelties, technical regimes refer to the "semi" coherent set of rules in an industry and socio-technical landscape refers to a wider technology- external context. In the development of a game on sustainability it will be important to understand how the market situation, the political climate and consumer behavior are related to each other seen from this multi-level perspective. Therefore an insight needs to be created into the determinant factors in each of these areas.

Political parties, Unions and special interest groups are the factors of influence on the political climate, of which the political parties seem to be dominant. Different political parties can cause different political climates. This resulted in the characterization of four possible political climates which can be used in the formulation of a game on sustainability. These are a left-wing climate, a left-centre climate, a right-centre climate and a right-wing climate. These four different characterizations show that different issues are important in different political contexts. It will be important to take this into account in the development of an instrument dealing with sustainability. In left-wing Europe people are the most important sustainable issue, whereas in right-wing Europe profit is seen as a core factor. In both left-centre and right-centre Europe people, planet and profit issues are seen as important although planet seems to be slightly dominant in left-centre Europe whereas Right-centre Europe sees all three factors as equally important. Because the focus lies on different aspects of the triple bottom line in different political contexts, it can be assumed that different political climates bring different implications regarding sustainable issues to the airline industry. For instance the focus in left-wing Europe lies on the people aspect of sustainability. Policies are aimed at human rights and equality for instance. Airlines can be confronted with these implications in several ways. First in this political context airlines assumably will be confronted with these policies. Therefore they need to invest in their workforce for instance, to comply with these policies. Second, because our environment is socially constructed, also society most probably will be "people minded" in a left-wing political context. Therefore airline customers in a left-wing context might be more sensitive to an airline's conducts regarding people issues and asses according weightings to the factors important for them in their choice of behavior. These weightings will assumably be different in a right-wing political context, because in this context the focus lies on the economy or in other words, the profit aspect of sustainability. In this context the aspects of influence on consumer behavior will

assumably be subject to an economic focus. In addition this right-wing political context facilitates a strong competitive economy which in turn will bring other implications to the airline industry than in a left-wing political context. A right wing context might ask airlines to focus their investments on economic aspects in order to be able to survive in this competitive environment. In short different contexts most probably will provide different implications for the airline industry regarding political policies, and regarding consumer behavior.

The critical factors determining consumer behavior turn out to be one's context and needs. The way this needs are fulfilled depends on the individual's attitude and the social norm within a general social context. Attitude can be perceived as one's internal motivations to conduct a certain kind of behavior. Attitude is determined by the perceived probability that a certain consequence has a causal relationship with the actual behavior, and the valuation of this consequence. The social norm is determined by one's context. Because this thesis is dealing with the European airline industry, the context of the airline customers is perceived to be the political climate and the market situation of the European airline industry. To understand the internal driving forces of the airline industry customers it is important to distinguish different customer categories and asses their according factors of influence on attitude formation. Three airline businesses can be distinguished, namely: The leisure business, the business communication business, and the distribution business. Within these three business segments, several sub segments exist. Different types of customer groups have different needs. Therefore their behavioral driving forces differ and they assumably will react differently to different situations. It will be important to take this into account in the development of an instrument dealing with sustainability. For instance, it is assumable that the emergency traffic market will react differently to price changes than the routine perishable and routine non perishable markets because price is not a basic factor of influence on the attitudes of the emergency traffic customer, which is the case for both other markets. In the context of a thesis on sustainability it is interesting to note that environmental issues do not seem to be directly of influence on the attitudes of the various airline customer segments. But because next to attitudes the influence of social norm and context on behavior also is important, it can be assumed that developments this area on sustainability can be of influence on the behavior of the airline customer. In short it seems that environmental consciousness is no direct factor of influence on the behavior of the European airline customers, but theoretically could be an indirect one through contextual influences.

The determinant factors in the market situation are suppliers, buyers, new entrants, substitutes and direct competition. In the context of a graduation project it seemed to be extensive to include all the five factors mentioned above as active elements in the instrument subject to the goal of this. Because direct competition seems to be the most complex and important factor influencing the market situation, the choice is made to only include this factor as an active element in the instrument. The other four factors will be included in the instrument, although not as active elements but as fictive opportunities and threats to the direct competition. These four elements will be fictive and not based on empirical facts. Regarding the direct competition it will be important to understand which choices an airliner can make regarding entering markets and consequences of entering these markets. Airlines can choose to exploit different types of aircraft suitable for their choice of market. There are two types of aircraft, wide-bodied and narrow-bodied. Within these two families different configurations of interior exist. An airline can choose to fully exploit the economy class market or exploit the business market too, regarding passenger travel. Next to passenger airplanes cargo planes exist in the wide-body family. The narrow-body family does not seem to encompass an aircraft fully designed for cargo. The choice for interior determines which customer market is to be entered. And as could be seen in the section on airline customers, different customer groups have different demands. If the choice is made only to enter the leisure market, factors like safety turn out to be important. Therefore an airliner entering this market most likely will need to invest in measures communicating their perception of importance for safety and their efforts to guarantee this safety in order to reassure their

customers that their service is safe. However, if an airliner chooses to enter the cargo market, factors like professionalism can turn out to be of importance. Airliners entering this market most likely will be confronted with investments in specialized equipment and training of personnel in order to guarantee this professionalism to their customers. In addition it needs to be noted that the choices made by competition also will be of importance because direct competition turned out to be an important factor. If a competitor enters the market of an airliner, it means fewer customers for this specific airliner. Therefore it is not only about choosing your plane, it is about choosing a market with the accompanying strategies regarding investments and reactions to decisions of competition.

The political climate, consumer behavior and the market situation are reciprocally dependent and can influence each other in several possible ways.

The European political climate could be of influence on consumer behavior and the European airline market in several ways. First let's take a look at how the airline industry could possibly be influenced. First, as mentioned in the above, the philosophies of the political parties influence the role that businesses are allowed to play in a given country-market. Different political contexts could therefore offer different opportunities and threats to a business. This could be embodied in different policies and regulations that are of influence on the airline industry. Second, in case of conflicts regarding employees, unions could be of influence on the airline industry. The airline industry is subject to the outcomes of negotiations and agreements with unions on issues regarding employees. In a worst case scenario, disagreement or dissatisfactory outcomes of negotiations could confront the airline industry with strikes. Third, special interest groups could campaign against the airline industry. One could think of a campaign on kerosene taxation for instance. This brings us to the way in which the political context could influence the consumer or society in general. As will become clear by reading the according segment on consumer behavior, society is socially constructed. Necessary elaboration will follow in the according segment, but in short one could say that individuals are of influence on their context and their context is of influence on them. Therefore the political climate is of influence on the individuals living in it. Different political contexts therefore could have different influences on individuals. This could cause different kinds of behavior in different political contexts.

There is a reciprocal relationship between consumers and their context. Consumers build their own context through social construction and in turn this constructed context determines the consumption patterns of consumers. Therefore consumers are sensitive to their context but in turn this context is also sensitive to consumers. Changes in consumer behavior may therefore follow contextual changes or vice versa. Consumers can possibly influence their context in different ways. Individuals together socially construct society. Society determines which political parties determine the political context which in turn is of influence on the airline market. Society determines whatever is socially desirable. Whatever is socially desirable will determine the choice of product or service from a consumer perspective.

The airline industry could be of influence on the political climate and consumer behavior in a couple of ways. The political environment for instance could be influence by lobbying at political parties. In this way an industry can try to influence its own context. Consumer behavior can be influenced by the airline industry because control over the symbolic resources available for discursive elaboration of meanings and the social construction of identities lies mainly in the realm of the marketing strategies of corporate actors. Symbolic self completion is mainly pursued through the consumption of material goods imbued with symbolic meaning (Jackson, 2004). We show who we are by the things we buy. Symbolic resources provide a vital link between the external and the internal dialectics of symbolic identification. (Jackson, 2004). Through their products corporate actors therefore partly determine reality and in turn can influence the consumers' perception of identity.

This thesis describes how the findings presented in the above are molded into an instrument in the form of a game that can possibly contribute to the creation of one vision on sustainability. This resulted in a game in which players are confronted with several contextual scenario's to which they can react by making various types of investments and choices.

Several game sessions are conducted to test if the game shows potential to do what it is designed for. Based on these sessions it seems that in most cases the game does create an insight in sustainability and also facilitates discussion on this topic. Only in one session this seemed not to be the case. According to the findings of the various sessions played, the game seemed to function on its best with young and inexperienced people in the area of sustainability. In short, in spite of some minor aspects, the game seems to function properly within the possibilities of a non-computerized physical board game. Some shortcomings came to surface which could be ascribed to the limitations of this non-computerized physical form.

According to these findings adjusting the instrument's current form is recommended if it wants to have effect on a bigger audience. More variety, reality, complexity and speed are no option in the game's current physical form. Therefore it is recommended that future studies on this topic explore new and other ways in which a similar instrument can be embodied. A way in which the desired factors can be introduced in a similar instrument could possibly exist in the domain of computerized simulation. Partly digitalizing the game will offer the possibility to include larger amounts of empirical data. This in turn can be used to increase the realisticallity and variety of scenarios in the instrument. To prevent loss of the game's current strengths, personal contact and active participation, the human factor needs to stay involved in future simulation models.

In short, this research has shown that simulation shows potential to increase people's awareness of sustainability issues. To have an effect on a larger group of people than in the instrument's current form, future studies need to explore the possibilities for including more complexity, variety, reality and speed in future instruments on sustainability. A first possible future could exist in role playing games backed up by computerized simulation models. A second possible future could exist in the development of a "sustainable" type of forecasting models.

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## **Chapter 1 : Theoretical Background**

### *Introduction :*

One of the industries contributing to the greenhouse effect is the airline industry. According to recent assessments by the Intergovernmental Panel on Climate Change (IPCC) Nox emissions from aircraft are most important for the formation of tropospheric ozone. Tropospheric ozone in turn enhances radiative forcing, more commonly known as the greenhouse effect. Current trends of global emissions of greenhouse gases from air traffic show a substantial autonomous growth of about 140-190% for Nox and between 180-250% for other compounds between 1990 and 2015 (Olivier, 1995). Placed in a wider context this means that the contribution of the airline industry to the greenhouse effect will raise from 2% in 1992 to 3% or even 10% in 2050. To place these numbers into a perspective, the initial 2% airline industry emission contribution to the greenhouse effect represent a Nox emission of 82000 kton's (Olivier, 1995). In order to prevent this increase or even facilitate a decrease things need to change, people need to change and industries need to change. The airline industry will need to develop towards a more sustainable industry in order to limit or even diminish its negative effects on the environment. The necessary shift to more sustainable lifestyles can only come from a shift in our values because a transition is more than changing our behavior, it goes deeper, down to our beliefs (Elkington, 1997). A transition towards a sustainable airline industry is needed.

In the past, when concepts like intergenerational equity did not yet exist, it was a given fact that future generations would have the same opportunities and circumstances as current generations. In present days this is less certain. Every once and a while most of us are confronted with the greenhouse effect and the resulting climate changes. Just watch the news on a random day and you will have a pretty good change of hearing something about it. In the present of the so-called "global goldfish bowl" there seems to be a growing interest in environmental and social issues by current generations of students and other higher educated young people. A trend fed by the emergence of courses dealing with business ethics and initiatives by international student bodies like AIESEC and educational bodies like science shops at universities around the globe. Fitting in this trend, this research is conducted in the context of a graduation project at the University of Groningen, supported by the science shop of the faculty of economics and business and organization. The science shop was contacted by our client Milieudedefensie, a Dutch NGO on environmental issues. Milieudedefensie was concerned with the developments in the airline industry and its possible effects on our environment. With this in mind they asked for the development of a game on sustainability in the airline industry. Specific details of the design and functioning of the game were subordinate to just one wish, namely making it a physical board game like Monopoly for instance. How to make it, and which factors to include in it were up to the researcher. Because both the researcher and the supervisors of this research, Dr. Jager and Drs. Sijtsma are interested in the potential of simulation models in the area of sustainability, the client's demands offered the opportunity to explore this potential by molding it into a market example. As will become clear by reading this thesis, several factors are important factors of influence on the complexity and dynamics of sustainability. Simulation could possibly offer a means to grasp this complexity and dynamics by presenting a simplified picture of reality. Including an actual existing market in this game offers the possibility to provide input for modeling this simplified picture of reality. Therefore the reader must not expect to be presented with a valid and extensive market analysis of the airline industry on sustainable aspects. This thesis tends to develop a simulation game. The airline industry is merely functioning as a pool of information with possible input for the development of this simplified picture of reality. Therefore, the airline industry is functioning as an example.

*Game theory and Simulation:*

As stated earlier the goal is to develop an instrument on sustainability in the form of a game. This game intends to encompass determinant factors in the area of sustainability. An insight into the dynamics and complexity of sustainability could be created by means of simulation. Simulation could possibly contribute to an improvement in the understanding of a complex and dynamic subject such as sustainability. Efforts in the simulation area on sustainability already resulted in games such as SusClime and Interactive Scenario Scanner (Jager, 2000). There are three types of simulation which differ on their focus. There is simulation with the focus on: 1. describing a certain real world system, 2. decision rules of actively behaving simulated agents, 3. interactions between the behavior of many agents and an environmental system (Jager, 2000). Research is conducted on the context of environmental components and key stakeholders with their differing perceptions in order to bring a better understanding of how individuals behave and interact with the environment and how this may affect the dynamics of the system. According to this research, Role Playing Games (RPG) can bring this better understanding (Promburom, 2004). The results of this study showed that RPG facilitated collective learning processes of players and provided the understanding on complex space-and-time dynamic processes through a simple exercise (Promburom, 2004). Here a key issue comes to surface, namely keeping it simple. The more realistic a model is, the more complex it will be, the more unpredictably and opaquely the model will behave, and the harder it will be to validate the model empirically (Jager, 2000). A model too realistic and too complex will be impossible to operate or to play if presented in game form. Besides this limitation there are three other limitations, namely: 1. time difference between experiment and real life, 2. number of people are far less in experiments, 3. impact of consequence of choices differ from experiment to real life (Jager, 2000). Although some limitations exist, experimental gaming research shows potential in the area of the exploration of behavioral dynamics. Simulation research and empirical study can be considered as tools that can be mutually stimulating in exploring behavioral dynamics. Simulation can function as an explorative tool to search for issues that are promising for empirical study (Jager, 2000). Therefore it is important that one does not evaluate an experiment on the basis of its immediate economic success but on the basis of what has been learned about reaching the vision and its contribution to the process of social embedding (Geels, 2002). An instrument in the form of a game therefore could possibly contribute to the creation of one vision regarding sustainability among the actors of the European airline industry by offering a simplified way to create an insight into the dynamics of sustainability in this industry. It could also possibly create a platform for discussion on future topics of research. Therefore an instrument on sustainability could be of use in the proces of agenda setting. Agenda setting is the process in which social problems for attention are selected, agendas are established, and priorities for action are determined because the list of problems is endless and varied. Setting priorities and acting on an agenda of social issues are among the most important political activities undertaken within social systems, and agenda setting may be conceptualized as active political participation (Berger, 2001).

*A brief history of civil aviation :*

The beginning of last century brought the emergence of commercial flying. With the first line service for passenger transportation being erected in 1919 between London&Paris. Because of the business not being profitable yet, the main income of European airliners consisted of direct subsidies (Geels, 2002). Developments in the US caused a growth of commercial aviation after the 1930s. First new airframes were safer and faster which made users more secure. Second, also the US airliners started to get government support. Third, the long distances on the American continent created a market for innovative planes with ever-longer ranges. Fourth, cultural enthusiasm and symbolic meanings played a role because flying was perceived as modern, and the thing of the future. A fifth reason was an emerging user market consisting of businessmen and politicians. Although air travel gained travelers in the late 30s,

fear for flying and discomfort during flights caused the general public still to choose for train instead of plane (Geels, 2002). The 1940s were a turbulent period for the airline industry as well as for the rest of the world. World War 2 facilitated developments in military aviation regarding propulsion, plane size, speed etc. Developments which turned out to be applicable on civil aviation after this world war. The focus of the American airline industry was on the production of heavy bombers in WW2. Because of this they could possibly dominate the post-war market because they would be well placed to produce large civilian aircraft. A reaction from Europe was the creation of the Brabazon Committee. According to this committee Britain should focus its R&D capabilities on a few large-scale civilian projects. Another rather important development was the development of jet engines, both on the German, as the allied side. An important outcome of WW2 was, that its developments created an awareness of aviation's ability to diminish barriers of time & distance. This perception was embodied by the introduction of the first civil jetliner in 1952, the Comet, a result of the Brabazon initiatives. The development of four-engine aircraft in WW2 made flying more comfortable because of the possibility of flying at higher altitudes. Airlines began non-stop, coast-to-coast flights, making global flight a reality. Passenger numbers at these transatlantic flights were stimulated by the introduction of tourist class tickets, a ticket 32% cheaper than ordinary tickets. Flying became seen as normal (Geels, 2002). In the late 50s international air travel demand was stimulated by another new type of ticket, the Economy class ticket. The price of this ticket was 20% below the price of a tourist class ticket. This ticket made air travel accessible to new user groups. Air travel no longer was an elitarian occupation, but became a mass mode of transportation, flying for the masses became a fact. More travelers mean the need for more or bigger planes. The introduction of bigger and more efficient planes made scale economies possible, lowering operating costs. The introduction of the Boeing 747 for instance not only was a technical, but also an economic breakthrough. The introduction of bigger planes in turn made flying cheaper and truly accessible for the masses in the 1970s (Geels, 2002). Starting out as an area for the dare devils and adventurers among us, air travel evolved into a mass mode of transportation during the last century. By now, air travel is seen as a normal means of transportation, just as normal as the car or train. The emergence of low cost carriers like Easy jet in the mid 1990s made air travel truly accessible for all of us. Air travel is no longer only affordable for businessmen and politicians as was the case in the early days, but now can be afforded by every average income earner.

### *Sustainability :*

But what is sustainability? Several definitions exist. Looking it up in the dictionary results in the following definition:

#### **sus-tain-able**

Pronunciation: s&s-'stA-n&-b&l

**1** : capable of being [sustained](#)

**2 a** : of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged <*sustainable techniques*> <*sustainable agriculture*>

**b** : of or relating to a lifestyle involving the use of sustainable methods <*sustainable society*>

- **sus-tain-abil-i-ty** /-'stA-n&-'bi-l&-tE/ *noun*

The word sustainable has its origins in the old Roman word *sus-tenere* which means to cope, being able to resist internal and external pressures (de Vries, 2004). The modern term sustainability has its origins in the ecological sector. The main idea was that sustainable exploitation of natural resources encompasses that one can not exploit more from a natural resource than its natural regeneration (de Vries, 2004). According to the Brundtland report, Our Common Future, named after the 1987 prime minister of Norway Gro Harlem Brundtland, sustainable development is defined as a development that meets the needs of the present world without compromising the ability of future generations to meet their own

needs (Elkington, 1997). This report was an example of the growing awareness of resource depletion and climate change.

#### *Climate Change Awareness :*

Climate change probably already occurred 2 to 3 thousand years ago by deforestation in the Mediterranean area although at that time the effects were perishable. The more the line of history reaches the present, the more the role of humans in change and development of the global climate becomes clear. The use of fossil fuels at the current level will almost certainly lead to a climate change at a rate not seen since the existence of human kind, nature is forced back at a growing rate (de Vries, 2000). Resource depletion awareness emerged in the 18<sup>th</sup> century, this was at that point in time due to self interest because resource depletion meant that limits to resource extraction existed (Jager, 2000). In 1972 the Club of Rome presented their report "Limits To Growth". In this report a computer model showed that future exponential growth of humans and goods was uncontrollable. One way or another human kind would be forced to stabilize the material and energy flows. Since the publication of this report analyses of possible futures for human kind emerged, the Brundtland report earlier mentioned being one of these initiatives (de Vries, 2000).

#### *Business and sustainability :*

Corporate Social Responsibility (CSR) and Corporate Social Performance are phenomena that show how business life is dealing with these sustainability issues. CSR can be defined as "the obligation of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society". CSP can be defined as "a business organizations configuration of principles of social responsibility, processes of social responsiveness and policies, programs and outcomes as they relate to the firm's societal relationships" (Broekhof, 2002). In short CSR and CSP are rather the same; they deal with the degree of companies' awareness of being part of a larger society and the accompanied responsibilities.

But companies remain companies; their reason for existence is making profit. Without making a profit companies simply can't survive. Therefore a company that is concerned with the sustainability issue needs to take three factors in to its considerations. These factors are people planet and profit, the so-called "triple bottom line" or the 3 p's. Society depends on the economy and the economy depends on the global ecosystem, whose health represents the ultimate bottom line (Elkington, 1997). CSR can be seen as an opportunity, not as a treat because environmental constraints drive innovation and as a result eco- efficiency (Broekhoff, 2002) (Elkington, 1997). In short, these three factors are all reciprocally interdependent. Therefore a sustainability transition only takes place if the three factors are in balance (Dirven, 2002).

#### *Transitions :*

If sustainability is what we want, how do we get there? Regarding this question, transition theory might turn out to be useful. A transition can be seen as a fundamental change in a current situation. A transition is a process of change from one state or form to another. Both the start and end of the transition will have internal characteristics which give them some kind of stability, making it recognizable as a particular state or form (Geels, 2002). A transition, for example, is the move from propeller aircrafts to jet-engined aircrafts, or to use a sustainability example, the shift from a world with CFC's to a world without them. Because a transition asks for a change of mind, not just a change of behavior it is rather complicated and complex. History tells us that in a transition a lot of 'old-world' actors find themselves unable to adapt to their new environment after a transition. An example in this case is the shift from sailboats to steam-engine powered boats. A lot of the 'old-world' ship-yards were

unable to adapt to this new world of the steam engine and simply ceased to exist. This phenomenon is called “missing the wave”, meaning that established companies may miss the wave of newly emerging technology, because they hold on too long to the old technology (Geels, 2002). At least five reasons explain why firms stick to known technologies, namely: 1. cognitive routines, perceptions and frameworks, 2. organizational routines and organizational rigidities, 3. sunk costs, 4. it takes time to acquire new knowledge and build up competencies, 5. main customer preferences (Geels, 2002). Sometimes old technologies fight back and are improved in order to stay competitive against new technologies. This phenomenon is called “the sailing ship effect” referring to the way in which sailing ships were improved when they were challenged by steamships. To increase their speed, more masts and sail were added to sailing ships, and the hulls were redesigned (Geels, 2002). Because of the deep changes accompanied by a transition, a transition can not be directly coordinated. But it is possible to influence the process by creating a climate that leaves room for social developments (Dirven, 2002). Transitions are difficult to manage because they are open, uncertain and complex, involving multiple social groups, dynamics at multiple level, and co-evolution between heterogeneous elements (Geels, 2002). In order to enable a sustainability transition, transparency, long sight and a better coordination between efforts of governments, businesses, campaigners and citizens in the area of sectoral and national sustainability targets and aspirations is needed. A sustainability transition will not be possible without public understanding and support and even the best companies will only be sustainable when the institutions and markets surrounding them have been redesigned to support and promote sustainability (Elkington, 1997). An area which may be helpful to look at for understanding transitions in general is the area of technological transitions. Technological transitions can not be understood merely looking at the emergence of novelties. Transitions occur in a wider context. The so-called multi-level perspective describes this context which exists of: - technological niches, - technological regimes and a socio-technical landscape. Niches act as incubation rooms for radical novelties, technical regimes refer to the “semi” coherent set of rules in an industry and socio-technical landscape refers to a wider technology- external context. Transition processes occur because of linkages between processes at the different levels, meaning that circumstances at the 3 levels match in such a way that they provide for opportunities for a transition to occur. Although processes at different levels can converge and create opportunities for regime change, the actual linkages always need to be made by actors in their cognitions and activities (Geels, 2002). These findings show the actual complexity of transitions. It is important to understand that transitions do not just occur in the domain of a mere individual or industry, but in a wider social context. There are two routes in Technological transitions which represent 2 extremes with possible intermediate positions. (Geels, 2002):

1. Technological substitution in mainstream markets precedes wider co-evolution processes on other dimensions of the ST-regime (technology push). At the regime level there are 2 alternating phases: periods of incremental change and periods of ferment.
2. Wider co-evolution processes in the ST-regime precede technological substitution in mainstream markets. At the regime level there are 4 phases: a) heating up, b) increasing technical variation, uncertainty, wide experimentation, c) cooling down, d) stabilization of new ST-regime.

#### *Cooperation and transition actors* :

The degree of trust between a corporation or industry and their external stakeholders is likely to be a key factor determining their long-term sustainability (Elkington, 1997) (Dirven, 2002). In short a sustainability transition must be made possible by joined forces, not by one single actor because CSR issues must be dealt with at the level of an entire industry, not at the level of the individual company (Broekhof, 2002). This means that actors involved in a sustainability transition will come from various areas, areas on which further elaboration will

take place in another segment of this text. When a moral issue like sustainability is not specific for a certain company, but concerns a whole industry, competition neutral solutions are in place (Jeurissen, 2000). The fact that a transition is a cooperative process makes that the sustainability transition can not be coordinated top-down. New ways of coordination and organization are needed and thereby other roles and ways of conduct are desired from the actors involved. Businesses must invest in the development of sustainability trying to maximize the coherence of the 3 p's. Universities and other research centers need to invest more in multi, inter and transdisciplinary research and education, thereby creating the possibility of more intense cooperation between researchers and other actors. Non-governmental organizations (NGO's) will need their own transition from one-issue towards multiple-issue defenders (Dirven, 2002). In the sustainability transition business will play a leading role whereas governmental bodies will be both actively participating in the transition process as well as facilitating the process. The developments in Europe regarding the European Unification are therefore rather interesting for a possible transition. This unification might make general Europe-wide agreements possible regarding the facilitating role of governments in the transition process. Cooperation between the several actors in the airline industry is a key issue in the sustainability transition. If this cooperation is not achieved the transition will possibly become impossible. This need for cooperation lies in the fact that CSR related issues could be seen as the result of underlying forces. In the global world a shift can be seen in the balance of power between business life, governments and society (represented by NGO's). This shift is accompanied by a certain risk that could hinder the sustainability transition. This risk is that CSR represents a site of contestation for the right to determine social objectives and the funding of these objectives. Also at the international level CSR represents a site of political contestation. On top of this the legitimacy of NGO's is questionable because they may be influenced by their dependence on business and governments (Michael, 2003). In short, CSR can lead to disunity and power struggles at several levels of society. Therefore a transition will only be possible if a shared vision of all actors involved in the transition is developed.

*The need for a shared vision :*

Communication about, and convergence of the different perspectives and motives from which one looks at a problem is an absolute criterion for being able to work at a joint direction of solution (Dirven, 2002). If this joint vision is not achieved, individual interest will possibly dominate the shared interest. If this is the case, CSR might be used as an instrument to achieve these individual goals in stead of the shared societal goal which CSR idealistically pursues. The development of a shared vision can also contribute to improved understanding by the several actors involved on each others ways of thinking and ways of behaving. This understanding of each others behavior is essential because in sustainability partnerships dismissing actual or potential players as irrational closes the mind (Elkington, 1997). Not understanding each other will therefore hinder the sustainability transition to occur. The importance of a shared vision and an understanding of each others behavior asks for the development of an instrument that will contribute to the development of such a shared vision and mutual understanding.

*Two factors influencing sustainable behavior :*

As stated above the role of business is a leading one according to transition theory. Therefore it will be important to determine the factors influencing business conduct regarding the sustainability issue. The question regarding this point is what does the airline industry need to take into account when fulfilling the role of the transition leader and why?

Two factors seem to be important for a company or industry in general when assessing the extent to which it can do business in a CSR way. Both the intensity of competition in an industry and the strength of the moral obligations are factors that influence the extent of CSR

behavior. A company needs to find a balance between its continuity and its obligations towards its stakeholders (Jeurissen, 2000).

### *Stakeholder relationships* :

First let's take a look at these moral obligations mentioned above. The incredible speed at which communicative technologies developed during the last century, and are still developing now, increased the availability and accessibility of knowledge and information. In this age a person in the Netherlands can be fully aware of the happenings on the other side of world, what happened in Australia last Tuesday and what the weather will be like in Mexico next Saturday. We live in a global goldfish bowl. This emergence of accessible information and knowledge also has some major implications for national and international industries. Business can not be conducted in secrecy anymore like it was possible at the beginning of the last century. An oil spill of some western organization can not be covered up like in the past but will most probably be known by the organizations stakeholders and shareholders in a matter of days or even hours. This increasing transparency of the world means that business will be expected to assume greater social responsibility than hitherto (Ranganathan, 1998). This increasing transparency asks for a more intensive and effective communication with the actors that are affected by an organizations or industry's activities, the so-called stakeholders. Critical external stakeholders are customers and the community, which interest are attended for by NGO's (Waddock, 1997). This distinction between customers and members of the community is essential although it might look strange at first hand. Although customers are also members of the community, they act differently when fulfilling the role of customer than when solely fulfilling the role of community member. Moral expectations of society in general do not always converge with the demands placed upon an industry by its market and this market has a limited willingness to make sacrifices for sustainability (Broekhof, 2002) (Jeurissen, 2000). Stakeholder interests are a crucial factor in the sustainability transition. No company, industrial sector or national economy will succeed in defining and meeting its triple bottom line responsibilities and targets without developing much more extensive stakeholder relations and partnerships than would have been the case even in the recent past (Elkington, 1997). The involvement of stakeholders in the activities of a company or industry will improve the chance of continuity and of a strong performance of this company or industry (Waddock, 1997) (Elkington, 1997). As stated earlier, trust between a company or industry and its external stakeholders is essential for a transition towards sustainability. Communicating effectively with these stakeholders is a powerful way of building trust and loyalty and thereby contributing to business performance (Wheeler, 2001). It is in a companies or industry's interest to promote involvement of its stakeholders because a positive correlation exists between a companies or industry's CSP and its financial performance and vice versa (Waddock, 1997). If a company or industry is performing well on CSR issues this will increase its financial performance. An improvement of a company's or industry's financial performance in turn will increase the possibilities for CSR behavior which again will improve financial performance. In this way a company or industry can be caught in a positive visual circle and CSR can be seen as a way of ensuring a companies or industry's future. Some argue that factors like research and development (R&D) are increasing a companies or industry's performance, instead of CSR. If R&D has a positive impact on firm performance, then the effect on financial performance of any variable positively correlated with R&D will be overestimated. R&D, CSP and financial performance are positively correlated (McWilliams, 2000). Because of this positive correlation between investments in R&D and CSP the conclusion could be drawn that it are these R&D investments which are increasing financial performance and not the fact that a company or industry wants to do business in a CSR way. One could disagree with this when seeing R&D as an instrument of CSR or CSP. If a company or industry for whatever reason wants to perform well on social issues it will make investments to achieve this goal. A possibility could be that a company or industry decides to invest in R&D to develop processes or products that will contribute to the achievement of this goal. In this case it is the CSR way of thinking of a given company or



industry that made the investments in R&D and eventually increased financial performance and therefore stakeholder communication remains a crucial factor both for the sustainability transition and business performance. Although several companies started to experiment with stakeholder communication during the last decades, there still is a step to take. The evolution of the role of stakeholders will require companies to develop much more inclusive ways of handling stakeholder dialog, focused on multi-way dialog not simply one-way information flows from the company (Elkington, 1997). The development of the earlier mentioned instrument could contribute to the fulfillment of this need.

#### *Market situation :*

Another factor influencing CSR behavior is the degree of competition mentioned above. The situation is of influence on CSR behavior of companies or industries. The characteristics of a certain industry is a factor that is of influence on the extent to which a company or industry can perform well on CSR issues (Waddock, 1997). There are two extremes regarding CSR possibilities in an industry. One extreme is that in an industry with fierce competition, financial space for investments in sustainability is small or even lacking. The other extreme situation is that in an industry with very weak competition, pressure on companies to fulfill customer CSR expectations is rather weak from a strategic point of view (Jeurissen, 2000). The latter does not mean that companies can just decide to terminate their CSR related initiatives because also in a market with weak competition a company needs to deal with a lot more stakeholders than only customers. Competition both offers opportunities, but also limitations to CSR behavior. An opportunity is that in the global village of a certain sector, competitors already know each other because of made agreements in the past on limitations or other measures on competition. These networks can be extended towards joint CSR initiatives (Sijtsma, 2002). A limitation is the earlier stated fact that the more fierce competition in a certain sector is; the less room there is for CSR behavior. Pressure from competition is one of the most important factors that motivate unethical behavior in and by companies (Jeurissen, 2000). Again the need for cooperation between various actors and the creation of a shared vision is important. A CSR approach on a corporate level will not be sufficient because of the lack of space a single corporation has, given the opportunities offered by competition (Sijtsma, 2002).

#### *Political environment :*

The last factor that needs to be taken into account when looking at the possibilities for a sustainability transition is the political environment. As stated earlier in this segment, governments need to fulfill a facilitating role in the sustainability transition. It is the industry that needs to lead the process, but governments will need to create the proper circumstances that will enable a sustainability transition. Governments and their political parties create the context of the airline industry, and therefore the context in which a sustainability transition takes place. Identifying political standpoints on sustainability issues will therefore be an important aspect when looking at the possibilities for a transition towards sustainability. Political parties can also be seen as representatives of the people, the community, because they are they are chosen by the people. Therefore the standpoints on sustainability of political parties can be perceived as a reflection of society on this matter, and society in turn is a critical stakeholder for companies involved in the transition process.

*Conclusion* :

In short, a transition towards sustainability asks for the creation of one vision among the several actors participating in the process. Without this single vision a transition towards sustainability will be impossible for an industry and its context. In the development of an instrument that could contribute to the development of this shared vision several factors need to be taken in to account. These factors are the market situation, the political climate and consumer behavior. Implementation of these factors into an instrument asks for awareness and care regarding the complexity of the instrument. The more realistic a model is, the more complex it will be, the more unpredictably and opaquely the model will behave, and the harder it will be to validate the model empirically (Jager, 2000). Therefore the instrument should be a simplified representation of reality in order to keep it understandable. Making it too complex will make it inoperable.



## Chapter 2 : *Structure and Methodology*

### §2.1 Introduction

As stated in the previous background segment the situation regarding the greenhouse effect asks for changes in the actions and behavior of the actors contributing to this effect. A more sustainable society needs to evolve. Since the airline industry is one of the major contributors to the greenhouse effect, this will be one of the sectors that needs a change towards sustainability. The findings from the previous background segment resulted in the research objectives and questions presented in this segment.

### §2.2 Research Objective

The last segment was concluded with the statement that “a transition towards sustainability asks for the creation of one vision among the several actors participating in this process. Without this single vision a transition towards sustainability will be impossible for an industry and its context. In the development of an instrument that could contribute to the development of this shared vision several factors need to be taken in to account. These factors are the market situation, the political climate and consumer behavior. The instrument should be a simplified representation of reality in order to keep it understandable. Making it too complex will make it inoperable.”

The main objective of this graduation project therefore will be:

*“To develop an instrument that can contribute to the creation of one vision regarding sustainability among the actors of the European airline industry taking in to account the market and political situation that these actors are facing.”*

The European airline industry is chosen as an example of a market functioning as input for the game to be developed for several reasons. First Europe is chosen as subject of study because of the political opportunities offered by the unification of Europe. Since governments have a facilitating role in the transition process this unification could offer opportunities for cooperation in the formulation of sustainability policies for the European airline industry. Second, the European geographical size and infrastructure might offer strong possibilities for the development of substitutes for intra- European flights like high velocity trains. Another reason in the context of a graduation project is time. Taking the whole global airline market into account would become to extensive to deal with in the provided timeframe accompanied with the graduation project at hand. Another not unimportant reason for choosing the European airline industry is that this was the initial wish of the client of this research.

### §2.3 Research Question

Because of the fact that a transition needs to be achieved in a cooperative way an insight needs to be created in the visions and motives of the several actors in the airline industry.

Therefore the main research question will be:

*“To what extent are triple bottom line issues an issue for the potential sustainability transition actors in the European airline industry, and what opportunities and threats does this create for European airlines?”*

As stated in the *background* section of this report for answering this research question insights need to be created in the European airline industry, the European political climate

regarding the sustainability issue and the European Airline industry's customers' need perceptions. All this will be conducted from a game-building perspective. Therefore only the essential elements will be looked at to a degree necessary for the development of the earlier mentioned simulation game. Therefore no extensive analyses of each area can be expected by the reader. This would be too extensive for a graduation project such as this thesis.

#### **§2.4 Sub-questions**

Various areas need to be studied in order to capture the complexity of sustainability and mould it into a game. As became clear in the theoretical background these areas are the market situation, the political context, and consumer behavior. The sub-questions of this research will deal with these areas. Because of the complexity of the subject, further elaboration on these different areas, and the according sub-questions will take place in individual segments.

The sub questions per area are:

*Politics* :

- What are the most important actors in the political environment?
- What are the political standpoints on people, planet and profit from a left, left-centre, right-centre and right political perspective?

*Consumer behavior* :

- What are the critical factors determining consumer behavior?
- Which categories of airline market customers are there?
- Which specific factors are of influence on the attitudes of the different categories of airline market customers?

*Market situation* :

- Which factors in the market situation are of influence on the intensity of competition in a certain industry?
- Which core products does the European airline industry encompass and what are their characteristics?

## §2.5 Conceptual outlining

The structure of this research will be presented by the conceptual outlining presented in Figure 1.1.

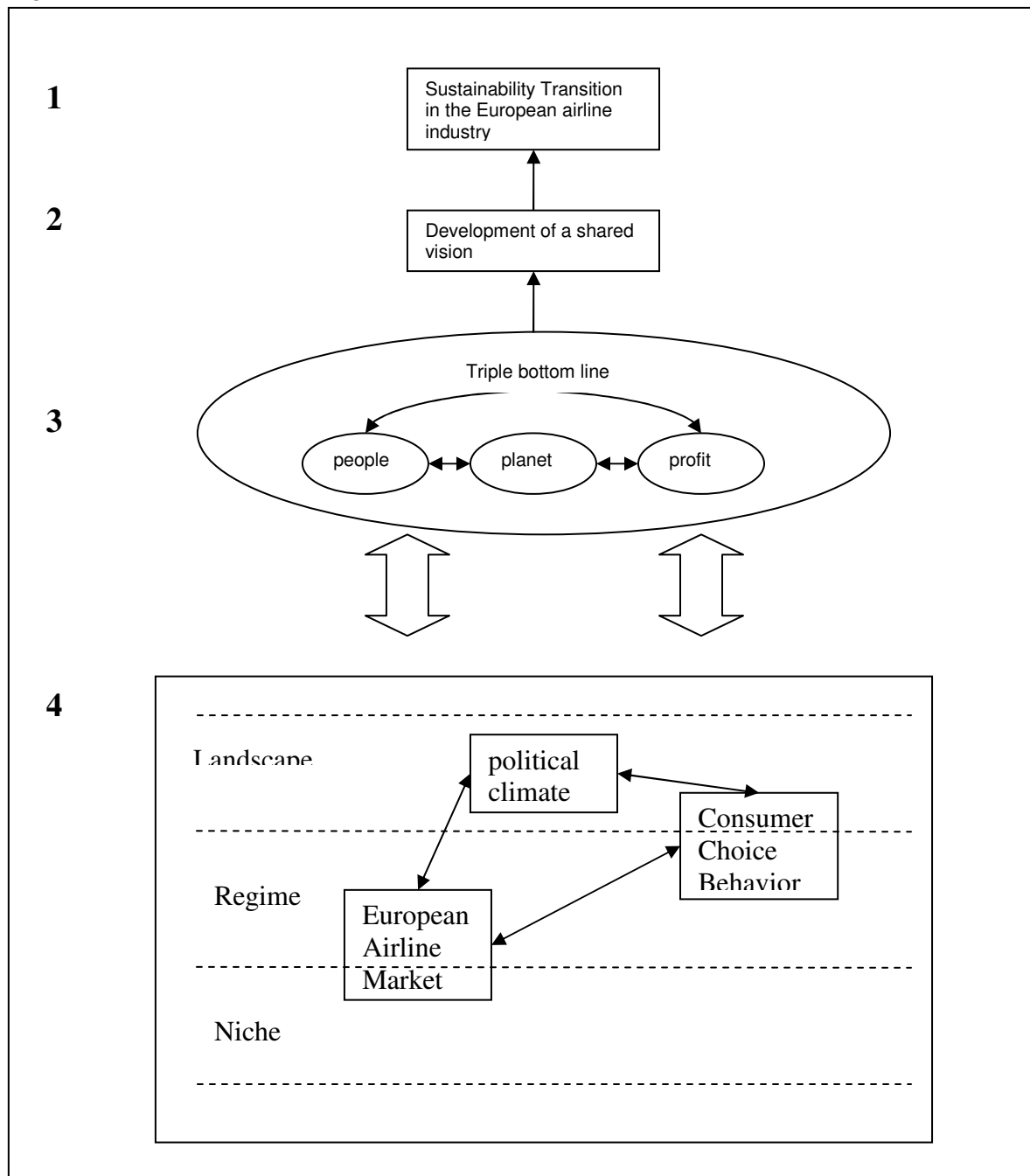


Figure 1.1

This conceptual outlining consists of four layers. The first layer being a transition towards a sustainable European airline industry, the second being the creation of a shared vision, the third being the triple bottom line factors underlying actors behavior regarding sustainability issues and the fourth layer being the factors that are of influence on the degree to which the various transition actors can fulfill their part in the transition process.

The first layer is a goal that is too extensive to achieve for a single study. A transition can take up to fifty years to occur and can not be directly steered. Therefore this project will be occupied with trying to make a contribution to the achievement of layer two.

Layer two is at the level of the main objective of this project, a contribution to the development of a shared vision on sustainability. This research will certainly not result in the achievement of this shared vision, but will hopefully make a contribution to its development.

The third layer is at the level of the main question of this project. An insight needs to be created in the way at which triple bottom line aspects are an issue in the minds and behavior of the several actors of the European airline industry. These 3 p's need to be in balance to make a sustainability transition possible. Therefore an insight in the opinions of the various actors in the European airline industry regarding the value of these 3 p's needs to be created in order to build a game that offers the possibility to contribute to the creation of a shared vision on sustainability.

The fourth layer is at the level of the sub- questions. Because of the industry fulfilling the leading role in the sustainability transition an insight needs to be created in the factors that influence the degree to which the industry can fulfill this role. The fourth layer represents the various levels in which a sustainability transition occurs. This is based on the earlier mentioned multi-level perspective. This multi-level perspective describes this context which exists of: - technological niches, - technological regimes and a socio-technical landscape. Niches act as incubation rooms for radical novelties, technical regimes refer to the "semi" coherent set of rules in an industry and socio-technical landscape refers to a wider technology- external context.

## §2.6 Methodology

### §2.6.1 Research model :

The following figure presents a brief overview of how this research is conducted.

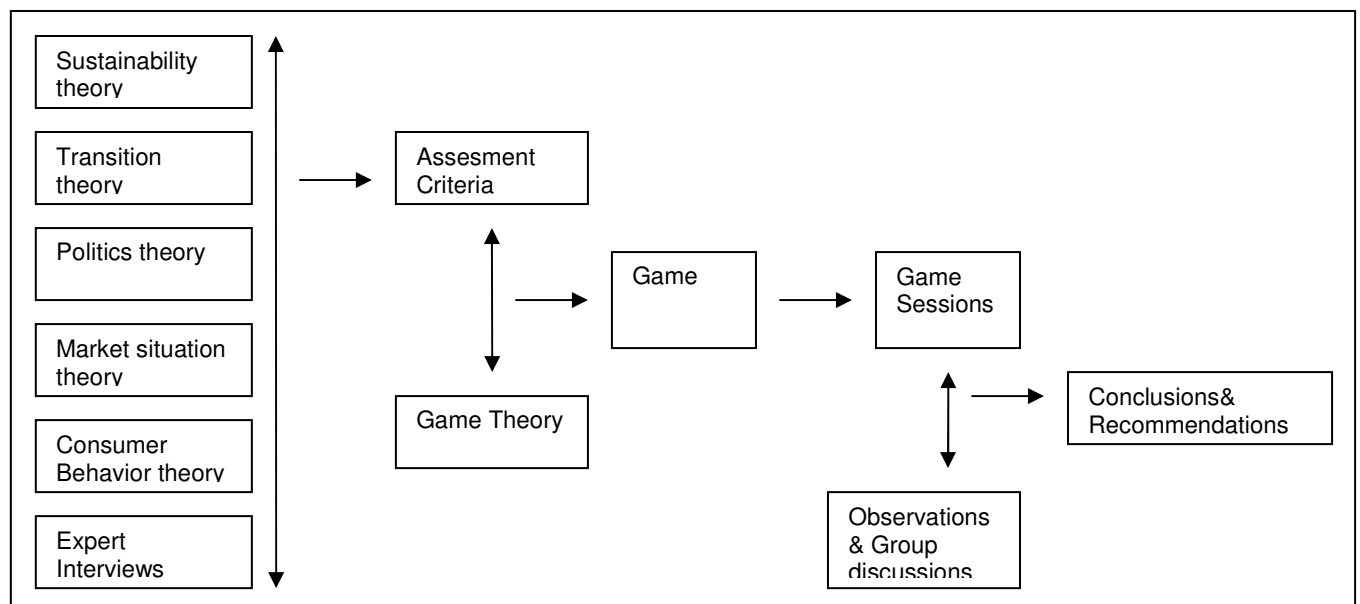


Figure 1.2

Both interviews with experts and analysis of various theoretical areas are used to determine which factors are important to include in an instrument that intends to create an insight in sustainability in the European Airline Industry. By analyzing game theory it is explored and determined how these aspects can be molded into the actual instrument, eventually resulting in a game. This game is used to play several game sessions with various players with different professional backgrounds.

By observing the players playing the game, and by conducting group discussions it will be determined if the game actually creates an insight into sustainability in the European Airline Industry. The results of these observations and discussions will be used to formulate several

conclusions regarding this research project and provide for several recommendations for possible future projects in this area.

#### §2.6.2 *Research approach* :

The research approach of this project is both deductive and inductive. Deduction is testing theory and induction is building theory (Saunders, 2003). For each aspect that needs to be studied in this project a theoretical framework is formulated. This theoretical framework is applied on the retrieved data. This is the deductive part of the project. The next step is the development of an instrument that can contribute to the creation of one vision. This will be the inductive part of the project. Possibly, new insights will be created in order to increase mutual understanding among actors in each others behavior. In short, the findings from the empirical analysis by theory will be used as input in the development of the earlier mentioned instrument. This instrument will possibly create new insights on triple bottom line issues in the European airline industry. In this case induction will follow deduction.

#### §2.6.3 *Research strategy* :

The research strategy of this project is a combination of case study and grounded theory. Case study is a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence. Grounded theory is theory building through a combination of induction and deduction without the formation of an initial theoretical framework (Saunders, 2003). This project has some of the characteristics of a case study to the extent that multiple sources of evidence will be used. It differs from the standard definition of a case study for the fact that triple bottom line issues are not a contemporary phenomenon but a phenomenon characterized by long term sight. This project also has got some characteristics of grounded theory to the extent that the findings from the case study part of the project will be combined to create new insights regarding the possibilities for sustainability in the European airline industry. It differs from the standard definition of grounded theory because in this project a theoretical framework is used as starting point.

#### §2.6.4 *Time horizon* :

The time horizon of this project is cross-sectional and not longitudinal. In longitudinal studies the basic question is whether any changes occurred over a period of time (Saunders, 2003). In this project the question is if any changes could occur in the future. Therefore this project deals with the presence, awareness and importance of the 3 p's of the triple bottom line in the European airline industry's context at this moment and not in the past. Therefore this project is cross-sectional.

#### §2.6.5 *Type of research* :

This project is both explorative and descriptive. Explorative research is a means of finding out what is happening, to seek new insights, to ask questions and to asses phenomena in a new light. The object of descriptive research is to portray an accurate profile of persons, events or situations (Saunders, 2003). This project has got characteristics of descriptive research because an accurate profile of triple bottom line issues in the European airline industries context will be given. The results from this descriptive part of the project will be used to create new insights on the topic. At this stage the project will become explorative because this project intends to seek new insights on triple bottom line issues in the European airline industry.





## Chapter 3 : Stakeholder Analysis in theory

### §3.1 Introduction

In Chapter 1 it became clear that a transition towards sustainability asks for the creation of one vision among the several actors participating in the process. Without this single vision a transition towards sustainability will be impossible for an industry and its context. In the development of an instrument that could contribute to the development of this shared vision several factors need to be taken in to account. These factors are the market situation, the political climate and consumer behavior. As became clear in the previous segments of this thesis, these factors are interdependent on a landscape-, regime- and niche-level (see figure 3.1). These factors are part of and influential on each others contexts. Developments in the political climate for instance could possibly have an effect on developments in the domain of the other two factors.

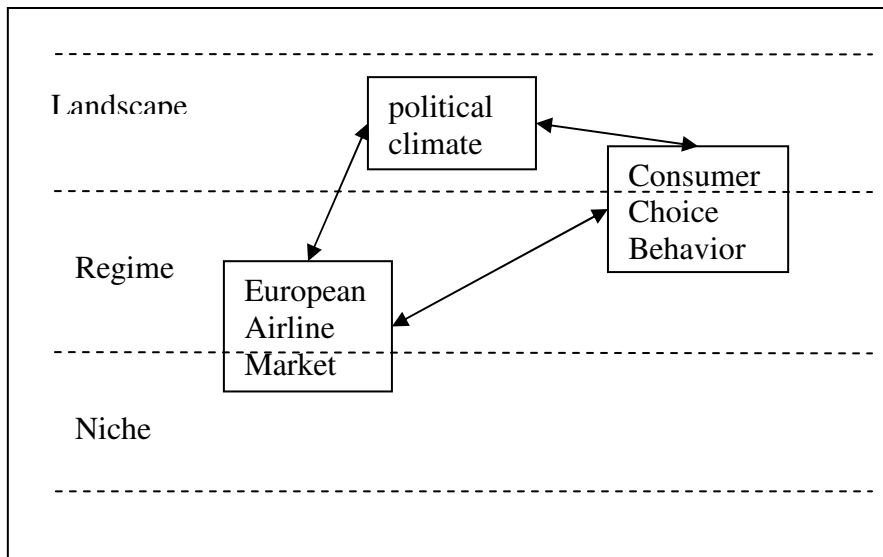


Figure 3.1

In figure 3.1 the different areas on which further elaboration is needed are presented as black boxes. In this chapter this black boxes will be opened up and the stakeholders and factors that are important in these areas will be presented from a theoretical perspective. The interdependency of the above mentioned factors will be explained by giving examples of possible ways in which these factors could possibly influence each other in each according segment. As earlier mentioned, the elaboration on each area will be conducted with game-building motives. Therefore only the essential elements necessary for the development of the game will be included in the analysis. Extensive elaboration per area unfortunately would ask for far more time than offered by the context of a graduation project.

First a theoretical perspective on the political environment will be presented, second a theoretical perspective on consumer behavior will be presented and third a theoretical perspective on the market situation will be presented. The elaboration on these various areas will result in additional research questions on each area. These questions will form the basis for an empirical analysis on which further elaboration will take place in chapter 4.

## § 3.2 *The Political Climate*

### § 3.2.1 Introduction

In chapter 1 it was stated that the political environment should be taken in to account when analyzing the possibilities for a sustainability transition because this political environment is a part of the context in which the transition leader exists. This segment will answer the following sub-question as presented in chapter 1:

*“What are the most important actors in the political environment?”*

For doing business successfully it is important to know what political parties and interest groups exist in a specific country-market (Muhlbacher, 1999). This segment will offer a theoretical framework on the political context in a sustainability transition sufficient enough for the purpose of building a game, by answering this question.

### § 3.2.2 Theoretical background on politics

In determining the most important actors in the political environment use is made of the findings of Muhlbacher. In his book on international marketing he collects and bundles the findings of several authors on specific areas important in international marketing. The political environment is one of the areas which are specifically studied in his book. By doing this an insight is created and offered to the reader on the political environment.

It is important for a company to determine the political stability in a country. Political instability makes the business environment less predictable, and predictability is a key to long-term business success (Muhlbacher, 1999). There seem to be several factors that are of influence on the political stability in a country, of which political parties are the most important one. Political parties are important factors of influence on a country-market’s political environment because they channel public opinion into the formulation of government policies and laws (Muhlbacher, 1999). Therefore an analysis of the programmes of important European political parties on sustainable issues could offer insights on the extent to which these issues are important in society and the European airline industry’s context.

The role that foreign businesses are allowed to play in a given country-market is influenced by the philosophies of political parties (Muhlbacher, 1999). Analyzing the programmes of important European political parties on sustainable issues therefore could also offer an insight on what opportunities and threats various political environments could offer the European airline industry regarding sustainability.

Next to the political parties, being the most important factor of influence on political stability, there are also some less influential factors in the political environment. Strong influences on a country’s political decisions may also come from unions (Muhlbacher, 1999). Unions can be of influence on the political stability of a country for taking care of the interests of a large part of the population, namely the workforce. Therefore unions should be taken into account when analyzing the political environment of a certain market.

Besides unions, special interest groups may play a very important role in particular product markets. Lobbyists also influence the international marketer’s political environment (Muhlbacher, 1999). Non-governmental organizations (NGO) are the voice of parts of society, taking care of common interest like animal welfare and the environment for instance. By influencing society they can influence the programmes of political parties because of the fact that these parties are chosen by society.

In short there are three important actors in the political environment, namely political parties, unions and special interest groups.

### § 3.2.3 Possible interdependencies

The European political climate could be of influence on consumer behavior and the European airline market in several ways. First let's take a look at how the airline industry could possibly be influenced. First, as mentioned in the above, the philosophies of the political parties influence the role that businesses are allowed to play in a given country-market. Different political contexts could therefore offer different opportunities and threats to a business. This could be embodied in different policies and regulations that are of influence on the airline industry. Second, in case of conflicts regarding employees, unions could be of influence on the airline industry. The airline industry is subject to the outcomes of negotiations and agreements with unions on issues regarding employees. In a worst case scenario, disagreement or dissatisfactory outcomes of negotiations could confront the airline industry with strikes. Third, special interest groups could campaign against the airline industry. One could think of a campaign on kerosene taxation for instance. This brings us to the way in which the political context could influence the consumer or society in general. As will become clear by reading the according segment on consumer behavior, society is socially constructed. Necessary elaboration will follow in the according segment, but in short one could say that individuals are of influence on their context and their context is of influence on them. Therefore the political climate is of influence on the individuals living in it. Different political contexts therefore could have different influences on individuals. This could cause different kinds of behavior in different political contexts.

### § 3.2.4 Conceptual outlining on politics

The previous segment answered the sub-question *“What are the most important actors in the political environment?”*. Figure 3.2 gives a visual representation on the political environment. Figure 3.2 shows the interior of the political environment black box in figure 3.1.

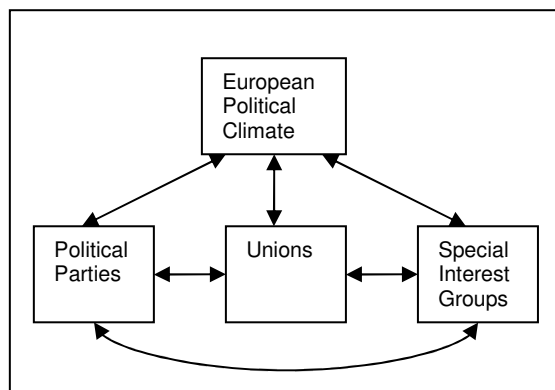


Figure 3.2

### § 3.2.5 Additional sub-questions

As stated in the previous chapter, additional sub-questions would be formulated in the according segments on the specific sub-areas. In the context of a graduation project it is too extensive to fully analyze all three factors of influence on the political climate. In §3.2.2 and 3.2.3 it was determined that political parties are the most important actors in the political environment. Therefore the choice is made to only further explore this factor of the political climate, and perceive this factor as the determinant factor of the political environment of the European airline industry.

The major national political parties are represented in the European Parliament by European political parties. The European Commission has produced some hundreds of directives that have been more or less quickly transformed into national law by the member states' legislators, but which lead to a certain standardization of laws and regulations across the EU

(Muhlbacher, 1999). This certain degree of standardization offers the opportunity to analyze the political environment by looking at the parties residing in the European Parliament instead of all the individual national parties, which would be impossible in the context and time-scale of a graduation project.

Because we want to know what opportunities and threats regarding sustainability the European airline industry could possibly be confronted with in several environments, the following additional sub-question is formulated:

*“What are the political standpoints on people, planet and profit from a left, left-centre, right-centre and right political perspective?”*

Answering this question will provide input for the formulation of several fictive political contexts which can be used to achieve the main goal of this research, the development of an instrument that can contribute to the creation of one vision regarding sustainability among the actors of the European airline industry.

### § 3.3 Consumer Behavior

#### § 3.3.1 Introduction

In chapter one customers and society were identified as the key stakeholders of the European airline industry. Stakeholders are critical for the success of a sustainability transition. The characteristics of society were assumed to be represented by the standpoints of political parties because these are chosen by the people. This leaves one critical stakeholder to be analyzed, namely the customer or consumer. To fully comprehend the possibilities for a successful sustainability transition in the European airline industry it is important to understand what drives its main stakeholders. Changes in the industry and its context regarding sustainability might influence the behavior of these stakeholders. Therefore this segment will try to grasp the possible effects of these changes by answering the following research sub-question:

*“What are the critical factors determining consumer behavior?”*

Answering this question will provide for a theoretical framework on consumer behavior. This framework in turn will provide input for the formulation of more specific sub-questions on this area.

#### § 3.3.2 Theoretical background on consumer behavior

What is it that drives consumers? First let's take a look at humans in general. People function in five inter-related forms, namely spiritual, social, psychological, physiological and reproductive forms (Jackson, 2004). Regarding consumption, habits are motivated as much by social and psychological factors as by purely physiological ones. There is good evidence that social and psychological functioning is also key to survival and continuance (Jackson, 2004). We all live in a certain context, our world, our environment. This world is socially constructed, and because of being part of this world, so are we. One could say that we determine our world and our world determines us. Therefore we actually determine ourselves, and therefore only are what we perceive ourselves to be. The self only exists in relation to social conversation. Cultural norms are internalized in individuals by way of social conversations. The relationship between self and other is a vital element in the search for an understanding of unsustainable consumption. The individual consumer is locked into a continual process of constructing and reconstructing personal identity in the context of a continually renegotiated universe of social and cultural symbols (Jackson, 2004). In this social context there are certain processes that can stimulate a more sustainable behavior, namely protection, investment, co-operation and innovation (Jager, 2000). The individual is constrained in taking pro-environmental or pro-social action by a variety of important factors, the social fabric in which self is negotiated and purely personal constraints (Jackson, 2004). In determining who we are we form an identity. One way to show our identity is material consumption. To say it bluntly, the saying is true. You actually are what you eat, or in this case consume in general. Identity is a key driver of material consumption in modern society. Material goods are not just artifacts; they derive importance, in part at least, from their symbolic role in mediating and communicating personal, social and cultural meaning not only to others but also to ourselves. Symbolic self completion is mainly pursued through the consumption of material goods imbued with symbolic meaning (Jackson, 2004). We show who we are by the things we buy. Symbolic resources provide a vital link between the external and the internal dialectics of symbolic identification. Control over the symbolic resources available for discursive elaboration of meanings and the social construction of identities lies mainly in the realm of the marketing strategies of corporate actors. (Jackson, 2004). Through their products corporate actors therefore partly determine reality and in turn can influence the consumers' perception of identity. Corporate actors in turn are dependent on consumers because reality is socially constructed. Whatever is socially desirable will

determine the choice of product or service from a consumer perspective. In short there is a reciprocal relationship between consumers and their context. Consumers build their own context through social construction and in turn this constructed context determines the consumption patterns of consumers. Therefore consumers are sensitive to their context but in turn this context is also sensitive to consumers. Changes in consumer behavior may therefore follow contextual changes or vice versa. Although a reciprocal relationship exists individuals remain individuals and sometimes the individual collides with the collective. This is called a social dilemma (Jager, 2000). Regarding sustainability an example of a social dilemma is the commons dilemma. The commons dilemma describes situations where the individual and collective rationalities in determining an optimal resource use collide. It addresses the balancing of short term local outcomes at the individual level with long term global outcomes at the collective level (Jager, 2000). An important factor regarding the character of an environmental commons dilemma is the perspective that an actor has on the dilemma. There are six reasons why people could be unsustainable, namely unawareness, uncertainty, incapability, it might impair an individual's quality of life, an individual might think that his individual behavior does not have effect and an individual might not be willing to be a first mover (Jager, 2000). These cases of collision between individual and collective show that individuals have their own behavioral determinants. But again the influence of context can not be ignored because the macro and micro levels of behavior determinants are interdependent. Strategies employed at the macro level may strongly affect the behavioral processes at the macro and micro levels of society (Jager, 2000). These behavior determinants at micro level are our basic human driving forces. The basic human driving forces are needs and values, opportunities, abilities and uncertainty (Jager, 2000). Opportunities are the commodities one can use and have a certain capacity to satisfy one's needs. The concept of ability refers to the set of capacities and/or skills an actor has for actually using or acquiring an opportunity. Uncertainty tolerance indicates how sensitive people are to uncertainty of outcomes (Jager, 2000). In sum our individual behavioral determinants are about fulfilling our needs and the way to do so. Needs therefore can be perceived as the main human driving force. How these needs are fulfilled may differ, the more opportunities are alike with respect to their need satisfying attributes, the more they are interchangeable (Jager, 2000). Therefore the same need can be fulfilled in different ways. Which needs are pursued again is influenced by the context in which one exists. For instance a change in cultural perspective may change one's experienced level of need satisfaction, thereby changing one's motivation to consume certain opportunities. The basic assumption is that specific behaviors are determined by cognitions and by social factors, such as social norms and customs (Jager, 2000). Several studies on needs are conducted. Max-Neef presents nine fundamental human needs namely subsistence, protection, affection, understanding, participation, leisure, creation, identity and freedom. Maslow presents a hierarchy of needs. First needs low in the hierarchy are satisfied then high needs in the hierarchy (Jager, 2000).

In short, the critical factors of influence on consumer behavior are: context and fulfillment of needs. Knowing this, the question is how the actual behavior to fulfill these needs is formed. According to Fishbein and Ajzen, the intention to conduct a certain type of behavior depends on one's attitude towards this behavior and the social norm towards this behavior as can be seen in Figure 3.3 (Fishbein in Veen, 1986).

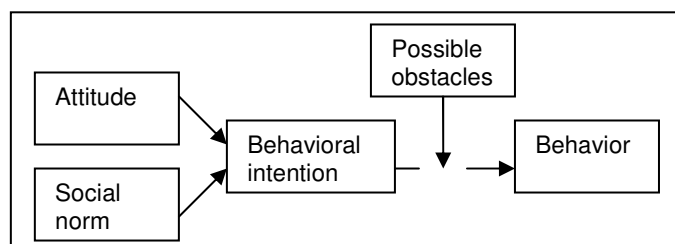


Figure 3.3 Fishbein and Ajzen model (derived from Veen, 1986)

The social norm could be seen as the social context earlier discussed, and the attitude can be perceived as one's internal motivations to conduct a certain kind of behavior. Attitude is a function of (1) the perceived probability that a certain consequence has a causal relationship with the actual behavior, and (2) the valuation of this consequence (Fishbein in Veen, 1986). An example could be that an airline customer producing perishable goods in a context which stimulates international trade wants to ship his goods. If he wants to ship his goods to the other side of the world it is highly probable that he wants it there quickly because otherwise the goods will deteriorate. Therefore speed is an important factor determining his behavior regarding choice for a mode of transport. Because the valuation for speed in the case of perishable goods is high, his attitude towards speed is highly probable to be positive. In combination with a social norm which stimulates international trade his behavioral intention most probably will be to choose for a fast mode of transport, e.g. air travel. As can be seen in Figure 3.3 this behavioral intention could be prevented from becoming actual behavior due to intervention of possible obstacles. In this case the route which this person wants to fly his goods on might be cancelled, preventing him from making the choice to ship his goods.

In short the main goal of an individual is the fulfillment of his or her needs. The way these needs are fulfilled depends on the individual's attitude and the social norm within a general social context.

### § 3.3.3 Possible interdependencies

As mentioned in the above there is a reciprocal relationship between consumers and their context. Consumers build their own context through social construction and in turn this constructed context determines the consumption patterns of consumers. Therefore consumers are sensitive to their context but in turn this context is also sensitive to consumers. Changes in consumer behavior may therefore follow contextual changes or vice versa. Consumers can possibly influence their context in different ways. Individuals together socially construct society. Society determines which political parties determine the political context which in turn is of influence on the airline market. Society determines whatever is socially desirable. Whatever is socially desirable will determine the choice of product or service from a consumer perspective.



### § 3.3.4 Conceptual outlining on consumer behavior

The previous segment answered the sub-question “*What are the critical factors determining consumer behavior?*”. These are one’s context and needs. The way this needs are fulfilled depends on the individual’s attitude and the social norm within a general social context.

Figure 3.4 gives a visual representation on consumer behavior. Figure 3.4 shows the interior of the consumer behavior black box in figure 3.1.

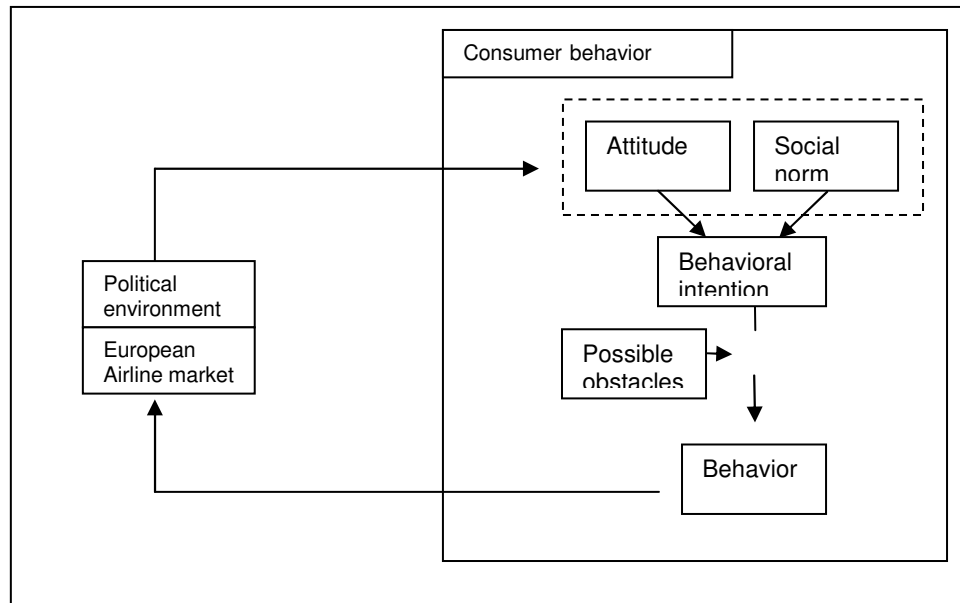


Figure 3.4 Consumer behavior, based on Jager (Jager, 2000) and Fishbein and Ajzen (Fishbein in Veen, 1986).

### § 3.3.5 Additional sub-questions

As stated in previous segments political parties are seen as representatives of society. Therefore the political environment is assumed to be representative for the society in which consumers live. Because this thesis is dealing with the European airline market it is also assumed to be part of the context in which consumers, in this case the customers of the European airline market, consume. Because the political climate and the market situation are already dealt with in other segments, this segment will only result in additional sub-questions on the customer of the European airline market and his internal behavior determinants. Firstly, the next question needs to be answered:

*“Which categories of airline market customers are there?”*

It was pointed out that the main human driving force is the fulfillment of one’s needs. If one wants to know how different political and market contexts could possibly influence the consuming behavior of the European airline market’s customers, it is important to find out which specific factors influence the attitudes of each customer segment regarding the behavior to fulfill their needs. Therefore the next sub-question needs to be answered:

*“Which specific factors are of influence on the attitudes of the different categories of airline market customers?”*

Answering these questions will provide information on how European airline market customers could possibly react to contextual developments. These findings in turn can serve as input for the game to be developed.

### § 3.4 The Market Situation

#### § 3.4.1 Introduction

In chapter 1 it became clear that the market situation is of influence on possibilities and chances for sustainability in a certain industry. The degree of competition determines the degree of space for sustainable initiatives. One extreme is that in an industry with fierce competition, financial space for investments in sustainability is small or even lacking. The other extreme situation is that in an industry with very weak competition, pressure on companies to fulfill customer expectations regarding sustainability is rather weak from a strategic point of view (Jeurissen, 2000). Therefore this segment will answer the following sub-question as presented in chapter 1:

*“Which factors in the market situation are of influence on the intensity of competition in a certain industry?”*

Answering this question will provide for a theoretical framework on the market situation. This framework in turn will provide input for the formulation of more specific sub-questions on this area. The following segment is derived from Michael A. Hitt. In his book *Strategic management* he describes the functioning of Porter’s five forces model.

#### § 3.4.2 Theoretical background on the market situation

The intensity of industry competition is a function of five competitive forces: the threat of new entrants, suppliers, buyers, product substitutes, and the intensity of rivalry among competitors (Hitt, 1999).

New entrants to an industry can threaten existing competitors because they bring additional production capacity. Unless product demand is increasing, additional capacity holds consumer’s costs down, resulting in less sales revenue and lower returns for all firms in the industry (Hitt, 1999). The likelihood that firms will enter an industry is a function of two factors: barriers to entry and the retaliation expected from current industry participants. When firms find entry into a new industry difficult or when firms are at a competitive disadvantage entering a new industry, entry barriers exist. The absence of entry barriers increases the probability that a new entrant can operate profitably in an industry. There are several potentially significant entry barriers, namely: economies of scale, product differentiation, capital requirements, switching costs, access to distribution channels, cost disadvantages independent of scale, government policy (Hitt, 1999). Decision makers will also anticipate existing competitors’ reactions to a new entrant. If retaliation is expected to be swift and vigorous, a decision could be reached against entry. Strong retaliation can be anticipated from firms with a major stake in an industry, from firms with substantial resources, and when industry growth is slow or constrained (Hitt, 1999).

Suppliers and buyers are also of influence on the intensity of competition. The five forces model recognizes that suppliers could become a firm’s competitor by integrating forward, as could buyers by integrating backwards (Hitt, 1999). A supplier group is powerful when, it is dominated by a few large companies and is more concentrated than the industry to which it sells; satisfactory substitute products are not available to firms; industry firms are not a significant customer for the supplier; suppliers’ goods are critical to buyers’ marketplace success; the effectiveness of suppliers’ products has created high switching costs for industry firms; and suppliers are a credible threat to integrate forward into the buyers’ industry. Credibility is enhanced when suppliers have substantial resources and provide the industry’s firms with a highly differentiated product (Hitt, 1999). Buyers are powerful when: they purchase a large portion of an industry’s total output; the product being purchased from an industry accounts for a significant portion of the buyers’ costs; they could switch to another product at little, if any, cost; and the industry’s products are undifferentiated or

standardized, and they pose a credible threat if they were to integrate backward into the sellers' industry (Hitt, 1999).

Substitute products are also a factor influencing the intensity of competition in a certain industry. Substitute products are different goods or services that can perform similar or the same functions as the focal product (Hitt, 1999). Capable of satisfying similar customer needs, but with different characteristics, substitute products place an upper limit on the prices firms can charge. In general, the threat of substitute products is strong when customers face few, if any, switching costs and when the substitute product's price is lower or its quality and performance capabilities are equal to or greater than the industry's products (Hitt, 1999).

As stated above several factors are of influence on the intensity of competition in a certain industry, although direct competition seems to be the most important factor. Competition among rivals is stimulated when one or more firms feel competitive pressure or when they identify an opportunity to improve their market position (Hitt, 1999). Because firms in an industry are mutually dependent, one firm's actions often invite retaliation from competitors. The intensity of competitive rivalry among firms is a function of several factors, namely: numerous or equally balanced competitors, slow industry growth, high fixed or storage costs, lack of differentiation or low switching costs, capacity augmented in large increments, diverse competitors, high strategic stakes, and high exit barriers (Hitt, 1999).

Industries populated by many participants tend to be characterized by intense rivalry. At the other extreme, industries with only a few firms of equivalent size and power also tend to have high degrees of competitive rivalry. (Hitt, 1999).

When an industry is characterized by slow market growth, rivalry becomes much more intense; an increase in one firm's market share usually comes at the expense of competitor's shares (Hitt, 1999).

When fixed costs account for a large part of total costs, companies are challenged to utilize most, if not all, of their productive capacity. Operating in this manner allows the costs to be spread across a larger volume of output. Such actions by many firms in an industry can result in excess supply. To reduce inventories, companies typically decrease product prices and offer product rebates as well as other special discounts. These practices often intensify rivalry among competitors (Hitt, 1999).

Differentiated products engender buyer identification, preferences and loyalty. Industries with large numbers of companies that have successfully differentiated their products have less rivalry. When buyers view products as commodities, rivalry intensifies. The lower the buyer's switching costs, the easier it is for competitors to attract them (Hitt, 1999).

In some industries, the realities of scale economies dictate that production capacity should be added only on a large scale. Additions of substantial capacity can be disruptive to a balance between supply and demand in the industry. Price cutting is used often to bring demand and supply back into balance. Achieving balance in this manner has a negative effect on the firm's profitability (Hitt, 1999).

Not all companies seek to accomplish the same goals, nor do they operate with identical cultures. With greater firm diversity, it becomes increasingly difficult to pinpoint a competing firm's strategic intent. Often firms engage in various competitive actions, in part to see how their competitors will respond. This type of competitive interaction can reduce industry profitability (Hitt, 1999).

Competitive rivalry becomes more intense when attaining success in a particular industry is critical to a large number of firms (Hitt, 1999).

Exit barriers also increase the rivalry in an industry. Exit barriers are economic, strategic and emotional factors causing companies to remain in an industry even though the profitability of doing so may be in question. Common sources of exit barriers are: specialized assets; fixed costs of exit; strategic interrelationships; emotional barriers; government and social restrictions (Hitt, 1999).

In short there seem to be five factors of influence on the intensity of competition in a certain industry, of which rivalry among direct competitors seems to be the most complex one.

### § 3.4.3 Possible interdependencies

The above showed the internal characteristics of a product market. The airline industry could be of influence on the political climate and consumer behavior in a couple of ways. The political environment for instance could be influence by lobbying at political parties. In this way an industry can try to influence its own context. Consumer behavior can be influenced by the airline industry because control over the symbolic resources available for discursive elaboration of meanings and the social construction of identities lies mainly in the realm of the marketing strategies of corporate actors. Symbolic self completion is mainly pursued through the consumption of material goods imbued with symbolic meaning (Jackson, 2004). We show who we are by the things we buy. Symbolic resources provide a vital link between the external and the internal dialectics of symbolic identification. (Jackson, 2004). Through their products corporate actors therefore partly determine reality and in turn can influence the consumers' perception of identity.

### § 3.4.4 Conceptual outlining on the market situation

The previous segment answered the sub-question *“Which factors in the market situation are of influence on the intensity of competition in a certain industry?”*. Figure 3.4 gives a visual representation on the market situation. Figure 3.4 shows the interior of the market situation black box in figure 3.1.

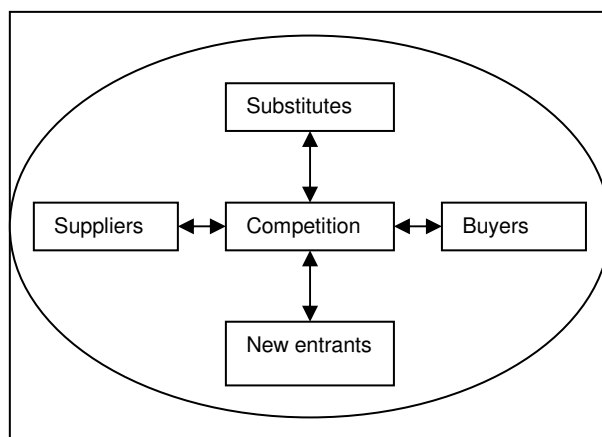


Figure 3.4

### § 3.4.5 Additional sub-questions

The main goal of this graduation project is the development of an instrument that can contribute to the creation of one vision regarding sustainability among the actors of the European airline industry. Because this research is conducted from a game-building perspective, the reader must not expect an extensive market analysis. On top of this it will be to extensive to include all the five factors mentioned above as active elements in this instrument in the context of a graduation project. Because direct competition seems to be the most complex and important factor influencing the market situation, the choice is made to only include this factor as an active element in the instrument. The other four factors will be included in the instrument, although not as active elements but as fictive opportunities and threats to the direct competition. These four elements will be fictive and not based on empirical facts.

Regarding the direct competition it will be important to understand the characteristics of this factor of the market situation essential for the development of a game. Therefore the next following additional sub-question is formulated:

*“Which core products does the European airline industry encompass and what are their characteristics?”*

The answer to this question will form the basis of the earlier mentioned instrument. The instrument will encompass several direct competitors having the ability to exploit several core products. During the exploitation of these products, the direct competitors will be confronted with several situations originating from the political environment, consumer behavior or the earlier mentioned remaining four factors of the market situation. It will be interesting to see how the market in the instrument will evolve and what consequences this will have for the opportunities for sustainability. Further elaboration on the instrument will follow in the according chapter.

## **Chapter 4 : Stakeholder Analysis**

### **§4.1 Introduction**

Several additional research questions on the areas of politics, market and consumer behavior were formulated in chapter 3. This chapter will try to answer these questions. As previously mentioned the goal of this thesis is the development of an instrument that could contribute to the development of a shared vision on sustainability. The next chapter will deal with the becoming and development of the instrument, whereas the outcome of this chapter will provide input for this instrument.

First the question on politics is answered, second the questions on consumer behavior and third the question on the market situation

### **§ 4.2 The Political Climate**

#### **§ 4.2.1 Introduction**

As stated in chapter 1 the instrument to be developed uses the European airline market as an example for input for a simplified picture of reality. Because the political climate was pinpointed as the determinant contextual factor, this segment will try to capture and present the thoughts and believes on the sustainability issue in the European political climate. The theoretical framework on politics resulted in the formulation of an additional research question, namely:

*“What are the political standpoints on people, planet and profit from a left, left-centre, right-centre and right political perspective?”*

Answering this question will provide input for the development of several political contexts which will form the environments with which users of the instrument will be confronted. An insight into these possible contexts can tell us which possible implications these contexts bring to the airline industry. Further elaboration on this matter will take place in the next chapter.

As stated in the previous chapter the determinant political factor are political parties. Therefore it will be necessary to determine which political parties exist in Europe in order to answer the earlier presented question. National political parties are represented in the European parliament by European political parties. Analyzing the standpoints on sustainability of all individual national parties will be impossible in the context and time-scale of a graduation project. Therefore the choice is made to analyze the standpoints on sustainability of parties residing in the European Parliament instead of all the individual national parties.

The standpoints on sustainability are determined by analyzing the several party programmes on people, planet and profit statements. The result of this analysis will be the formulation of the characteristics of a potential left, left-centre, right-centre and right wing political Europe. This characterization per political climate hopefully will present the way and extent to which people, planet and profit issues can be assumed to exist in the according environment.

§ 4.2.2 Empirical analysis on politics

First it is necessary to determine the political parties residing in the European parliament in order to determine the standpoints on sustainability from different political perspectives. There are seven European parliament coalitions representing several national political parties. These coalitions are:

Pse- group	:	Socialist Group in the European parliament
GUE/NGL	:	Confederal Group of the European United Left - Nordic Green Left
Greens/EFA	:	Union for Europe of the nations: euro-sceptic party
ALDE	:	The Greens/European free alliance
EPP-ED	:	Alliance of Liberals and Democrats for Europe
UEN	:	European peoples party and European Democrats
EDD	:	Euro-sceptic group
	:	Europe of Democracies and Diversities

([www.elections2004.eu](http://www.elections2004.eu)) ([www.fact-index.com](http://www.fact-index.com))

Figure 4.1 presents a categorization of these parties from left wing oriented to right-wing oriented. The positioning on a left to right scale is based on the statements made by the political parties on their political position, being: left, left-centre, right-centre or right.

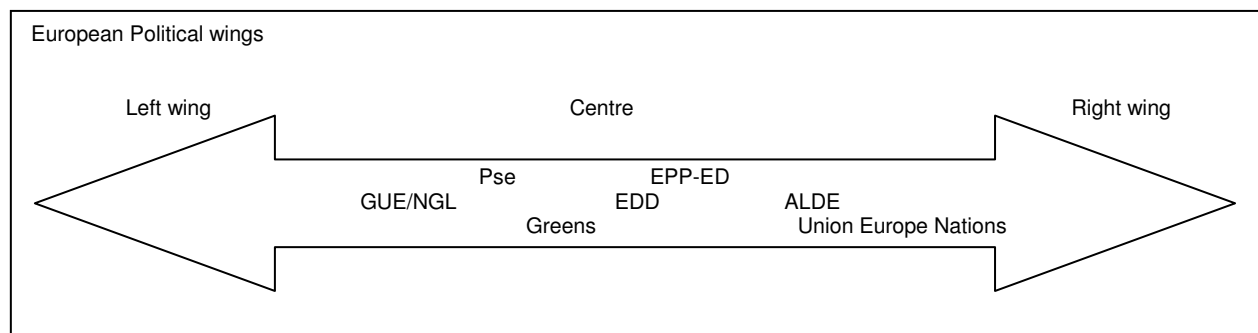


Figure 4.1: European political wings

Efforts to retrieve the programmes of all parties resulted in the retrieving of four programmes, namely the party programmes of the Greens, the Pse-group, EPP-ED and ALDE. The programmes of the other parties were not available. Luckily these parties all have different political perspectives, as can be seen by the division on a left-wing to right-wing perspective in figure 4.1. Therefore it still is possible to give a characterization of four possible “Europe’s”. The Pse programme is used as input for a left-wing Europe characterization, The Greens’ programme for a left-centre characterization, EPP-ED for a right-centre characterization and ALDE for a right-wing characterization. Analyzing these four programmes resulted in the following four possible Europes. The programmes can be found in the appendix of this thesis.

*Left-wing Europe*

People are in first place in the left-wing Europe. Inequality and racism are major issues in left-wing Europe. Policies and conflicts regarding these aspects are therefore expected. Minorities and women are getting equal chances in left wing Europe. Quality of life is improved in left-wing Europe, this includes a better environment. Left-wing Europe will encompass a great sense of social responsibility towards poor regions inside Europe (for example by fairly dividing EU budgets) and developing countries outside Europe. Democracy, equality, respect for human rights, diversity and the rule of law are important in and outside Europe. Left-wing Europe respects the environment, landscape and animal

rights. The environment needs to be respected in order to give future generations equal chances. Left-wing Europe will promote this respect outside Europe. Left-wing Europe will develop more ambitious targets than Kyoto and will encourage the development of sustainable alternatives to for example fossil fuels. Left-wing Europe wants Europe to become the most dynamic-knowledge based economy in the world, capable of sustained economic growth with more and better jobs and greater social cohesion. Trade with developing countries will be increased. One of the ways in which this is done is by opening up our market to developing countries. In short, people are number one in left wing Europe. Environmental issues need to be dealt with, and the economy needs to be healthy in order for better quality of life.

#### *Left-centre Europe*

A centre-left Europe will be a Europe which offers its inhabitants a sustainable social and economic environment. People, planet and profit issues are important in this political climate. Equality is a major issue in left-centre Europe, and therefore will be promoted in and outside European borders. The quality of life needs to be improved by protection of the environment. Initiatives of sustainable development projects in urban areas are promoted. Education is also an important issue in left-wing Europe. Broadening the supply of training is one way of dealing with unemployment for instance. New employment will be created by investments in sustainable development projects. Labour is important in this political climate. The use of renewable resources will be promoted in a left-centre Europe, and greenhouse gasses must be reduced by 30%. The relationship between greenhouse gasses and the transport sector is an issue in left-centre Europe, resulting in kerosene taxation and promotion and improvement of the European railway system. In left-wing Europe several attempts are made to create environmental awareness for instance by creating a platform for best practice and advice. In this political climate, trade policy (and the WTO) is subject to environmental and human right policies. This development is also seen by reforming the international financing institutions towards fair voting rights and inclusion of human rights and environmental criteria. The EU institutions will commit themselves to eco-management and audit schemes.

#### *Right-centre Europe*

In right-centre Europe, entrepreneurship will have a key position. It is promoted amongst all ethnic, racial and age groups in Europe, and is generally promoted in developing countries. Right-centre Europe offers general fiscal, financial and social conditions that make free enterprise possible for every entity in the Union. Irrational distortions of trade are avoided. Competition is essential in all areas, including education, energy supply and public services. Right-centre Europe will compete to become the world leading knowledge economy. Therefore a lot of attention is put in research. Relationships with other regions like Africa, Asia and South-America are strengthened. More cooperation with the US is expected and the option of a free trade area with NAFTA is considered. Right-centre Europe will handle relations with third countries at EU level. Sustainability is a main issue in right-centre Europe. The economy, people and the planet are seen as interdependent aspects. People are adapted to the knowledge economy by training and education accessible to everyone. People are important for a strong economy, and in return a strong economy creates more jobs and therefore is important for people. A greater transparency of EU policies will exist for its inhabitants. Sustainability is integrated in all Union policies. Environmental responsibility is integrated into law, thereby promoting "the polluter pays" principle. Bio fuels, clean engines and fuel-efficient engines are promoted. Renewable resources and energy efficiency are promoted by public awareness campaigns. Environment respectful modes of transport are becoming more important in the long distance transport market. Investments are made in rail- and waterways and railways are liberalized. Modes of transport are becoming more interoperable. Right-centre Europe will try to find ways in which population growth is made compatible with finite resources. Healthcare is also an important issue in right-centre Europe.



It is promoted through campaigns and transparency on product information. Research in rare illnesses is another social aspect of this political environment. Right-centre Europe will have one European market, integrating central and eastern European economies into western European economies; this will make Europe the world's biggest market. Right-centre Europe will have a strong Common Foreign and Security Policy to live up to responsibilities regarding peace, democracy, human rights and development in poorer countries. This will be supported by investments in military capabilities. Terrorism is not accepted.

### *Right-wing Europe*

The European economy is an important factor for right-wing Europe. A right-wing Europe would be somewhat inward looking, securing safety and security for European citizens. For Europe to become and stay a global player, common policies are needed. These policies will respect cultural differences and to a certain extent will call for transparency. Asylum seekers are welcome in a right-wing Europe, but economic refugees will have little chance of getting into a right-wing Europe. Society is there to make self-fulfillment possible for each individual. Right-wing Europe would have a common European economic policy that facilitates a stable and competitive economic environment. A right-wing Europe would have a single and liberalized market. The environment will be an issue in right wing Europe, although it is to be expected that it will be subordinate to the European interests. As said it is an issue, but only comes in the last couple of points of the ALDE programme, insinuating that it might be less important in a right wing Europe.

#### § 4.2.3 Conclusions on politics

As can be seen in the four different characterizations, different issues are important in different political contexts. It will be important to take this into account in the development of an instrument dealing with sustainability. In left-wing Europe people are the most important sustainable issue, whereas in right-wing Europe profit is seen as a core factor. In both left-centre and right-centre Europe people, planet and profit issues are seen as important although planet seems to be slightly dominant in left-centre Europe whereas Right-centre Europe sees all three factors as equally important. Because the focus lies on different aspects of the triple bottom line in different political contexts, it can be assumed that different political climates bring different implications regarding sustainable issues to the airline industry. For instance the focus in left-wing Europe lies on the people aspect of sustainability. Policies are aimed at human rights and equality for instance. Airlines can be confronted with these implications in several ways. First in this political context airlines assumably will be confronted with these policies. Therefore they need to invest in their workforce for instance, to comply with these policies. Second, because our environment is socially constructed, also society most probably will be "people minded" in a left-wing political context. Therefore airline customers in a left-wing context might be more sensitive to an airline's conducts regarding people issues and asses according weightings to the factors important for them in their choice of behavior. These weightings will assumably be different in a right-wing political context, because in this context the focus lies on the economy or in other words, the profit aspect of sustainability. In this context the aspects of influence on consumer behavior will assumably be subject to an economic focus. In addition this right-wing political context facilitates a strong competitive economy which in turn will bring other implications to the airline industry than in a left-wing political context. A right wing context might ask airliners to focus their investments on economic aspects in order to be able to survive in this competitive environment. In short different contexts most probably will provide different implications for the airline industry regarding political policies, and regarding consumer behavior.

The next chapter will deal with the development of the instrument. The findings on politics of this segment will serve as the basis for the formulation of several possible scenarios in several possible political climates. Further elaboration follows in chapter 5.

### § 4.3 Consumer Behavior

#### § 4.3.1 Introduction

To fully comprehend the possibilities for a successful sustainability transition in the European airline industry it is important to understand what drives its main stakeholders. In chapter 1, consumers were identified as one of the critical stakeholders of the European airline industry. To comprehend which forces determine the behavior of this group of stakeholders, first it will be necessary to determine who they are. Therefore the next research question will be answered in the following segment:

*“Which categories of airline market customers are there?”*

Determining which customer groups exist is only a first step. The second step will be to comprehend the driving forces of their behavior. The previous chapter resulted in the conclusion that the main human driving force is the fulfillment of one’s needs. The way these needs are fulfilled depends on the individual’s attitude and the social norm within a general social context. These factors eventually determine the behavior by which the fulfillment of one’s needs is pursued. The social norm is determined by one’s context. Earlier in this thesis it was determined that this context is determined by the political climate and the market situation. Factors of influence in these areas are discussed in the according segments. What remains is gaining an insight in the internal factors of influence on the attitudes of the individual European airline customers. Therefore the following segment will try to determine the specific aspects that are of influence on the behavior of each specific group of customers from the European airline industry by answering the following question:

*“Which specific factors are of influence on the attitudes of the different categories of airline market customers?”*

To answer these questions use is made of a rather old information source “Airline Marketing and Management” initially written in 1982 by Stephen Shaw. Because this research is conducted from a game-building perspective it is believed that the age of the book will not have a negative influence on the functioning of the game. Research conducted to understand the actual functioning of the airline market should probably be based on more recent literature.

#### § 4.3.2 Empirical analysis on consumer behavior

Regarding the first question, three airline businesses can be distinguished, namely: The leisure business, the business communication business, and the distribution business (Shaw, 1982). Within these three business segments, several sub segments can be distinguished on which further elaboration will take place in the according segments. A distinction of business and non-business passengers can also be found browsing academic databases, but in this case the choice for a more extensive distinction was made in an attempt to capture the complexity of the airline business as fully as possible.

Regarding the second question, elaboration on each business segment will take place next.

*The leisure business* :

One of the three segments in the airline business is the leisure travel business. There are two leisure markets, namely: the holiday market and the visiting friends and relatives (VFR) market, of which the latter is the biggest segment (Shaw, 1982). The leisure market presents several parties which can be identified as potential customers for the airline business. Sometimes, the partner who is most influential in the family decision making process must be

seen as the customer and the target for an airline's marketing activities. Sometimes traveling agents must be considered as customers because a high proportion of leisure passengers book through agents. And sometimes tour operators must be considered as customers, because a high proportion of leisure travelers do not just wish to buy an air ticket. They require instead a packaged holiday encompassing flight, surface transfers and accommodation (Shaw, 1982). The leisure market is characterized by infrequent users of which most make only one air trip a year (Shaw, 1982). Price is the single most important factor in choice of airline decisions for a high proportion of leisure passengers. Single most, because in a situation where prices among competitors in the market tend to be the same, price will not be the major factor in the choice between different airlines. The price elasticity of leisure travel tends to be high, and significantly higher than that for business travel. This means that increases in price will cause air travel to fall disproportionately. Therefore price is a basic factor of influence on the attitudes of the leisure traveler (Shaw, 1982). The fundamental distinction between business and leisure travel is that leisure travel is being paid for out of the disposable income of those traveling, and the full costs have to be paid because ticket prices are not deductible against tax (Shaw, 1982). Another difference between business and leisure travel is that to the leisure traveler high frequency and precise flight timings are less significant than for the business traveler. For them, safety and security should be given a high priority, just as availability of peak time capacity in weekends and holidays for instance (Shaw, 1982). Within the overall constraints of low prices, safety, security and reassurance and the availability of seats at the right time, airlines seeking to attract the leisure customer will need to give the highest standards of in-flight service that they can afford within the overall requirement to show a profit, because many leisure travelers will regard the air trip as an integral part of their holiday and something which hopefully they are going to enjoy (Shaw, 1982). Last but not least, social status is important in leisure travel. People enter the leisure travel market to enjoy the experience of visiting distant places and also often because they hope to make substantial social status gains as a result. However social status gains also decline once a resort becomes accessible to many people (Shaw, 1982).

In short, factors of influence on the attitudes of the leisure air traveler are:

- price
- safety and security
- flexibility(availability of peak time capacity)
- social status
- service.

*The business communication business* :

Another segment of the airline market is the business travel business. Business travel is defined as travel for which an employer is paying or travel of which cost is allowable against tax. Opposite to the leisure market, the business segment is characterized by frequent users (Shaw, 1982). The power of choice regarding the airline company to fly with lies with several different parties, namely: the executive and his or her secretary, a centralized travel buying office, or a travel agent (Shaw, 1982). Three sub-segments can be distinguished in the business travel market, namely: Corporate (large corporations) business travel, Independent (small independent business) business travel, Conference and incentive travel (Shaw, 1982). The difference between corporate and independent business travel lies in the fact that costs are a less important issue in the corporate business traveler's perception due to the fact that the costs of the ticket do not come out of his or her own pocket; the opposite is the case for independent business travelers (Shaw, 1982). In business travel, the factors of influence on attitudes and degree of importance of these factors differ in comparison to leisure travel. Whereas safety is a main issue in the mind of the leisure traveler, this can go to the back of the mind of the business traveler under certain circumstances. For instance when the competing airlines on a route are all mature, experienced carriers with good safety records

(Shaw, 1982). All in all, business travelers will often enjoy a life-style of comfort and affluence. They will naturally expect the airline they choose to be a reflection of this and therefore the travelers ask for comfort and luxury. They are attracted to prestigious, high status airlines, and will tend to avoid those which have built their reputation by flying the more price conscious leisure traveler (Shaw, 1982). It seems to be impossible to fully thrive on business travelers for an airline company because of the high degree of competition in this market segment. Next to this high degree of direct competition, the potential threat of substitute products like company cars and the railroad is present especially on intra-European routes (Shaw, 1982).

A distinction between three types of business travelers was presented earlier in this segment. Next to a distinction on type of traveler, a distinction on journey length can be made. In this case there are two types of business traveler, namely the short-haul business traveler and the long-haul business traveler. Next, further elaboration on these two specific segments will take place because the factors of influence on attitudes between these segments seem to differ.

#### Short-haul Business travel :

In the short-haul business market a distinction can be made between the point-to-point business traveler and the connection business traveler. The point-to-point traveler is traveling to another city where he will conduct his business and then return home (Shaw, 1982). The connection business passenger is only a short-haul passenger for a small percentage of his complete journey. The connection passenger makes a short-haul flight to connect between two long-haul flights (Shaw, 1982). Some factors of influence on attitudes are the same and some differ for the point-to-point and connection short-haul business passenger. Both types of traveler ask for a high frequency of conveniently timed flights (Shaw, 1982). However the exact significance of flight timings varies between the sub-segments of point to point and connecting passengers. Point-to-point air travelers demand peaks early and late during the day. Connection air travelers do not demand peaks (Shaw, 1982). Both types of short haul travelers find punctuality an important aspect. In the case of short haul point to point travel because of the need to arrive on time. In the case of short haul connecting travel because of the need to make connections with long haul travel (Shaw, 1982). Flexibility is also important for the short-haul traveler in general. If this facility is not offered, even a high frequency is of no value to the traveler. In short frequency, timings, safety, punctuality and flexibility constitute the five essential demands for the short haul business traveler. Some aspects are less important for the short-haul passenger. For instance price and journey comfort are low on this passengers list of demands (Shaw, 1982). As earlier stated, differences exist between the point-to-point and connection traveler. For the connection traveler carry-on baggage capability is less significant, in flight service is less important because this was already sufficient on the long haul trip, and seating comfort is of greater importance due to differences in product specification (Shaw, 1982).

In short, the factors of influence on the attitudes of the point-to-point short-haul business traveler are:

- Flexibility
- Frequency and timing: schedule convenience (peaks early and late during the day)
- Punctuality: need to arrive on time
- Safety
- Comfort (less important than in connecting travel)
- In flight service
- Price

The factors of influence on the attitudes of the connection short-haul business traveler are:

- Flexibility
- Frequency and timing: schedule convenience: (no specific peak demand)
- Punctuality: need of making connection with long haul flights
- Safety
- Comfort
- Efficient baggage handling (because of connections with other flights)
- In flight service (less important than in point-to-point)
- Price

Long-haul Business travel :

Long haul-passengers are confronted with other circumstances and longer journeys in comparison to the short-haul traveler. Boredom is one of the aspects which can come to service on a long-haul flight. Therefore, on very long flights, in flight entertainment facilities can greatly reduce this boredom (Shaw, 1982). Seating comfort and in flight service are also more important on long-haul routes in comparison to short-haul routes (Shaw, 1982). Just as in the short-haul segment, frequency and timing are highly important for the long-haul traveler (Shaw, 1982).

In short, the factors of influence on the attitudes of the long-haul business passenger are:

- Flight frequency and timing (preferred arrival time)
- Seating comfort
- In flight service
- In flight entertainment

*The distribution business* :

A third business segment of the airline business is the distribution business. The distribution business is the business segment dealing with air cargo. In contradiction to passenger travel, air transport faces intense competition from surface travel on all routes, long and short haul. In almost all cases, air freight will be significantly more expensive than the surface transport alternative if analysis is confined merely to a comparison of freight rates (Shaw, 1982). In spite of this fierce competition with surface transport and the high freight rates, air transport offers some advantages. First, air transport for instance asks for less packaging material, lowering the costs on this aspect. Second, air transport is seen as a mode of transport which offers favorable circumstances for transport. Because of this, insurance costs are relatively lower than on surface transport. And third, because of the high speed air travel offers, cash flow advantages exist. The goods arrive quicker on the place of delivery and therefore the money is received quicker in turn by the sender (Shaw, 1982). The use of air freight to minimize packaging and insurance costs and increase flexibility will only work if there is a substantial difference between environment for carriage and transit times using surface transport compared with air. This is mostly the case in long haul routes, but it may not be in short haul ones (Shaw, 1982). There are some disadvantages regarding air travel. Air freight travels only one way on a route. This can cause inefficiency. Directional imbalances can become especially severe on routes to and from countries which are primary producers (Shaw, 1982). A further problem of air freight travel is the fact that freight is extremely heterogeneous, it varies in every possible way like size and product type. Again inefficiency can become a problem, in this case regarding the interior of cargo planes. The interior will need to be compatible with various types of products (Shaw, 1982).

There are three sub-segments in the distribution business, namely: emergency traffic, routine perishable traffic, and routine non perishable traffic (Shaw, 1982). Further elaboration on each sub-segment will follow in the according segments.

Emergency traffic :

Emergency traffic is traffic which is so urgent that air freight has to be employed as normally the fastest mode of transport. The extra costs of using air rather than surface transport are less important than securing the fastest possible transit time (Shaw, 1982). There are two types of emergency situation, namely: operating emergencies and marketing emergencies. Operating emergencies occur when a company has to rectify an operational problem. Marketing emergencies occur when a supplier is in danger of missing a deadline or one of its important customers has expressed dissatisfaction with service levels (Shaw, 1982). Emergency traffic is both high yielding and demanding and costly. The specific characteristics of this rather unpredictable market segment ask for several investments in equipment and personnel in order to fulfill the demands of the emergency traffic customer.

The factors of influence on the attitudes of the emergency traffic customer are:

- Speed
- Flexibility(cargo space)
- High frequency
- Punctuality ( cargo should be flown on the flight on which it is booked)
- Professionalism (safe and reliable ground handling)
- Service (Comprehensive collection and delivery service)

Routine perishable traffic :

Routine perishable goods are goods that remain saleable for a strictly limited period of time. There are two types of perishable goods, namely: physically perishable goods and economically perishable goods. Physical perishability describes situations where goods physically deteriorate over time. Economic perishability describes situations where goods do not deteriorate physically, but when the life cycle within which they remain saleable is a short one as is the case with consumer electronics for instance (Shaw, 1982). Airlines offering flights to this market segment need to be flexible because of the fact that physical perishable goods are offered seasonally. High service quality is very important in the routine perishable goods segment, but the lack of price sensitivity should not be exaggerated (Shaw, 1982).

The specific factors of influence on the attitudes of the routine perishable market segment are:

- High service quality
- Professionalism(special handling)
- Flexibility (available capacity in seasons)
- Punctuality (certainty about flight bookings)
- Price

Routine non perishable traffic :

Most goods which move in international distribution are routine, non perishable goods. Spare parts for cars could be an example. In the "routine non perishable" freight segment surface transport often provides a viable alternative for the exporting company because there is no overriding urgency to use air freight to obtain the fastest possible transit time(Shaw, 1982). Making the choice for air travel involves the acceptance by a company of a total distribution

philosophy based on low stockholding and higher transport costs (Shaw, 1982). Besides this, the earlier mentioned general benefits of air travel in comparison to other modes of transport can be considered in this market segment.

Speed and reliability are of crucial importance in routine non perishable air freight. Besides this, the routine non perishable segment tends to show markedly greater price sensitivity than its routine perishable and emergency counterparts because of the surface transport alternative (Shaw, 1982).

The factors of influence on the attitudes of the routine non perishable market segment are:

- Speed
- Price
- Reliability

#### § 4.3.3 Conclusions on consumer behavior

Different types of customer groups have different needs. Therefore their behavioral driving forces differ and they assumably will react differently to different situations. It will be important to take this into account in the development of an instrument dealing with sustainability. For instance, it is assumable that the emergency traffic market will react differently to price changes than the routine perishable and routine non perishable markets because price is not a basic factor of influence on the attitudes of the emergency traffic customer, which is the case for both other markets.

In the context of a thesis on sustainability it is interesting to note that environmental issues do not seem to be directly of influence on the attitudes of the various airline customer segments. But because next to attitudes the influence of social norm and context on behavior also is important, it can be assumed that developments this area on sustainability can be of influence on the behavior of the airline customer. In short it seems that environmental consciousness is no direct factor of influence on the behavior of the European airline customers, but theoretically could be an indirect one through contextual influences.

The next chapter will deal with the development of the instrument. The findings on consumer behavior in this segment will serve as input for the formulation of assumptions on how different customer groups could possibly react to different contextual changes and circumstances in the political and market environment. Further elaboration takes place in the next chapter.

## § 4.4 The Market Situation

### § 4.4.1 Introduction

In chapter 1 the importance of the market situation became clear. The degree of competition determines the degree of space for sustainable initiatives. In the previous chapter it became clear that the threat of new entrants, suppliers, buyers, product substitutes, and the intensity of rivalry among competitors are all factors determining the degree of competition in a certain market. Of these factors, direct competition turned out to be most important. Because it was too extensive to analyze all five factors in the context of a graduation project and because of the fact that this research is conducted from a game-building perspective the choice was therefore made to see direct competition as the determinant factor for the degree of competition.

This section will answer the following additional research question:

*“Which core products does the European airline industry encompass and what are their characteristics?”*

Answering this question will provide input for the instrument to be developed regarding the possibilities on exploitation of several products users of the instrument will have while using the instrument. Further elaboration on this matter will take place in the next chapter.

### § 4.4.2 Empirical analysis on the market situation

To fulfill the needs of their customers, European airline companies have the possibility to exploit several types of aircraft. To determine which aircraft types are important for the European market the choice was made to take the Airbus company as starting point. Airbus is randomly picked. There are two families of aircraft types important for the European market. One family of aircraft is narrow-body, and one family is wide-bodied. The narrow-body jets are labeled as the Airbus 320 family. The wide-body jets are labeled as the Airbus 300/310 family ([www.airbus.com](http://www.airbus.com)). When comparing Airbus to one of its competitors, Boeing, some remarks can be made ([www.boeing.com](http://www.boeing.com)). Both companies offer some comparable planes but in general Airbus has a larger product range of smaller aircraft whereas Boeing has a larger product range of bigger aircraft. This could be changing seen the fact that Airbus recently made a stand in the wide-body segment by introducing the A380. The economic lifetime of an airplane can get up to 25 years. Its value at that moment in time can get up to 25% of the initial value ([www.iex.nl](http://www.iex.nl)).

The interiors of the airplanes differ according to customer groups, namely business class and economy class. Business class seats occupy more space than economy class seats. Therefore the consequence of having more business class seats will be, having fewer seats in total. A third option of interior is a cargo interior. The capacities for both narrow- and wide-bodied airplanes are presented in the following segments.



*Narrow- body planes*

The different combinations of seat- types and the consequences for the total aircraft interior of choosing business class seats in narrow-body planes are represented in Table 4.1 and Table 4.2.

Aircraft Type	Number of Seats With 1 Class	Number of Seats With 2 Classes	% of capacity loss for using Business Class
318	117	107	8.5
319	134	124	7.5
320	164	150	8.5
321	199	185	7.0
Average	153.5	141.5	7.8

Table 4.1 : Capacity loss for using 2 Classes in narrow-body planes.

Aircraft Type	Total number of Seats	Number of Business Class seats	% Business Class seats
318	107	8	7.5
319	124	8	6.5
320	150	12	8,0
321	185	16	8.6
Average	141.5	11	7.8

Table 4.2 : Occupation level of Business class seats in 2 class in narrow-body planes.

As can be seen in table 4.1, the total number of seats is reduced on average by 7, 8% if a narrow-body aircraft contains two Classes in comparison to one Class. If an aircraft contains two classes, on average 7, 8% of the seats are Business Class as can be seen in Table 4.2.

*Wide-body planes*

The different combinations of seat- types and the consequences for the total aircraft interior of choosing business class seats in wide-body planes are represented in Table 4.3 and Table 4.4.

Aircraft Type	Number of Seats With 1 Class	Number of Seats With 2 Classes	% of capacity loss for using Business Class
300	298	266	10.7
310	247	240	2.8
Average	272.5	253	7.2

Table 4.3 : Capacity loss for using 2 Classes in wide-body planes.

Aircraft Type	Total number of Seats	Number of Business Class seats	% Business Class seats
300	266	26	9.8
310	240	28	11.7
Average	253	27	10.7

Table 4.4 : Occupation level of Business class seats in 2 class wide-body planes.

As can be seen in table 4.3, the total number of seats is reduced on average by 7, 2% if a wide-body aircraft contains two Classes in comparison to one Class. If an aircraft contains two classes, on average 10.7% of the seats are Business Class as can be seen in Table 4.4.

### *Cargo planes*

The Airbus 300/310 series was used as an empirical basis for the wide-body passenger planes in this thesis. In this family of aircraft also a cargo variant is available. This plane is capable of carrying 48 tonnes of cargo, or 25 pallets ([www.airbus.com](http://www.airbus.com)).

The Airbus 320 family was used as an empirical basis for the narrow-body passenger planes in this thesis. In this family of aircraft no full-cargo variant is available. Elaboration on the complications this will bring for the introduction of narrow-body cargo planes in the instrument will follow in the next chapter.

#### § 4.4.3 Conclusions on the market situation

Merely presenting the reader with aircraft types would of course be insufficient for an actual market analysis, whereas in this research it will be, because of the game-building motives on which this research is based. In short there seem to be two types of aircraft, wide-bodied and narrow-bodied. Within these two families different configurations of interior exist. An airline can choose to fully exploit the economy class market or exploit the business market too, regarding passenger travel. Next to passenger airplanes cargo planes exist in the wide-body family. The narrow-body family does not seem to encompass an aircraft fully designed for cargo. The choice for interior determines which customer market is to be entered. And as could be seen in the section on airline customers, different customer groups have different demands. If the choice is made only to enter the leisure market, factors like safety turn out to be important. Therefore an airliner entering this market most likely will need to invest in measures communicating their perception of importance for safety and their efforts to guarantee this safety in order to reassure their customers that their service is safe. However, if an airliner chooses to enter the cargo market, factors like professionalism can turn out to be of importance. Airliners entering this market most likely will be confronted with investments in specialized equipment and training of personnel in order to guarantee this professionalism to their customers. In addition it needs to be noted that the choices made by competition also will be of importance because direct competition turned out to be an important factor. If a competitor enters the market of an airliner, it means fewer customers for this specific airliner. Therefore it is not only about choosing your plane, it is about choosing a market with the accompanying strategies regarding investments and reactions to decisions of competition. Examples of choosing different markets and strategies can be seen in the case of the rise of price fighters like Easy jet. By keeping it simple they created a new market, stepping away from the competition of the established order.

In the next chapter the empirical findings of this section will be converted in such a way that they can be used in the instrument to be developed. Further elaboration on how this actually will be done will follow in chapter 5.



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## Chapter 5 : *Game Building*

### § 5.1 Introduction

This chapter will deal with the actual development of an instrument that is intended to contribute to the creation of one vision regarding sustainability.

One of the limitations of research in general are the demands posed upon it by the clients. In the case of this thesis, the client is asking for a board game dealing with sustainability in the European airline industry. The client wishes that this game is not computerized but is physically playable like an actual board game like monopoly for instance. Therefore two goals exist, the goal of the client and the goal of the thesis. The goal of the client is receiving the actual game, and the goal of the thesis is developing an instrument that can contribute to the creation of one vision regarding sustainability among the actors of the European airline industry taking into account the market and political situation that these actors are facing.

To make this thesis academically sound and valid it is important that these two goals converge. If the limitations posed upon it by the client endanger its academic validity its value will be negligible. The discussion in chapter one and the elaboration on methodology in chapter two showed that these two goals can in fact be converged and do not exclude each other's fulfillment in one way or another. The findings of the first two chapters showed that an instrument in the form of a game could possibly contribute to the creation of one vision regarding sustainability among the actors of the European airline industry by offering a simplified way to create an insight into the dynamics of sustainability in this industry. It could also possibly create a platform for discussion on future topics of research.

This thesis presented factors that need to be taken into account when developing a game dealing with sustainability in a certain industry. First, this chapter will present elaboration on how these factors can be molded into a game on sustainability with in this case, the European airline industry functioning as an example. Second, this chapter will present the actual resulting game itself.

### § 5.2 *Understanding dependencies*

Several important factors of influence on sustainability issues were pinpointed in the previous chapters. These factors are: The political context, the market situation and consumer behavior. These factors are dependent to each other to the extent that they are part of each other's context. In chapter 3 it was determined that context is of influence on the behavior of the actors in this context, whereas the actors in a certain context are of influence on the developments in this context for the fact that contexts are socially constructed. The market situation and the political environment were determined as the determinant factors in a consumer's context. Therefore developments in these two areas are of influence on the behavior of the consumer. The market situation and the political environment in turn are socially constructed for the consumers in this context. Therefore consumers are of influence on the developments and circumstances in these two areas.

In chapter 3 it was stated that the determining actors in the political context are the political parties, whereas in the market situation the determinant actors are direct competitors. The contexts of these two actors are of influence on their behavior, and their behavior is of influence on their context. In the market situation, for instance, direct competitors will be sensitive to other direct competitors' behavior, suppliers' actions, substitute products, new entrants and consumer behavior. In turn these factors can be influenced by the actions and behavior of direct competition because actors determine their context. Therefore in this example, direct competition has the possibility to react to, and influence the developments in the market situation by changing its behavior. Different modes of behavior will present different outcomes in the actor's context, and different outcomes in the actor's context will

present different opportunities and threats for the actual actor. Therefore the behavior of an actor will partly determine its own future opportunities.

Because three factors are of importance in the case of sustainability issues, three contexts can be distinguished, namely: the political parties' context, the direct competitors' context and the consumers' context. Therefore, when developing a game on sustainability it is important to determine from which perspective participants of the game play the game. Do they play from the perspective of the politician, the airline executive, the consumer, or all three actors? The choice of a certain perspective will determine which factors specifically need to be taken into account in the development of a game.

### § 5.3 *Developing a game*

Simplifying reality by developing a simulation game asks for several factors to be taken into account. The segment above presented two important aspects that need to be taken into account, namely the context on which the game is based and the perspective through which this context is observed. This segment will deal with the choice and development for a perspective and context.

#### § 5.3.1 Choosing a perspective

As stated earlier, four options exist when choosing a perspective, namely: the perspective of the politician, the airline executive, the consumer, or all three actors. In the context of this thesis it would be too extensive to deal with all three perspectives due to the time limits posed upon this research project. Because the focus of this thesis lies on the European airline industry, choosing the perspectives of the politician or the consumer would be too general. The game developed in this thesis intends to provide a means for the users of the game to create an insight into the dynamics of sustainability in the European airline industry. Therefore the choice is made to use the perspective of the airline executive. This perspective is specifically focused on the European airline industry instead of the two other perspectives which present a more general view on sustainability.

#### § 5.3.2 Choosing a context

Looking through the eyes of a European airline executive takes the users of the game into the world of the European airline industry. In the first chapter it was determined that the political climate was the determinant contextual factor in general. Therefore this climate will determine the context of the European airline industry. In turn this industry is the context of the European airline executive. One could speak of a context within a context. A nice metaphor could be an onion with its several layers as presented in figure 5.1.

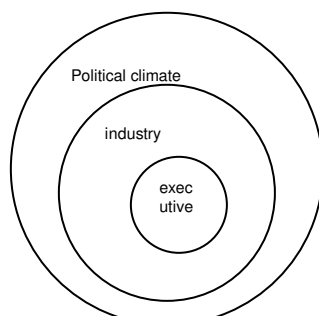


Figure 5.1: The contextual onion

The European political climate determines the circumstance for the European airline industry and the European airline industry determines the circumstance for the airline executive. Therefore the European political climate also determines the circumstance for the airline executive as its indirect context. The direct context of the airline executive is the airline

industry. The factors which are important in this context were presented in chapter 3. These factors are the threat of new entrants, suppliers, buyers, product substitutes, and the intensity of rivalry among direct competitors. A look at the contextual onion tells us that developments in the political climate will influence the developments on an industry level. Developments in the behavior of the industry actors in turn will influence the opportunities and threats for each of these actors. As stated in chapter 4 it was too extensive to analyze all five factors in the context of a graduation project. Therefore the choice was made to see direct competition as the determinant factor on an industry level. The users, or players, of the game together form this direct competition. Playing the role of a European airline executive, the players are sensitive to developments in the behavior of each other and the other four fictive actors of the industry within a larger political context. The ways to which the fictive actors react to contextual developments are based on assumptions.

### **§ 5.4 Operationalizing a game**

It became clear that both context and perspective are factors that need to be included in the development of a game on sustainability. Therefore this segment will first present the function and influence of context in the game. Second, it will present the role of the player, and the several possibilities each player has to react to contextual developments while playing the role of an airline executive.

#### **§ 5.4.1 Building a context**

The previous segment explained how contextual layers are of influence on the actors in this context and vice versa. Because context is of influence on the behavior of the actors in it, the choice was made to develop four possible political contexts on which further elaboration took place in chapter 4. The analysis in chapter 4 resulted in four different political contexts, namely a: left, left-centre, right-centre and right wing political Europe. These political contexts are the result of a theoretical analysis of the programmes of the European Parliamentary parties on sustainability issues. As was presented in the theoretical outlining of this thesis, people, planet and profit issues are the main sustainability factors. Analyzing the party programmes on these three factors resulted in input for the formulation of several contextual scenarios. For all four individual political climates several contextual scenarios based on the political party programmes were developed. This resulted in 47 different contextual scenarios'. These scenarios are presented in the appendix of this thesis. The number of scenario's for each political climate depended on the degree to which sustainability issues were present in the party programmes. To avoid discrepancy between climates, blank cards were introduced. These blank cards offered the opportunity for an equal amount of happenings for each climate. These blank cards offer the opportunity for introducing the aspect of a situation in which nothing occurs in the game. This function comes in use in the less turbulent political environments. By drawing a blank card the player can become aware of the differences between turbulent climates in which a lot of possible things could happen and more quiet climates. By analyzing the party programmes, assumptions on possible contextual occurrences were made. In left-wing Europe, for instance, woman participation in the workforce is a main issue. A possible contextual situation could involve players having to face a situation regarding woman employment. Further elaboration on the specific appearance of these scenarios will take place in the "presenting the game" segment.

#### **§ 5.4.2 Building a perspective**

Because in reality actors are part of their socially constructed context, and therefore can influence this context, players of the game must be offered several means to react to their context. Players of the game will have the choice to buy core products and make investments in sustainability issues while playing the role, and looking through the eyes of an airline executive.

### § 5.4.2.1 Core products

As earlier stated the players of the game form the direct competition in the European airline industry by fulfilling the role of airline executives. Chapter 4 presented the core products that are exploited in reality by airline companies. As in real life the players of the game will be able to exploit several core products as well as substitute products, being transportation means other than aircraft. The choice for substitute products was made to make the players aware of the possibility for alternative modes of transport under certain circumstances. Developments in the players' context could for instance surface transport instead of air travel by means of government initiatives. The core products in the game are based on the aircraft types in reality. The findings of chapter 4 resulted in 6 types of planes players can buy while playing the game, namely:

- narrow-body 1 class airplanes
- narrow-body 2 class airplanes
- narrow-body cargo airplanes
- wide-body 1 class airplanes
- wide-body 2 class airplanes
- wide-body cargo airplanes

Narrow-body 1 class passenger planes will have the carrying capacity of 50 passengers. This number is randomly picked. The other passenger capacities are based on the percentages on carrying capacity ratio's presented in chapter 4 with narrow-body 1 class planes as starting point.

As can be seen from Table 4.1, 1 Class narrow-body planes have a total number of 153.5 seats on average. As can be seen from table 4.3, 1 Class wide-body planes have a total number of 272.5 seats on average. Therefore in the game wide-body planes will approximately be  $272.5/153.5: 1.775$  times bigger in terms of seats than narrow-body planes. As can be seen in table 4.1, the total number of seats is reduced on average by 7, 8% if a narrow-body aircraft contains two Classes in comparison to one Class. If an aircraft contains two classes, on average 7, 8% of the seats are Business Class as can be seen in Table 4.2.

As can be seen in table 4.3, the total number of seats is reduced on average by 7, 2% if a wide-body aircraft contains two Classes in comparison to one Class. If an aircraft contains two classes, on average 10.7% of the seats are Business Class as can be seen in Table 4.4. The Airbus 300/310 series was used as an empirical basis for the wide-body passenger planes in this game. In this family of aircraft also a cargo variant is available. This plane is capable of carrying 48 tonnes of cargo, or 25 pallets ([www.airbus.com](http://www.airbus.com)). Therefore, in the game a wide-body cargo plane will be able to carry 25 units of cargo.

The Airbus 320 family was used as an empirical basis for the narrow-body passenger planes in this game. In this family of aircraft no full-cargo variant is available. But in the game players will have the opportunity to invest in narrow-body planes. Therefore in the game narrow-body cargo planes will be able to carry  $25/1.775: 14$  units of cargo. Because wide-body passenger planes have 1.775 times the carrying capacity of narrow-body passenger games, the assumption is made that wide-body cargo planes would also have approximately 1.775 times more cargo carrying capacity than narrow-body cargo planes.

Combining these percentages eventually results in table 5.1, which presents the carrying capacity of the various planes.

Aircraft type	Total number of seats	Number of economy class seats	Number of business class seats	Cargo capacity in units
Narrow-body 1 class	50	50	0	-
Narrow-body 2 class	46	42	4	-
Narrow-body cargo	-	-	-	14
Wide-body 1 class	90	90	0	-
Wide-body 2 class	84	75	9	-
Wide-body cargo	-	-	-	25

Table 5.1: aircraft capacities in the game

#### § 5.4.2.2 Income and costs

The exploitation of the various types of aircraft will result in income for the players. The incomes players receive are not based on empirically bound figures. The intention of the game is to create an insight on sustainability in the airline industry. Making it too complex could possibly hinder the fulfillment of this intention. Therefore the choice was made to choose for easy and rather low figures for income. To make the game playable at the starting minutes of the session, incomes from each type of narrow body plane fluctuate around €1000,-. The incomes for each player are determined per seat or cargo unit. The income per economy class, or leisure seat is €20,- and the income per business class seat is €40,-. The income per cargo unit is €70,-.

The exploitation of planes costs money. Players need to purchase and maintain their planes. Purchase and maintenance prices are not based on empirical figures, but on the degree of playability of the game for reasons explained above. Prices vary from €600,- for a single class narrow-body plane, up to €1100,- for a two class wide-body plane. Basic maintenance costs are €200,- and will vary depending on choices made by the player regarding investments while playing the game.

#### § 5.4.2.3 3p Investments

The players of the game are confronted with several contextual developments on sustainability issues, namely people, planet and profit occurrences. In the game players are offered a means to react to these developments by making investments in these areas. The possibility of reacting to these contextual developments will hopefully contribute to an increasing insight on these issues. Having made more or less investments in a certain area will influence the outcomes of several contextual developments. To return to the women employment situation for instance, in a left-wing Europe, having made investments in people players could have prevented receiving government fines for not complying with this issue for instance. Further elaboration on the effect of investments will follow in the “presenting the game” segment.



## § 5.5 Presenting the game

The previous segment explained how the findings of this thesis can be molded into a game. The following segment will present the actual outcome. First a description of the scenario's representing the contextual developments will be given. Players can react to these scenarios in several ways. Therefore, second the possibility of making investments and buying products in the form of certificates and product cards will be explained. Third, the rules of the game will be presented in order to explain how possession or the lack of possession of product cards and certificates influence the outcomes of the contextual occurrences with which players will be confronted while playing the game. To conclude this chapter the actual game deck is presented.

### § 5.5.1 The scenarios

Players are confronted with several scenarios during the game. An example of such a scenario is :

#### People Situation: Terrorism

In right-wing and right-centre Europe, safety is a main issue. Due to the growing media attention to terrorism, citizens want their environment to provide safety and security.

#### *Effect:*

This situation will both effect players who invested in passenger business travel, and players who invested in passenger leisure travel.

The hijacking of a plane by terrorists has caused concern amongst business and leisure travel. Safety is a basic need for both the short-haul business traveler and the leisure traveler, although it is more important to the latter.

#### *Influence of certificates:*

- 0 people certificates : If a player did not invest in people certificates, he or she did not take and communicated investments in safety measures on his or her flights. The player will lose the income of 2 business seats and 4 leisure seats for one play round.
- 1 people certificate : If a player owns 1 people certificate, some measure are taken regarding safety on flights. Although these measures are enough for the business traveler to keep flying, they still are not sufficient enough to comfort the leisure traveler. Therefore the player will lose the income of 4 leisure seats for one play round.
- 2 people certificates : If a player owns 2 people certificates, extensive measures were taken to guarantee passenger safety during flights. Both business and leisure passengers have faith in this player and will keep traveling by air.

In the scenarios first an empirical description is given of how certain issues return in the political programmes of left-wing, left-centre, right-centre or right-wing Europe. Based on this, a fictive occurrence and its possible effects are presented. The last part of a scenario's card presents the way of how players can react to this situation. As can be seen there are differences in the degree of impact of certain occurrences varying by the amount of investments a player has made in this area. Different colors represent different types of scenarios to visualize the type of scenario a player is confronted with. Red corresponds with people scenarios, green with planet scenarios and blue with profit scenarios. How many

times and when players are confronted with these scenarios is described in the “rules” segment.

### § 5.5.2 The certificates and product cards

As earlier stated, players can buy core products. In the game these products are represented by product cards. Figure 5.2 is an example of such a card. All product cards are presented in Appendix B.

<b>Product card</b>	
Aircraft type	: Narrow-body 1 Class
Price	: € 600
Capacity	: 50 leisure seats

Figure 5.2: Product card

A product card describes the type of aircraft, its price and its capacity. The income per aircraft type varies by its capacity because the income is calculated per passenger or cargo unit. Players also have the opportunity to enter alternative modes of transport markets. In the game this is presented by a specific product card for substitute products.

Next to buying core products, players have the opportunity of making investments in sustainability aspects. In the game this is presented by the possibility of buying so-called certificates. The initial idea of certificates comes from an earlier conducted research on the retail market conducted by the science shop of the University of Groningen (Kolesar, Sijtsma, 2003). Adapted to this thesis, these certificates represent investments in people, planet or profit aspects. As was the case with the scenarios, different colors represent different types of certificates to visualize the type of certificate a player is confronted with. Red corresponds with people certificates, green with planet certificates and blue with profit certificates. An example of a people certificate is given in Figure 5.3. Planet and profit certificates maintain the same principle. All types of certificates are presented in Appendix C.



Figure 5.3: Certificate

To represent the fact that more thorough investments cost more, the first certificate on buys for a certain sustainability aspect costs €400,- and the second costs €800,-. Thereby, thorougher investments ask for more effort from the players. Investing in certificates will enable the player to deal with certain contextual circumstances. Positive effects vary from gain of market share to decreasing costs and fines.

### § 5.5.3 The rules

Every game needs rules. What would Monopoly be if everybody just decided their own amount of wealth for instance? The rules of the game subject to this thesis explain to the player, and in this case to you the reader, how every little aspect regarding income, costs, fines, subsidies etcetera works. The rules are as follows:

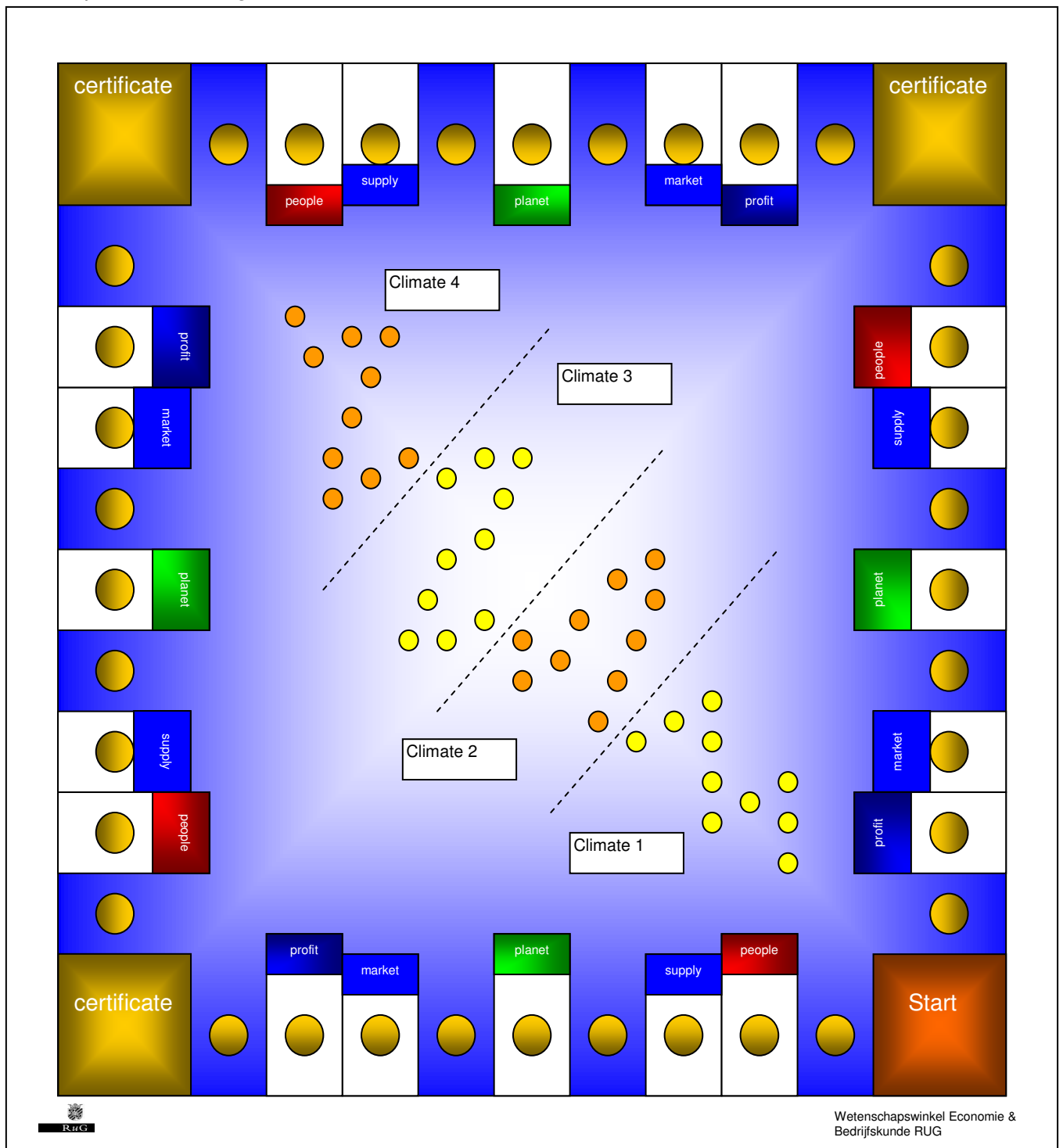
#### *Rules of the game*

1. The game will consist of 5 players, 4 of which will be representing an airline company and 1 who will represent the arbitrary role, the bank.
2. Players will start with a budget of 600 Euro, which they can invest in airplanes, substitute products and various certificates. Players do not have credit; therefore investments with negative bank accounts can not be made.
3. The game will need one person playing the bank. The bank will keep track of the investments made by the players and will pay each player the amount of money they earned during the last playing round. Other responsibilities of the bank will become clear during the presentation of the remaining rules.
4. Each playing round will represent 1 time period  $t$ .
5. Each player can invest in narrow bodied jets, wide bodied jets and substitute modes of transport. The players will have several choices regarding the type of interior of their plane. The interior of substitute modes of transport does not need to be chosen because in this game having substitute transportation modes will be seen as a general investment in alternatives to air travel. Players will have the choice of several predetermined types of interior varying from only economy seats, a combination of business and economy seats or a cargo interior.
6. Earnings resulting from the use of the different types of plains will differ according to size. Earnings resulting from the use of the different types of interior will represent a non-empirically bound amount of money. The earnings a player receives will also depend on the market situation. Every market segment in the game will consist of a fixed amount of travelers or customers. These travelers and customers (and their expenditures) will be divided among the players relatively to the types and number of seats or cargo room the different players own. The players receive €20 per leisure traveler, €40 per business traveler and €70 per cargo unit.
7. Players can buy new core products from the bank on 4 according "supplier spots" in the playing deck. Payment will be collected by the bank. Distribution of new product cards will also be provided by the bank. Before throwing the dice for the first time, players have the possibility to choose 1 type of plane.
8. To keep their planes in the air players will need to pay fuel, maintenance and variable costs each play round. This results in a total amount of €200 each player has to pay after receiving his or her earnings at the end of every play round.
9. Players can buy second hand core products from each other on one of the 4 "market place" positions on the deck. Players can voluntarily place a bid on other player's products when the bidding player is standing on a market place. The receiving player will be free to accept or deny the offer. The market value of a product will be a product's initial value reduced by 10% of the previous market value per time period. Bids lower than 90% of the market value can not be accepted.

10. Players can buy people, planet and profit certificates along each playing round on the according 12 positions on the deck plus 3 extra general certificate positions. Possession of certificates will influence the effect of contextual developments, depending on the number of certificates a player owns. There will be 4 buying positions on the playing deck for each individual type of certificate. Certificates will be distributed by the bank. Payment for the certificates will be collected by the bank. Besides the assigned “special” positions on the deck all players have the possibility to buy whatever type of certificate desired on each of the 3 “certificate” positions.
11. Profit certificates will represent investments in the quality of a player’s product range and the accompanied product support. Product and market research are examples of possible investments represented by these certificates.
12. People certificates will represent investments in stakeholder relationships. The possession of this type of certificate will enable a player to (partly) deal with situations in his or her social context. For example, employee strikes will effect players with no certificate in this area to a bigger extent than players that posses these certificates.
13. Planet certificates will represent investments in the environment. Investments in fuel efficiency research and research in sustainable market niches are examples of these kinds of investment. Another possible example could be that owning these certificates will make market entry into a more environmentally friendly transport market less costly and difficult.
14. When standing on a buying place for certificates, the player must draw an according scenario card. For example, if a player is standing on a planet certificate position he or she must draw a planet scenario card. These scenario’s will represent the current contextual situation (further elaboration on contextual situation is provided for in rule #15).
15. Several contextual situations at landscape level will occur during the game. A separate context route line on the deck will represent the context. Every time a player stands on a situation spot on the deck a pawn is moved 1 position along this context line. The context line is divided in 4 contexts, separated by three borders. Each of these borders represents political elections. When crossing a border, a new political environment is entered.
16. Contextual occurrences will influence the player’s income directly or indirectly in positive or negative ways. Reacting properly to an occurrence can result in an increase of market share by gain of income of seats or cargo units, decrease of fuel, maintenance and/or variable costs or the receivment of government subsidies. Reacting improperly can result in a decrease of market share by loss of seats or cargo units, increase of fuel, maintenance and/or variable costs or payment of government fines. The amount of money involved in fines and costs as well as the income of seats and cargo units gained or lost will vary according to the degree in which the player reacts properly or improperly to the given occurrence. Fines can get as high as 100 euros per playing round. Subsidies can get as high as 100 euros per playing round. Increases in costs can get up to 100 euro just as that decreases can get up to 100 euro.
17. The game will end if the context line is finished or when all but one player are out of money. A player is bankrupt when after payment of income and subsidies his or her bank account is negative.

§ 5.5.4 The deck

The different factors presented in the rules of the game eventually result in a game deck. The deck is presented in Figure 5.4



## Chapter 6 : *Gaming*

### § 6.1 Introduction

To test if the developed game could actually fulfill the goal of this thesis and make a contribution to the development of a shared vision on sustainability, three game sessions were conducted. These sessions were played with different people, with different backgrounds in different settings on different locations. This was done to examine if the game has different outcomes with different types of people. This is relevant because the game intends to bring different types of people together on the subject of sustainability.

### § 6.2 The game sessions

Three game sessions were conducted. The first game session was conducted with experts on simulation models and sustainability, the second session was conducted with a group of environmentalists with varying ages and experience, and a third session was conducted with a group of management and organization students. The remaining of this segment will discuss the individual sessions and present the according findings of these sessions.

#### § 6.2.1 The expert session

The expert session was conducted with two of this graduation project's supervisors. One expert on sustainability and simulation Dr. Jager, and one expert on sustainability Drs. Sijtsma. Both experts have been, and are, involved in various projects on sustainability and simulation on a national and international basis.

During this session the main goal was to test the playability of the game and its possible potential to provide players with an insight on sustainability. This game was conducted with a beta version of the game. The outcome of this session was satisfying. It turned out that the game was rather enjoyable to play and indeed showed the potential to provide future players with an insight on sustainability. During this session the possibility of making some minor adjustments to the beta version of the game was discussed. The most important adjustment was that the choice was made that a scenario card drawn by one player will effect all players in order to create a sense of operating in one shared market. The beta version did not yet encompass this aspect.

In short it turned out that the game actually worked and showed potential to fulfill the goal of this thesis. The findings of this session were used to adjust the beta game to a final game version.

#### § 6.2.2 The environmental session

The environmental session was conducted during an environmental conference in Brussels, titled: "The sky has a limit". Participants consisted from members of national and international environmental NGO's from across Europe. They varied in age and experience. Topics discussed at this conference were airports, air travel and climate change. During this conference two game sessions were played.

To fulfill the goal of this thesis, "To develop an instrument that can contribute to the creation of one vision regarding sustainability among the actors of the European airline industry taking in to account the market and political situation that these actors are facing", it is important to find out if the game shows potential to actually make this contribution. To achieve one vision on sustainability it will be important that every participant begins to understand the concept of sustainability and the accompanying complexity it brings with it in a certain context. Therefore the game needs to facilitate a means of providing insight on this matter to the participants. The game intends to do this by the earlier discussed scenarios and the several possibilities given to the participants to react to these scenarios. Next to this, the game

needs to facilitate a discussion in order to achieve a shared vision amongst the several participants.

To find out if the game actually does what it is designed for, two questions are dealt with in a group discussion after each game session. These questions are:

Question 1 : *Does the game create an insight into the dynamics of sustainability?*

This question tries to find out if by playing the game it becomes clear that the term sustainability encompasses different aspects and that different political climates offer different contexts regarding these aspects.

Question 2 : *Does the game facilitate discussion?*

This question tries to find out if people start talking, and discuss the several aspects of sustainability. This will be necessary to achieve a shared vision. People need to explore each other's beliefs and apply these findings to their own. Understanding the standpoints of one another will be important if the goal is agreement amongst each other.

*Findings* :

Both sessions had different outcomes. The first session consisted of a group of young environmentalists. The discussion following the first session gave a positive answer to both of the earlier mentioned questions. According to this session, the game actually provided insight in different aspects of sustainability. It became clear that all three triple bottom line factors, people planet and profit, are important in the discussion on sustainability. One participant actually stated that she was surprised of the fact that she, despite the fact of being an environmentalist, started to think as an airline executive whilst playing the game. This result is what the game is designed for, namely increasing the understanding for other groups of actors in a market. During this session the game also led to discussion on various topics. The topics of these discussions were mainly about the different ways and frequencies the different aspects of sustainability could be seen in different political contexts. Personal contact offered by playing the game was seen as an important factor in the facilitation of a discussion.

The second session consisted of a group of older and more experienced environmentalists. The discussion of the second session led to different outcomes than the first one. According to this group the game was too scientific and too slow. According to them the game needs a greater variety of happenings and a quicker game play. According to this session the game made clear that profit is not independent from the environment and the people living in it. The participants of this session therefore were of the opinion that the game did create an insight on sustainability. They were of the opinion that the game is most suitable to increase the insight on sustainability amongst students. This group of participants was of the opinion that substitute products like the train were missing as individual options to invest in in the game. The game only provides the opportunity to invest in substitutes in general. In this case the game did not lead to a discussion although they found it amusing.

In short, the game seems to fulfill most of its tasks although not completely. Despite the findings of the second session, the game showed potential to fulfill the goal of this thesis during the sessions played in Brussels. Positive findings were that the game facilitated personal contact, which in turn turned out as an important factor for the establishment of a discussion. The game did provide players with a means of creating an insight on sustainability. Some negative aspects were that the game was perceived as too slow and too scientific and therefore needs a quicker game play and more variety. With the more experienced and older people a discussion was not established, although this was the case with the group of younger people.

### § 6.2.3 The student session

Taking the findings of the environmental session in retrospective some indications could be distinguished, indicating that the game might be more suitable for young people like students. To find out if the game could be suitable for this group of people a game session was conducted with a group of Management and Organization student at the University of Groningen. Students participating in graduation projects at the faculty of Management and Organization at the University of Groningen are all obliged to participate in graduation workshops. In these workshops individual pre-graduates get the opportunity to meet and discuss their projects. The student session of the game was conducted under the settings of such a workshop. This session was followed by a discussion of the same two questions formulated in the previous segment: does the game create an insight on sustainability and does it facilitate discussion?

#### *Findings* :

This session had some positive and constructive outcomes. It turned out that the game indeed provided the students with a means to increase their insight on sustainability. Their awareness on the importance of this subject seemed to be increased by playing the game. Whilst becoming aware of the different aspects of sustainability a discussion on the individual aspects of sustainability soon started. During this discussion it could be seen that students were becoming aware of the fact that it is not all profit that counts, but that aspects on people and planet issues should also be taken into account when running a business. Actively taking part in the game turned out to be a positive characteristic of the game design. Because of this active participation the students kept focused on the issues the game confronted them with, and their attention did not decline.

In short, the game seemed to function satisfyingly in this session. It provides the players with a means to increase their insight on sustainability and also facilitated a discussion. But in spite of these positive findings, also some negative aspects of the game came to surface during this session. The game turned out to be too difficult in some cases. It turned out to take a long time for the players to earn their first profit. This prevented them from having the possibility to react to certain situations because they had no money to invest in sustainable measures. This could possibly be caused by the players' limited starting budget; players could not directly choose to invest in people, planet or profit certificates because they needed this money to buy their first plane. Because of this the game lacked a strategic component at the first play round.

### § 6.3 Conclusions on the game sessions

In most cases the game does create an insight in sustainability and also facilitates discussion on this topic. Only in the session with the experienced environmentalists this seemed not to be the case. According to the findings of the various sessions played, the game seemed to function on its best with young and inexperienced people in the area of sustainability.

#### *Physical constraints*

Several options for the game's non optimal functioning in the experienced environmentalist session could be possible. It could be ascribed to the differences in experience and age of the participants. The game perhaps did not facilitate a discussion in this session because the participants in this session are rather critical because of their long time involvement and experience in this matter. Another reason could be that their view possibly is biased towards the planet aspect, again due to this long time involvement and experience.

For the participants in this session the game turned out to be too scientific and too slow. According to them the game needs a greater variety of happenings and a quicker game play. They believed substitute products like the train were missing as individual options to invest in



in the game. The game only provides the opportunity to invest in substitutes in general. When designing the game, the choice for this option was made because inclusion of substitute markets was believed to have a negative effect on the understandability, simplicity and playability of the game in its current form of a physical non computerized board game. The option for more variety of happenings is also limited because of the current form of the game. More variety would make the game too complex to understand and play within its current form. The game not facilitating a discussion in some cases could therefore be ascribed to its current physical form. Because the game intends to have an effect on all kinds of people, including experienced and biased people, further elaboration on these limitations of a physical board game will take place in the concluding chapter.

#### *Findings within the limits of a board game*

Within the constraints of a physical board game the game turned out to have some positive and some negative characteristics.

Positive findings were that the game facilitated personal contact, which in turn turned out as an important factor for the establishment of a discussion. The game did provide players with a means of creating an insight on sustainability. Actively taking part in the game turned out to be a positive characteristic of the game design. Because of this active participation the participants kept focused on the issues the game confronted them with, and their attention did not decline.

Negative findings were that the game turned out to be too difficult in some cases. It turned out to take a long time for the players to earn their first profit. This prevented them from having the possibility to react to certain situations because they had no money to invest in sustainable measures. This could possibly be caused by the players' limited starting budget; players could not directly choose to invest in people, planet or profit certificates because they needed this money to buy their first plane. Because of this the game lacked a strategic component at the first play round. This shortcoming could be easily solved within the game's current form. Introducing the option to buy certificates next to planes would introduce the desired strategic component. Players now can choose to keep their money or to invest in people, planet or profit issues from the beginning of the game.

In short, in spite of some minor aspects, the game seems to function properly within the possibilities of a non-computerized physical board game. Some shortcomings came to surface which could be ascribed to the limitations of this non-computerized physical form. Therefore the next and concluding chapter will discuss these limitations and possible developmental choices which could be made in the future to overcome these limitations by choosing other platforms for future games on sustainability.

## Chapter 7 : *Conclusions & recommendations*

### § 7.1 Introduction

To start this concluding chapter first let's re-introduce this thesis' main objective and main research question. The introducing chapters of this thesis resulted in the conclusion that a transition towards sustainability asks for the creation of one vision among the several actors participating in the process. Without this single vision a transition towards sustainability will be impossible for an industry and its context. In the development of an instrument that could contribute to the development of this shared vision several factors need to be taken in to account. These factors are the market situation, the political climate and consumer behavior. The instrument should be a simplified representation of reality in order to keep it understandable. Making it too complex will make it inoperable. These findings resulted in a main goal and main research question, being:

The main objective of this thesis is:

*“To develop an instrument that can contribute to the creation of one vision regarding sustainability among the actors of the European airline industry taking in to account the market and political situation that these actors are facing.”*

The main research question is:

*“To what extent are triple bottom line issues an issue for the potential sustainability transition actors in the European airline industry, and what opportunities and threats does this create for European airliners?”*

### § 7.2 Answering the main research question

Answering the main research question was fulfilled by the formulation of several theoretical sub-questions which in turn provided for four additional empirical sub-questions. It turned out that the extent to which triple bottom line issues are an issue for the potential sustainability transition actors in the European airline industry depends on the political climate. Four possible political climates were distinguished, namely a left-wing climate, a left-centre climate, a right-centre climate and a right-wing climate. Different issues are important in different political contexts. In left-wing Europe people are the most important sustainable issue, whereas in right-wing Europe profit is seen as a core factor. In both left-centre and right-centre Europe people, planet and profit issues are seen as important although planet seems to be slightly dominant in left-centre Europe whereas Right-centre Europe sees all three factors as equally important. These four possible political climates create different possible threats and opportunities for the transition actors in the European airline industry. Possible threats and opportunities are presented in the formulated scenario's which can be found in the appendices of this thesis.

The findings of chapter 3 concluded that consumer behavior is an important factor of influence on a sustainability transition, creating different opportunities and threats for European airliners. Therefore elaboration on the various customers of the European airline industry was needed. It turned out that there were 7 different customer segments in the European airline industry, namely the leisure segment, the point-to-point short-haul business segment, the connection short-haul business segment, the long-haul business segment, the emergency traffic segment, the routine perishable segment, and the routine non perishable segment. Different types of customer groups turned out to have different demands. Therefore their behavioral driving forces differ and they assumably will react differently to different situations. For instance, it is assumable that the emergency traffic market will react differently to price changes than the routine perishable and routine non perishable markets because

price is not a basic factor of influence on the attitude of the emergency traffic customer, which is the case for both other markets.

Because European airliners have a prominent part in the main research question it was believed to be important to determine their characteristics by distinguishing the range of existing products possible for them to exploit in the European airline market. This resulted in the findings that there seem to be two types of aircraft, namely wide-bodied and narrow-bodied. Within these two families different configurations of interior exist. An airline can choose to fully exploit the economy class market or exploit the business market too, regarding passenger travel. Next to passenger airplanes cargo planes exist in the wide-body family. The narrow-body family does not seem to encompass an aircraft fully designed for cargo.

### **§ 7.3 Fulfilling the main goal**

Answering the main research question provided input for the development of the instrument subject of the research goal. The findings of the first two chapters showed that an instrument in the form of a game could possibly contribute to the creation of one vision regarding sustainability among the actors of the European airline industry by offering a simplified way to create an insight into the dynamics of sustainability in this industry. It could also possibly create a platform for discussion on future topics of research.

The findings of this thesis showed that the instrument indeed shows potential to contribute to the creation of one vision on sustainability. In all game sessions it turned out to provide an insight in sustainability, and in most sessions it facilitated a discussion. Therefore the instrument seems to fulfill the goal of contributing to the creation of one vision on sustainability. Unfortunately valid conclusions on this possible contribution can not be drawn. Due to the limitations and constraints of this graduation project the findings could not be analytically measured. No analysis on possible interdependencies and causalities regarding simulation, sustainability and other factors could be conducted because of these limitations.

In general the game sessions showed that the game has some strengths, and some weaknesses in its current form. Some weaknesses can be easily improved within the constraints of the game's current physical form, but some ask for more radical changes. The lack of a strategic component at the start of the game is an example of such an easily fixable weakness. Active participation and personal contact are examples of strengths of the game. These strengths turned out to be of importance for the facilitation of a discussion and dialogue.

At the start of his research project the client wished that the game was not computerized but physically playable like an actual board game like monopoly for instance. The theoretical background presented in the first chapters showed that this theoretically would not endanger the fulfillment of the main research goal. Reality tells us that this indeed is true because the game actually seems to contribute to the creation of one vision on sustainability to a certain extent. In spite of these findings it seems to be necessary to reevaluate the game's current physical form. Yes, it does seem to contribute to the creation of one vision, but findings during the game sessions showed that this contribution could possibly be increased. The current contribution is a minor one because according to the findings of the game sessions the effect of the game is the biggest on young people with some or little experience on sustainability. The game sessions with more experienced and critical players showed that the limits of a physical board game constrained the degree of variety, complexity and therefore reality. To have the same effect on this group of people the game needs more variety, a quicker game play and more possibilities and choices. These factors need to be improved in order for the game to have an effect on a larger group of people. The game's current form does not allow these adjustments because increasing complexity and variety would make the game to complex and slow to play.

## § 7.4 Recommendations

According to the findings of this research adjusting the instrument's current form is recommended if it wants to have effect on a bigger audience. More variety, reality, complexity and speed are no option in the game's current physical form. Therefore it is recommended that future studies on this topic explore new and other ways in which a similar instrument can be embodied.

A way in which the desired factors can be introduced in a similar instrument could possibly exist in the domain of computerized simulation. Partly digitalizing the game will offer the possibility to include larger amounts of empirical data. This in turn can be used to increase the realisticity and variety of scenarios in the instrument. To prevent loss of the game's current strengths, personal contact and active participation, the human factor needs to stay involved in future simulation models.

### *Role playing games*

An example can be found in the present educational system. At the faculty of Management & Organization at the University of Groningen in the Netherlands every student at one time will be taking part in a role playing game called "the management game". In this game a group of students form the daily management of a fictive company. In this game the main focus lies on making a profit. Imagine the possibilities of such kind of a game which includes a sustainable component. Participants could, as in the management game described here, form the daily management of a company. A computerized simulation programme could present them with all kinds of different contexts, scenario's and situations to which they can react by making choices regarding their investments, their stakeholder relationships, their corporate identity, etc. Digitalization in this case could offer the possibility for the creation of far larger amounts of possible context's, scenarios and happenings than is the case with the instrument subject to this thesis. In this management game form the factors personal contact and active participation are increased in comparison to sitting around a table playing a board game as is the case with the current game. Increasing these factors will increase dialogue and discussion because the degree of dialogue and discussion turned out to be sensitive to these factors according to the findings of the game sessions. Therefore it is most likely that an instrument on sustainability in this form will increase the strengths of the current game, and also will deal with the current game's flaws. Increasing the sense of reality will most probably increase the group of people on which the game will have an effect. This kind of management game could be used in educational bodies as well as in corporate settings. Corporations could use such a game to train or retrain their staff in dealing with different context's and situations. Educational bodies could use it to educate students to train and use their pluriformity.

### *Forecasting models*

Another possible future topic for study could be forecasting. Forecasting models in which sustainability issues are included could possibly increase the awareness of corporate life and society in general. Presenting society and/or corporations with a variety of possible futures could increase their awareness of their own behavior and its consequences. By such a forecasting model people could see what could possibly happen if society acts completely people, planet, profit or combination oriented. This could possibly make society more aware of its current behavior.

A last recommendation should be that if more time is available for future studies, a solid analytical framework needs to be developed to analyze the research results in an academically valid way. This research was lacking that time. Therefore no solid conclusions on causalities and dependencies of simulation, sustainability and other various factors could be drawn. Future studies could make use of various computerized programmes like SPSS to

analyze the retrieved data on causal relationships for instance. Comparisons on the effect of future simulations on sustainability on participants with differing age, education, gender and cultural background could create more insight in the actual effect of simulation on the perception and understanding of sustainability issues.

### **§ 7.5 THE END, new game**

In short, although no solid conclusions on causalities and dependencies regarding simulation and sustainability could be drawn, this research has shown that simulation shows potential to increase people's awareness of sustainability issues. To have an effect on a larger group of people than in the instrument's current form, future studies need to explore the possibilities for including more complexity, variety, reality and speed in future instruments on sustainability. A first possible future could exist in role playing games backed up by computerized simulation models. A second possible future could exist in the development of a "sustainable" type of forecasting models.

**Bibliography:**

- Berger, B.K. 2001. *Private Issues and Public Policy: Locating the Corporate Agenda in Agenda-Setting Theory*. JOURNAL OF PUBLIC RELATIONS RESEARCH, 13(2), 91–126, Department of Advertising and Public Relations College of Communication University of Alabama
- Dirven, J. 2002. *Samenleving in Transitie: een vernieuwend gezichtspunt*. Den Haag, Ministerie LNV.
- Elkington, J. (1998). *Cannibals with forks: The triple bottom line of 21st century business*. Second edition. Gabriola Island: New Society Publishers.
- Fishbein, M., Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading: Addison- Wesley.
- Geels, F.W. (2002). *Understanding the dynamics of Technological Transitions, a co-evolutionary and socio-technical analysis*. First edition. Enschede: Twente University press.
- Hitt, M.A. (1999). *Strategic Management: Competitiveness and Globalization*. Third edition. Cincinnati: South-Western College Publishing.
- Jackson, T. 2004. *Consuming Paradise?: Unsustainable consumption in cultural and social-psychological context*. Surrey, Centre for Environmental Strategy of the University of Surrey.
- Jager, W. (2000). *Modelling Consumer Behaviour*. First edition. Groningen: Universal Press.
- Jager, W. 2004. *Transition in Dutch meat production and consumption*. Research proposal, University of Groningen, Groningen.
- Jeurissen, R.J.M. (2000). *Bedrijfsethiek: een goede zaak*. First edition. Assen: Van Gorcum.
- Michael, B. 2003. *Corporate Social Responsibility in International Development: An Overview and Critique*. Corporate Social Responsibility and Environmental Management, Vol 10, 115-128, Hoboken, John Wiley & Sons, Ltd and ERP Environment.
- McWilliams, A. 2000. *Corporate Social Responsibility and Financial Performance: Correlation or Misspecification?* Strategic Management Journal, Vol 21, 603-609, Hoboken, John Wiley & Sons, Ltd and ERP Environment.
- Muhlbacher, H., Dahringer, L., Leih, H. (1999). *International marketing: A global perspective*. Second edition. London: International Thomson Business Press.
- Olivier, J.G.J. 1995. *Scenarios for global emissions from air traffic*. Bilthoven, National Institute of Public Health And Environmental Protection.
- Promburom, P. 2004. *Participatory Modelling for Watershed Management: The Use Role-playing Game and MAS Model*. Multiple Cropping Center, Chiang Mai University, Thailand
- Ranganathan, J. 1998. *Sustainability Rulers: Measuring Corporate Environmental & Social Performance*. Washington, World Resources Institute.
- Saunders, M., Lewis, P. & Thornhill, A. (2003). *Research Methods for Business Students*. Third edition. Harlow: Pearson Education.

Shaw, S. (1990). *Airline Marketing And Management*. Third edition. London: Pitman Publishing.

Sijtsma, F.J., Kolesar, M. 2003. *Market Value at Risk: A sustainable corporate performance management board game*. Wetenschapswinkel voor Economie en Bedrijfskunde, Groningen.

Sijtsma, F.J., Broekhof, M. 2002. *Maatschappelijk Verantwoord Ondernemen: wat is dat?*. Spil 183-184.

Sijtsma, F.J., Broekhof, M. 2002. *Maatschappelijk Verantwoord Ondernemen: hoe meet men dat?* Spil 185-186.

Sijtsma, F.J., Broekhof, M., Nijboer, M.H.G. 2002. *Maatschappelijk Verantwoord Ondernemen: de kern van de zaak is de sector*. Spil 187-188.

Veen, P., Wilke, H.A.M. (1986). *De kern van de sociale psychologie*. Second edition. Houten: Bohn Stafleu Van Loghum.

Vries, de, B.J.M. (2004). *Duurzaamheid in een veranderende wereld*. First edition. Utrecht: University of Utrecht.

Waddock, S.A. 1997. *The corporate social performance-financial performance link*. Strategic Management Journal, Vol 18:4, 303-319, Chestnut Hill, Wallace E. Carrol School of Management, Boston College.

Wheeler, D. 2001. *The End of the Corporate Environmental Report?: Or The Advent of Cybernetic Sustainability Reporting and Communication*. Business Strategy and the Environment, Vol 10, 1-14, Hoboken, John Wiley & Sons, Ltd and ERP Environment.

[www.airbus.com](http://www.airbus.com)

[www.boeing.com](http://www.boeing.com)

[www.elections2004.eu](http://www.elections2004.eu)

[www.fact-index.com](http://www.fact-index.com)

[www.iex.nl](http://www.iex.nl)

[www.rivm.nl](http://www.rivm.nl)

**Appendix A : Contextual scenario's*****Left-wing Europe****People Situation: Woman participation*

Woman participation is promoted by a left-wing government in the context of equality. An overall employment rate of 60% amongst women is the goal in this political climate. Government policies are aimed at achieving this goal and therefore companies residing in the EU are obliged to employ a certain degree of women.

*Effect:*

This situation will effect every player.

Companies not providing sufficient women employment will be fined accordingly.

*Certificate influence:*

This situation is a "people" contextual situation. Therefore players who invested in this type of certificate will have reacted accordingly to contextual developments regarding women employment.

- 0 people certificates : If a player did not invest in people certificates, he or she did not comply with government policy and therefore will be fined 100 Euro.
- 1 people certificate : If a player owns 1 people certificate, he or she did invest in his or her people, but not sufficiently. The player will be fined 50 Euro.
- 2 people certificates : If a player owns 2 people certificates, he or she complied with government policies and therefore will not be fined.



*People Situation: Equal chances for the disabled*

In left-wing Europe, equality is a main issue. One way in which this can be seen is that proper treatment of disabled people is a social issue. Therefore, investments in facilities for disabled people are socially obliged in left-wing Europe.

*Effect:*

This situation will only effect players that invested in leisure travel.

This situation can effect the player because consumers are sensitive to their social context. It is this context that is of great influence on the creation of a person's identity and the degree of social status he or she gets. Status, in turn, is a basic need for the leisure traveler.

*Influence of certificates:*

- 0 people certificates : If a player did not invest in people certificates, he or she did not pay attention to his or her social context and did not invest in facilities for the disabled. Leisure travelers are insulted by the way in which this airline is treating disabled people. The player will lose the income of 5 leisure seats for the duration of one play round.
- 1 people certificate : If a player owns one people certificate, he or she invested in facilities for the disabled, but not sufficiently. The player will lose the income of 2 leisure seats for the duration of one play round
- 2 people certificates : If a player owns two people certificates, her or she has invested sufficiently in facilities for the disabled and therefore will not lose any income from leisure seats.

*People Situation: Social responsibility.*

In left-wing Europe social responsibility is important. Human rights and democracy are promoted in and outside Europe. Government policies in left-wing Europe are aimed at ensuring good corporate governance and social responsibility of business wherever it trades.

*Effect:*

This situation will effect every player.

Human rights are violated by non-EU sub-contractors of the players' suppliers of planes and spare-parts. Because of the questionable history on human rights in the sub-contractors' countries of origin, players could have chosen to persuade their suppliers from not dealing with these people.

*Influence of certificates:*

- 0 people certificates : If a player did not invest in people certificates, he or she did not take any effort to persuade their suppliers from not dealing with the violating sub-contractors. Political measures are taken, and the player needs to pay 100 Euro more his or her next plane purchase, and 50 euro more on the first purchase of maintenance.
- 1 people certificate : If a player owns one people certificate, he or she did take some effort in persuading their suppliers, but not sufficiently. The player needs to pay 50 Euro more on the first purchase of maintenance.
- 2 people certificates : If a player owns two people certificates, he or she took enough effort to persuade their suppliers and the sub-contracts where terminated. Therefore, the player pays normal prices on future plane and maintenance purchases.

*People Situation: High quality of employment.*

In left-wing Europe better jobs and greater social cohesion are important political issues because people come in first place in left wing Europe. Working conditions for employees need to be of high quality, taking into account other social aspects like sufficient support for working parents.

*Effect:*

This situation will effect every player.

As part of the political environment, Unions are one of the factors influencing the context of the players. If a player does not pay sufficient attention to his or her personnel, the risk exist of Unions organizing strikes in order to demonstrate for better working conditions.

*Influence of certificates:*

- 0 people certificates : If a player did not invest in people certificates, he or she did not invest enough in his or her stakeholder relationships regarding employees. All employees are unsatisfied with their physical and social working conditions and therefore go on strike. Operating the company without personnel is impossible and therefore players will lose income for all of their products, namely the income of 2 business seats, 4 leisure seats and 2 units of cargo for the duration of one play round.
- 1 people certificate : If a player owns 1 people certificate he did invest in quality of work, but not sufficiently. Therefore still half of the workforce is unsatisfied and will strike; the other half will continue working. Players will lose the income of 1 business seat, 2 leisure seats and 1 unit of cargo for the duration of one play round.
- 2 people certificates : If a player owns 2 people certificates, he or she takes much effort to provide high quality of working conditions. Employees are satisfied and will not strike. There is no loss of income.

*People Situation: Ethnic employment*

Equality is one of the main issues of left-wing Europe. Ethnic minorities are entitled to the same opportunities as native Europeans. Therefore the employment of ethnic minorities will be promoted by governmental policies.

*Effect:*

This situation will effect every player.

Companies that do not employ a sufficient number of ethnic minorities will be fined accordingly.

*Certificate influence:*

This situation is a “people” contextual situation. Therefore players who invested in this type of certificate will have reacted accordingly to contextual developments the employment of ethnic minorities.

0 people certificates : If a player did not invest in people certificates, he or she did not comply with government policy and therefore will be fined 100 Euro.

1 people certificate : If a player owns 1 people certificate, he or she did invest in his or her people, but not sufficiently. The player will be fined 50 Euro.

2 people certificates : If a player owns 2 people certificates, he or she complied with government policies and therefore will not be fined.

People Situation: Education for the young generation

Left-wing Europe offers a political climate that strives for improvement of the conditions of young Europeans. One way in which this is done is by taking on board the priorities of young Europeans in education.

*Effect:*

This situation will effect every player.

Organizations that invest in the development and education of young Europeans will receive government support in the form of subsidies.

*Influence of certificates:*

0 people certificates : If a player did not invest in people certificates, he or she did not invest in educative programmes for young Europeans and is not interested in offering educative initiatives like internships or sponsorship of educational programmes. This player therefore will not receive government support.

1 people certificates : If a player owns 1 people certificate, it is sometimes possible for young Europeans to get an internship at his or her airline company. Therefore this player will receive government subsidies of 50 Euro.

2 people certificates : If a player owns 2 people certificates, he or she invests sufficient time and effort in the future of young Europeans by sponsoring local universities' activities and providing for an annual internship programme at his or her airline company. Therefore this player will receive government subsidies of 100 Euro

*Planet Situation: fuel leakage.*

Left-wing Europe is in favour of the polluter pays principle, meaning that a person or organization causing environmental damage is obliged to pay for the damage.

*Effect:*

This situation will effect every player.

On one of the players' flights a severe fuel leakage occurred. Depending on the extent of his or her investments in environmental precautions this could have effected the environment. This could have financial consequences for the player.

*Influence of certificates:*

- 0 planet certificates : If a player did not invest in planet certificates, he or she did not pay take any precautions to prevent possible environmental damage resulting from his or her product failure. The player is obliged to pay a fine and clean up the damage, resulting in the payment of 100 Euro.
- 1 planet certificate : if a player owns 1 planet certificate, he or she did take some precautions regarding possible environmental damage, but these were not sufficient to prevent the damage. The player has to clean up the damage, resulting in the payment of 50 Euro
- 2 planet certificates : If a player owns 2 planet certificates, he or she took sufficient precautions in preventing possible environmental damage. Therefore no harm was done to the environment and no fines have to be paid or no damage has to be restored.

*Planet Situation: Sustainable alternatives to fossil fuels*

In left-wing Europe sustainable alternatives to the excessive use of natural resources, especially fossil fuels will be encouraged.

*Effect:*

This situation effects every player.

Research on, and the implementation of, sustainable alternatives to fossil fuels are encouraged by governmental policies. The extent to which the player is investing in research towards these alternatives and the extent to which he or she is implementing them will influence the fuel price he or she has to pay.

*Influence of certificates:*

0 planet certificates : If a player did not invest in planet certificates, he or she did not invest in research on sustainable alternatives to fossil fuels and also did not implement possible alternatives. Fuel prices for this player will increase with 100 Euro on his or her next fuel purchase.

1 planet certificate : If a player owns 1 planet certificate, he or she did invest in research on sustainable alternatives to fossil fuels, but did not yet implement them. Fuel prices will remain the same for this player.

2 planet certificates : If a player owns 2 planet certificates, he or she invested in research on sustainable alternatives to fossil fuels and also started to implement them. Fuel prices for this player will decrease with 100 Euro on his or her next fuel purchase.

*Profit Situation: Monopoly control:*

Monopoly of media-, political- and economic power is opposed in left-wing Europe.

*Effect:*

This situation effects all players.

If players did not carefully manage their product portfolio by market research, it is possible that they have a bigger total market share than is allowed in left-centre Europe. If this is the case, this could mean that their share in some market segments need to be reduced.

*Influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she did not conduct any market research regarding regulations on allowed market share. This will result in government measures obliging the player to reduce their market share. Therefore the player will loose the income of 2 freight unit, 2 business seats and 4 leisure seats for the duration of one play round.
- 1 profit certificate : If a player owns 1 profit certificate, he or she did conduct market research, but not sufficiently in their passenger travel segment. The player will loose the income of 1 freight unit, 1 business seat and 2 leisure seats for the duration of one play round.
- 2 profit certificates : If a player owns 2 profit certificates, he or she did conduct sufficient research and therefore was fully aware of regulations regarding market share. The player will not loose income.



*Profit Situation: Increasing trade with developing countries*

Left-wing Europe will push for a progressive globalization. Trade with developing countries will be increased and developing countries will have fair access to European markets.

*Effect:*

This situation will effect all players.

Some new suppliers of spare parts have entered the European maintenance market because of the opening up of the European markets to developing countries. The increase of trade with developing countries has brought the need for European companies to learn how to deal with these new cultures. If European airline companies are not capable of dealing with these new cultures, some profitable maintenance deals could be called off.

*The influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she did not conduct any research on the arrival of new cultures on the maintenance market. The player neither invested in proper cultural training for enabling employees to deal with these new suppliers. Cultural misunderstanding caused both parties to collide and resulting in calling off a profitable maintenance deal. The player will have to pay 100 Euro more on his next maintenance purchase.
- 1 profit certificate : If a player owns 1 profit certificate, he or she did do research on the new cultures but was unable to translate this sufficiently to the employees because of lack of sufficient training. After long and difficult negotiations it was possible to make a maintenance deal for the same price as usual. The player therefore pays the normal price on his next maintenance purchase.
- 2 profit certificates : If a player owns 2 profit certificates, he or she did do sufficient research on new cultures and also translated this to the employees by proper training. This resulted in a profitable maintenance deal. The player pays 100 Euro less on his next maintenance purchase.

## ***Left-centre Europe***

### *People Situation: Cultural diversity*

Left-centre Europe strives for a more social Europe meaning social cohesion of all of its citizens. This encompasses the creation of a better understanding of immigrants. In order to increase tolerance towards cultural diversity, educational programmes on migration are promoted.

#### *Effect:*

This situation will effect players that invested in business seats.

In order to be able to work efficiently in a multicultural corporation, employees need to be able to understand each others cultural background. Training and education on cultural diversity will help improving this process of mutual understanding. If this mutual understanding does not exist work floor procedures can lack efficiency. This can result in delays in boarding procedures and mistakes in for instance baggage handling. This will negatively effect players' short-haul point-to-point and connection business passengers. Short-haul point-to-point business passengers have punctuality as a need. Short-haul connection business passengers have punctuality and baggage handling as a need. Not providing these passengers with their basic needs will dissatisfy the, and probably will mean losing them as customers.

#### *Influence of certificates:*

- 0 people certificates : If a player did not invest in people certificates, he or she did not provide employee training and education on cultural diversity. Due to miscommunication amongst employees, boarding procedures are delayed and baggage is missing. Point-to-point- and connection short-haul business passengers are dissatisfied. Therefore, the player will loose the income of 4 business passengers for the duration of 1 play round.
- 1 people certificate : If a player owns 1 people certificate, he or she provided some employees with training and education on cultural diversity, but not all. The problem of cultural misunderstanding still exists in the baggage department and therefore problems still exist in this area, causing dissatisfaction amongst short-haul connection business travelers. Therefore, the player will loose the income of 2 business passengers for the duration of 1 play round.
- 2 people certificates : If a player owns 2 people certificates, he or she provided employees with extensive training and education on cultural diversity. Employees understand each other and procedures on the work floor go smoothly. The player will not loose any income.

*People Situation: Employment by sustainable development projects.*

Left-centre Europe calls for the creation of employment by promotion of investments in sustainable development projects.

*Effect:*

This situation will effect all players.

Investment in sustainable development projects is promoted by providing subsidies to organizations doing so.

*Influence of certificates:*

- 0 people certificates : If a player did not invest in people certificates, he or she did not invest in sustainable development projects. Therefore no new employment was created and no government subsidies are granted.
- 1 people certificate : If a player owns 1 people certificated he or she invested in the creation of small-scale sustainable development project. The player receives 50 Euro of government subsidies.
- 2 people certificates : If a player owns 2 people certificates, he or she invested in a large-scale sustainable development project. The player receives 100 Euro of government subsidies.

*People Situation: Erasmus students*

In the context of enhancing the spirit of European citizenship and cultural sharing, the Erasmus student programme is seen as one of the key educational programmes. Government policies are aimed at increasing the number of students.

*Effect:*

This situation effects all players.

Players can support Erasmus student projects by sponsoring local universities or by offering their cooperation in providing for speeches and daytrips to their company for instance. In doing so, players have the possibility of receiving government subsidies.

*Influence of certificates:*

- 0 people certificates : If a player did not invest in people certificates, he or she did not invest in Erasmus student projects. Therefore no government subsidies are granted.
- 1 people certificate : If a player owns 1 people certificate he or she sponsored Erasmus projects at local universities. The player receives 50 Euro of government subsidies.
- 2 people certificates : If a player owns 2 people certificates, he or she sponsored Erasmus projects at local universities and offered cooperation by means of speeches and facility tours in their company. The player receives 100 Euro of government subsidies.

*People Situation: Accused of discrimination*

Human rights and anti-discrimination are very important in left-centre Europe. Equal treatment of people of different race, sexual preferences religion etc. Is promoted in left-centre Europe.

*Effect:*

This situation will only effect players that invested in leisure travel.

This situation can effect the player because consumers are sensitive to their social context. It is this context that is of great influence on the creation of a person's identity and the degree of social status he or she gets. Status, in turn, is a basic need for the leisure traveler. In a social context that strives for equality, individuals or companies that violate these basic rights will be socially judged. In this case, the player's airline is accused of discrimination. Investments regarding equal opportunities for employees in the past, active promotion of equality and stakeholder communication will determine if the general public believes the accusation. If this is the case, the player will loose part of his or her leisure traveler segment because of the sensitivity of these passengers to their social context.

*Influence of certificates:*

- 0 people certificates : If a player did not invest in people certificates, he or she did not sufficiently invest in equal opportunities and its promotion, nor invested in stakeholder communication on this topic. A large amount of leisure travelers does not want to travel with a company of which they believe is discriminating. The player will loose the income of 5 leisure seats for the duration of 1 play round.
- 1 people certificate : If a player owns 1 people certificate, he or she did invest in equality. But because of the lack of promotion and stakeholder communication on this topic this wasn't noticed by everybody. Some people still believe in the accusation and therefore choose not to travel with the player. The player will loose the income of 3 leisure seats for the duration of 1 play round.
- 2 people certificates : If a player owns 2 people certificates, he or she did invest in equality, actively promoted it and invested in sufficient stakeholder communication on this topic in the past. Therefore the general public does not believe the accusation. The player will not loose any income.

*Planet Situation: Renewable energies*

Renewable energies like solar, wind, water and biomass energy are promoted in order to develop a truly sustainable energy economy.

*Effect:*

This situation effects all players.

The promotion of renewable energies causes old forms of energy supply to become more expensive. In turn renewable energies will be cheaper for each player if proper investments in research and implementation on this area are made.

*Influence of certificates:*

- 0 planet certificates : If a player did not invest in planet certificates, he or she did not invest in research on this area, and did not consider implementation of renewable energy use. Because of the increase in price of “old fashioned” energies variable costs for this player will rise. This player needs to pay 100 Euro more on his next variable cost payment.
- 1 planet certificate : If a player owns 1 planet certificate, he or she did conduct research on renewable energies and implemented the use of these renewable forms of energy supply in some departments of his or her airline. Variable costs will remain the same on the next variable cost payment.
- 2 planet certificates : If a player owns 2 planet certificates, he or she conducted research on renewable energy supply, and fully implemented this in his or her airline. The player may pay 100 Euro less on the next variable cost payment.

*Planet Situation: Kerosene taxation*

The external costs to the environment and society from air transport need to be reflected in prices according to left-centre political parties in Europe. Therefore the introduction of these taxes is expected in a left-centre Europe.

*Effect:*

This situation effects all players in the leisure segment.

Due to kerosene taxation players need to raise their prices. Research in fuel efficiency could have prevented this rise. Leisure travelers are very sensitive regarding ticket prices. If ticket prices rise, it is to be expected that the income from these passengers will be lost.

*Influence of certificates:*

- 0 planet certificates : If a player owns 0 planet certificates, he or she did not invest in research on fuel efficiency and therefore prices need to be raised. A large amount of leisure passengers will stop flying. The income of 5 leisure seats will be lost for the duration of 1 play round.
- 1 planet certificate : If a player owns 1 planet certificate, he or she did do some research on fuel efficiency. Some improvement of fuel efficiency is achieved, but still prices need to be increased. Some leisure passengers will leave your company. The income of 3 leisure seats will be lost for the duration of 1 play round.
- 2 planet certificates : If a player owns 2 planet certificates, he or she conducted extensive research on fuel efficiency. The resulting improvement in fuel efficiency off set the increase in price of kerosene. Therefore, prices can be kept at the same level, no customers leave and income will remain the same.

*Planet Situation: Kerosene taxation*

The external costs to the environment and society from air transport need to be reflected in prices according to left-centre political parties in Europe. Therefore the introduction of these taxes is expected in a left-centre Europe.

*Effect:*

This situation will effect players who invested in the cargo segment.

Due to kerosene taxation players need to raise their prices. Research in fuel efficiency could have prevented this rise. Customers in the non-perishable cargo segment are very sensitive to price changes because surface transport is a viable alternative in mainly the short-haul niche of this segment. If prices rise it is to be expected that customers from this segment will choose for a surface alternative. Therefore the possession of substitute product cards will be a factor to the extent to which players are effected by this situation.

*Influence of certificates&substitute products:*

## 0 planet certificates and no substitute products:

If a player owns 0 planet certificates and no substitute products, he or she did not invest in research on fuel efficiency and therefore prices need to be raised. Many non-perishable cargo customers therefore will make the transfer to surface transport. Because the player owns no substitute products, he or she does not operate in surface transport. Therefore customers will be lost. Income from cargo will decrease with 5 units on the next payment.

## 0 planet certificates and substitute products:

If a player owns 0 planet certificates but does own substitute products, he or she did not invest in research on fuel efficiency and therefore prices need to be raised. Many non-perishable cargo customers therefore will make the transfer to surface transport. The player is able to service some of them in the surface transport segment, but still most customers from the air segment are lost. Therefore, the income from cargo will decrease with 3 units on the next payment.

## 1 planet certificates and no substitute products:

If a player owns 1 planet certificates but no substitute products, he or she did invest in research on fuel efficiency. Some improvement of fuel efficiency is achieved, but still prices need to be increased. Some non-perishable cargo customers therefore will make the transfer to surface transport. Because the player owns no substitute products, he or she does not operate in surface transport. Therefore customers will be lost. Income from cargo will decrease with 3 units on the next payment.

## 1 planet certificate and substitute products:

If a player owns 1 planet certificate and invested in substitute products, he or she did do some research on fuel efficiency. Some improvement of fuel efficiency is achieved, but still prices need to be increased. Some non-perishable cargo customers therefore still make the transfer to surface transport. The player is able to maintain most customer relationships with substitute modes of transport, but still some relations are terminated. Therefore the income of the cargo segment will decrease with 1 unit on the next payment.

## 2 planet certificates:

If a player owns 2 planet certificates, he or she conducted extensive research on fuel efficiency. The resulting improvement in fuel efficiency off set the increase in price of kerosene. Therefore, prices can be kept at the same level, no customers leave and income will remain the same.



*Planet Situation: from road to railway*

In left-wing Europe surface transport is being transferred from heavy road transport to the more environmentally friendly railways. Heavy vehicle fees will be introduced causing a rise in operating costs for transport by road.

*Effect:*

This situation effects all players.

Players that did not invest in the introduction of sustainable supply chains will see their operating costs rising.

*Influence of certificates:*

- 0 planet certificates : If a player owns 0 planet certificates, he or she did not invest in the introduction of a sustainable supply chain. Therefore operating costs will rise and 100 Euro more needs to be paid on the next payment of variable costs.
- 1 planet certificate : If a player owns 1 planet certificate, he or she did start with the introduction of more sustainable transport methods in some part of the supply chain, but still some parts of it make use of heavy road transport. Variable costs will remain the same.
- 2 planet certificates : If a player owns 2 planet certificates, he or she fully integrated sustainability in the supply chain. On the next variable cost payment 100 Euro less than usual amount.

*Planet Situation: Animal transport*

The improvement of the conditions of animal transport is a main issue in left-centre Europe. Therefore it is likely that this will effect the transport sector.

*Effect:*

This situation will effect all players in the cargo business.

Proper conditions of animal transport are promoted in left-centre Europe. Players will need to comply with government regulations regarding their facilities for animal transport.

*Influence of certificates:*

- 0 planet certificates : If a player did not invest in planet certificates, he or she did not comply with government regulations on animal transport. Therefore animals can not be transported by this player. The player will loose the income of 4 cargo units for the duration of one play round.
- 1 planet certificate : If a player owns 1 planet certificate, he or she is willing to improve the facilities for animal transport, but did not yet do so. The player is allowed to transport animals after changing his or her facilities. Till then, no animal transport is allowed. The player will loose the income of 2 cargo units for the duration of 1 play round.
- 2 planet certificates : If a player owns 2 planet certificates, he or she has invested in proper facilities for animal transport. This player operates in compliance with government regulations in this area. The player will not loose income.

*Planet Situation: Environmental awareness platform*

Awareness raising and other in the field of the environment is a main issue in left-centre Europe. There is a lack of stakeholder acceptance regarding this topic and therefore a platform for the communication of best practice and advice is created to improve the implementation process of programmes aimed at improving this awareness.

*Effect:*

This situation effects all players.

To create environmental awareness the initiative is taken to create a platform that combines the knowledge of governmental bodies, educational institutions, NGO's and business life. The airline of the player was given the opportunity to participate in this platform. Not only does this platform contribute to the community, but also to the player's airline. Sharing the knowledge on best practices enables the player to fit his operations to its environment in a more efficient way, causing variable costs to go down.

*The influence of certificates:*

- 0 planet certificates : If a player did not invest in planet certificates, he or she did not participate in the knowledge sharing platform. Therefore there is no gain in efficiency. Some of the player's competitors did have this gain, and therefore have an advantage on the player. This advantage is represented by a one-time increase of 100 Euro of variable costs for the player on his or her next payment.
- 1 planet certificate : If a player owns 1 planet certificate, he or she did participate in the platform. Because his or her minor degree of participation only a small efficiency improvement was established. This improvement was comparable with its competitors. The variable costs will therefore remain the same on the next payment.
- 2 planet certificates : If a player owns 2 planet certificates, he or she was an active participant in the platform. This resulted in gaining knowledge in best practices, resulting in an efficiency gain. Therefore the player's variable costs will be decreased by 100 Euro on a one-time basis on his next payment.

*Profit Situation: Trade is inferior to public issues*

In left-centre Europe trade policy is subject to environmental and human right policy. Public policy issues must be protected from attack by commercial trade agreements. Companies making trade agreements must therefore do careful research on what is allowed and what is not.

*Effect:*

This situation will effect players that invested in the business passenger travel segment.

According to government regulations players must comply with regulations regarding social conditions. This encompasses working conditions for employees of the player and employees of partners. Sometimes airlines need to form alliances to increase flexibility. Proper market research should reveal to the player if the working conditions their partners are offering do comply with the compulsory regulations on working conditions. Flexibility is an important need for the short-haul business traveler.

*Influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she has formed an alliance in passenger travel with companies that do not comply with regulations regarding working conditions for employees. The player did not conduct proper market research and therefore was unaware of the complications that this alliance would bring. The alliance is banned, and therefore flexibility decreases. Short-haul business passengers are dissatisfied, causing the player to loose the income of 4 business seats for the duration of 1 play round.
- 1 profit certificates : If a player owns 2 profit certificates, he or she did do market research. This market research was not sufficient enough to discover that some of the alliance partners were not complying with government regulations. Cooperation with these partners is not allowed. To some extent flexibility will decrease. The player will loose the income of 2 business seats for the duration of 1 play round.
- 2 profit certificates : If a player owns 2 profit certificates, her or she did conduct extensive market research on potential partners and selected only partners that were complying with government regulations. The player will not loose income.

*Profit Situation: Banning export subsidies*

In order to create equal chances for developing countries in the world economy, export subsidies are banned in left-centre Europe.

*Effect:*

This will effect players who invested in the cargo business

Export subsidies are not further granted by governmental policies. Therefore, for some European producers it is no longer profitable to export their products to countries outside the EU. This also means loss of business for players who have invested in the cargo business. This loss can be fully or partly offset, depending on the degree of investments in market research.

*The influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she did not conduct any proper market research on governmental policies regarding trade. Therefore, this player did not forecast this market loss and was unable to transfer his or her marketing efforts to another area in order to gain new customers. To represent this market loss, the player will loose the income of 4 cargo units for the duration of 1 play round.
- 1 profit certificate : If a player owns 1 profit certificates, he or she did conduct market research. Unfortunately this research was not extensive enough, causing the play to be not fully aware of the consequences of the situation. To represent this market loss, the player will loose the income of 2 cargo units for the duration of 1 play round.
- 2 profit certificates : If a player owns 2 profit certificates, he or she conducted extensive market research. The loss of a part of his or her export market was completely forecasted and marketing efforts were shifted to another area, fully compensating the loss. The player will not loose income.

## ***Right-centre Europe***

### *People Situation: Terrorism*

In right-wing and right-centre Europe, safety is a main issue. Terrorism is one aspect threatening this safety. Europe is actively combating terrorism in and outside Europe. Therefore investments in defense are made. In striving to defeat terrorism, Europe is cooperating with countries outside of the EU. Due to the growing media attention to terrorism, citizens want their environment to provide safety and security.

#### *Effect:*

This situation will both effect players who invested in passenger business travel, and players who invested in passenger leisure travel.

The hijacking of a plane by terrorists has caused concern amongst business and leisure travel. Safety is a basic need for both the short-haul business traveler and the leisure traveler, although it is more important to the latter.

#### *Influence of certificates:*

- 0 people certificates : If a player did not invest in people certificates, he or she did not take and communicated investments in safety measures on his or her flights. The player will lose the income of 2 business seats and 4 leisure seats for one play round.
- 1 people certificate : If a player owns 1 people certificate, some measure are taken regarding safety on flights. Although these measures are enough for the business traveler to keep flying, they still are not sufficient enough to comfort the leisure traveler. Therefore the player will lose the income of 4 leisure seats for one play round.
- 2 people certificates : If a player owns 2 people certificates, extensive measures were taken to guarantee passenger safety during flights. Both business and leisure passengers have faith in this player and will keep traveling by air.

People Situation: Working time

Attempts are made to improve the labour market in right-centre Europe. Improvement of the flexibility of working time could improve the employability rate. This should theoretically be possible because Europe has the world's shortest working time. Problems concerning the way how new working times are set should be negotiated and solved by the social partners

*Effect:*

This situation effects all players.

The player's airline strives for better flexibility of working hours by the introduction of night-shifts. The extent of negotiations and cooperation with Unions and employees will determine if these new shifts are going to be accepted by the employees.

*Influence of certificates:*

- 0 people certificates : If a player did not invest in people certificates, he or she did not negotiate the new working times with Unions and employees. All employees feel neglected and not taken seriously. Employees will go on strike. Operating the company without personnel is impossible and therefore players will lose income for all of their products, namely the income of 2 business seats, 4 leisure seats and 2 units of cargo for the duration of one play round.
- 1 people certificate : If a player owns 1 people certificate he or she did negotiate with the Union and employees, but an agreement could not be met. Therefore still half of the workforce is unsatisfied and will strike; the other half will continue working. Players will lose the income of 1 business seat, 2 leisure seats and one unit of cargo for the duration of one play round.
- 2 people certificates : If a player owns 2 people certificates, he or she did negotiate and agreements were made. Employees are satisfied and will not strike. There is no loss of income.

People Situation: Social exclusion

Social exclusion is combated in right-centre Europe. One area where this is the case is the area of young people that face difficulties with economic and social integration. One way in which right-centre Europe will battle this form of social exclusion is by promoting sport because of its social and educational role.

*Effect:*

This will effect players in the leisure travel business.

A fair play youth tournament is organized to promote the battle against social exclusion. Players that have promoted and sponsored youth development programmes will have the opportunity of gaining a contract for the transportation of the young players and the fair play organization.

*Influence of certificates:*

- 0 people certificates : If a player did not invest in people certificates, he or she did was not involved in youth development programmes in the past. Therefore no transportation contract is achieved. Income from leisure seats will remain the same.
- 1 people certificate : If a player owns 1 people certificate, he or she did participate in youth programmes in the past to the same extent as competition. A transportation contract is achieved although it needs to be shared with some competitors. The player will gain the income of 1 leisure seat for the duration of 1 play round.
- 2 people certificates : If a player owns 2 people certificates, he or she participated extensively in youth programmes in the past to a larger extent than competition. The player will gain the income of 2 leisure seats for the duration of 1 play round.



*People Situation: Higher and more qualitative employability*

The right-centre knowledge economy requires for investments in human capital. In this way unemployment is prevented and employability of the unemployed is increased. This involves training and retraining of employees. Life-long learning is promoted. Efforts of employees to retrain themselves should be promoted by means of incentives. Negotiations between the social partners should prevent these pay rises from exceeding the productivity gains.

*Effect:*

This situation effects all players.

Investment in human capital will both benefit the airline and the airline's employees. Employees are more flexible, have more opportunities and are paid more due to their training. In turn airlines can operate more efficiently and effectively due to a professionalized and satisfied workforce. Professionalism is important in the cargo business, and flexibility and efficiency are important in respectively the business passenger travel segment and the leisure passenger travel segment. Lack of efficiency could mean increasing costs and in turn increasing prices.

*Influence of certificates:*

- 0 people certificates : If a player did not invest in people certificates, he or she did not provide for training of employees. Efficiency and effectivity are lacking because employees are demotivated and lack professional skills. The player will loose the income of 2 cargo units, 2 business seats and 2 leisure seats for the duration of 1 play round.
- 1 people certificate : If a player owns 1 people certificate, he or she did provide for employee training but paid no employee incentives. Professionalism is increased, but because of the lack of incentives employees are still demotivated. The player will gain the income of 1 cargo unit and loose the income of 1 business seat and 1 leisure seat for the duration of 1 play round.
- 2 people certificates : If a player owns 2 people certificates, he or she did provide for employee training and paid incentives. Professionalism increased and employees are happy. The player will gain the income of 1 cargo unit, 1 business seat and 1 leisure seat.

People Situation: Illegal immigration flows

Right-centre Europe offers a political environment that strives for equal opportunities in and outside Europe. Regarding immigration, those in need of protection are welcomed in Right-centre Europe, but illegal immigration is fought. Clear and efficient systems are established for the processing of asylum-seekers by the formulation of a common European asylum policy. The legitimacy of asylum-seekers therefore is more efficient and effective. Legal immigrant integration is promoted for example by stimulating entrepreneurship among immigrants. Those who engage in the exploitation of immigrants are immediately prosecuted and severely punished. Awareness of citizens on this topic is also stimulated to prevent these crimes.

*Effect:*

This situation affects all players.

Airlines have the possibility of employing various employees. A player can choose to work with European employees, legal immigrants or illegal immigrants. Because of the high level of welfare in Europe, illegal immigrants come to Europe and for low wages. These people are an easy victim of exploitation. It is the choice of the player if human rights are respected. Not respecting human rights could result in fines and social resistance. Consumers are sensitive of their social context. A right-wing social context will condemn immigrant exploitation. This will especially influence the leisure business because leisure passengers are sensitive to their context.

*Influence of certificates:*

- 0 people certificates : If a player did not invest in people certificates, he or she is not interested in social issues. The player thought to have a profitable deal by hiring illegal immigrants to work for very low wages. The player is accused and prosecuted for the exploitation of immigrants and therefore is fined 100 Euro. Because of the sensitivity of leisure travelers to social context, players that invested in the leisure business will lose the income of 1 leisure seat for the duration of 1 play round next to the earlier established fine.
- 1 people certificate : If a player owns 1 people certificate, he or she respects human rights. This player has chosen to employ European employees for their experience and the fact that no investments in cultural research for understanding immigrants are desirable. This player will undergo no consequences.
- 2 people certificates : If a player owns 2 people certificates, he or she is offering equal opportunities to legal immigrants. Because the integration of these immigrants is promoted by government, the player will receive government subsidies of 100 Euro.

People Situation: Education for the young generation

In right-centre Europe education must stimulate people to take an active part in society, further their social and personal growth and teach them democratic thinking while introducing the understanding and practice of our basic European values. Education can prevent social exclusion, enhance understanding of cultural diversity and integration, and improve employability opportunities.

*Effect:*

This situation will effect every player.

Organizations that invest in the development and education of young Europeans will receive government support in the form of subsidies. Investments in education could consist of internships or providing for new technologies for the educational system.

*Influence of certificates:*

0 people certificates : If a player did not invest in people certificates, he or she did not invest in educative programmes for young Europeans and is not interested in offering educative initiatives like internships or investments in technologies for the educational system. This player therefore will not receive government support.

1 people certificates : If a player owns 1 people certificate, it is sometimes possible for young Europeans to get an internship at his or her airline company. Therefore this player will receive government subsidies of 50 euro.

2 people certificates : If a player owns 2 people certificates, he or she invests sufficient time and effort in the future of young Europeans providing local universities with the latest insights in airline technologies and providing for an annual internship programme at his or her airline company. Therefore this player will receive government subsidies of 100 euro

*Planet Situation: Climate controls integrated into law*

In right-centre Europe a genuine system of environmental responsibility is established, based on the 'polluter-pays principle', with appropriate controls, penalties and compensations. The enforcement of these laws is monitored at national level, and violations of this legislation are properly punished. The goal in right-centre Europe is to become the world leader in the fight against climate change.

*Effect:*

This situation effects all players

On one of the players' flights a severe fuel leakage occurred. Depending on the extent of his or her investments in environmental precautions this could have effected the environment. This could have financial consequences for the player.

*Influence of certificates:*

- 0 planet certificates : If a player did not invest in planet certificates, he or she did not pay take any precautions to prevent possible environmental damage resulting from his or her product failure. The player is obliged to pay a fine and clean up the damage, resulting in the payment of 100 Euro.
- 1 planet certificate : if a player owns 1 planet certificate, he or she did take some precautions regarding possible environmental damage, but these were not sufficient to prevent the damage. The player has to clean up the damage, resulting in the payment of 50 Euro
- 2 planet certificates : If a player owns 2 planet certificates, he or she took sufficient precautions in preventing possible environmental damage. Therefore no harm was done to the environment and no fines have to be paid or no damage has to be restored.

*Planet Situation: Energy efficiency*

In right-centre Europe the advantages of energy efficiency are proven, and therefore it is promoted.

*Effect:*

This situation effects all players in the leisure and cargo business.

Players have the possibility to invest in research on energy efficiency. This could give the players advantages regarding the lower consumption of fuel. Lower fuel consumption means that players need to pay less on fuel; therefore ticket prices and cargo tariffs can be lowered. This could possibly attract more cargo customers and leisure passengers. For both the routine non perishable routine cargo customer and the leisure traveler, price is an important determinant of choosing an airline.

*Influence of certificates:*

0 planet certificates : If a player did not invest in planet certificates, he or she did not attempt to increase energy efficiency. Competition did do so and therefore is able to lower their ticket prices and cargo tariffs. Some of the non perishable routine cargo customers and some of the leisure travelers will choose for other airlines because the player was unable to lower prices and tariffs. The player will loose the income of 1 cargo unit and 1 leisure seat for the duration of 1 play round.

1 planet certificates : If a player owns 1 planet certificate, he or she improved energy efficiency on the same level as competition. No advantage in costs is achieved and therefore incomes will remain the same.

2 planet certificates : If a player owns 2 planet certificates, he or she was able to improve energy efficiency substantially because of extensive research. The player gains a cost advantage on competition and therefore is able to lower prices and tariffs. The players gains new customers and therefore the income of 1 cargo unit and 1 leisure seat is gained for the duration of 1 play round.

*Planet Situation: Renewable energies.*

Renewable energies and are important in right-centre Europe. Research and investment efforts should be increased in fields as solar energy, wind energy, geothermal energy, biomass and so forth. The main focus in right-centre Europe lies on the reduction of greenhouse gasses. Therefore the use of nuclear energy is still maintained. Because of the liberal perspective of right-centre Europe competition between energy forms has to be based on fairness and therefore EU competition and state subsidies regulation have to be applied on all form of energy production.

*Effect:*

This situation will effect all players.

Due to liberalization of the energy supply market, large investments were made in research and development on renewable energy forms in order to be able to compete with old fashioned types of energy. These investments caused great improvements in the renewable energy market. Improvement in collecting renewable energies has given the renewable energy providers a strong competitive position on their old fashioned rivals. Depending on the degree of investments players have made in adapting their energy network to renewable energies, renewable energies could turn out to be even cheaper than old fashioned forms of energy supply.

*Influence of certificates:*

- 0 planet certificates : If a player did not invest in planet certificates, he or she was uninterested in the development of renewable energy forms. Because competition did invest in adaptations of their energy supply chain to renewable energies, they now have an advantage on the player because of lower energy costs. The player's disadvantage will be represented by an increase of 100 Euro of the variable costs for the next payment.
- 1 planet certificate : If a player owns 1 planet certificate, he or she did try to adapt the energy network. Unfortunately this did not create an advantage on competition because they made the same improvements. Therefore, variable costs will remain level.
- 2 planet certificates : If a player owns 2 planet certificates, he or she did invest extensively in research on renewable energies and accordingly adapted the energy network. The player has an advantage in the competition because relatively to them, lower energy costs need to be paid. This results in a decrease of 100 Euro on variable cost for the next payment.

*Planet Situation: Animal transport*

The improvement of the conditions of animal transport is an issue in right-centre Europe. Because of the integration of environmental issues in the law, the transport sector will have to deal with governmental regulations on animal transport.

*Effect:*

This situation will effect all players.

Proper conditions of animal transport legally binding in right-centre Europe. Players will need to comply with government regulations regarding their facilities for animal transport.

*Influence of certificates:*

0 planet certificates : If a player did not invest in planet certificates, he or she did not comply with government regulations on animal transport. Therefore animals can not be transported by this player. The player will loose the income of 4 cargo units for the duration of one play round.

1 planet certificate : If a player owns 1 planet certificate, he or she is willing to improve the facilities for animal transport, but did not yet do so. The player is allowed to transport animals after changing his or her facilities. Till then, no animal transport is allowed. The player will loose the income of 2 cargo units for the duration of 1 play round.

2 planet certificates : If a player owns 2 planet certificates, he or she has invested in proper facilities for animal transport. This player operates in compliance with government regulations in this area. The player will not loose income.

Planet Situation: Environmentally conscious transport of goods

Right-centre Europe is in favor of modes of transport which cause less damage to the environment in particular in urban areas, while more long-distance transport of goods need to be transferred to environment respectful combined transport means (railways, inland navigation and coastal shipping). The rebalancing from less environmental conscious companies towards these less damaging modes of transport will be encouraged by users picking up the tab for collective harmful effects and infrastructure costs.

*Effect:*

This situation effects players in the cargo business.

Due to promotion of, and improvements in, railway and waterway networks by government support a degree of cargo customers chooses for these modes of transport instead of air travel. Players who invested in substitute products will be able to keep these customers, although in another sector. Costs in the airline cargo market will rise because of the fact that players need to pay for the environmental damage caused by air traffic.

*Influence of certificates:*

0 planet certificates and no substitute products:

If a player owns 0 planet certificates and no substitute products, he or she did not invest in research on ways to decrease or prevent environmental damage. The player needs to pay for collective damage a fine of 100 Euro. Because the player owns no substitute products, he or she does not operate in surface transport. The customers who went to surface transport are therefore lost. Income from cargo will decrease with 4 units for the duration of 1 play round.

0 planet certificates and substitute products:

If a player owns 0 planet certificates but does own substitute products, he or she did not invest in research on ways to decrease or prevent environmental damage. The player needs to pay for collective damage a fine of 100 Euro. The player is able to keep servicing the cargo segment because of his investments in substitute products. There is no income loss.

1 planet certificates and no substitute products:

If a player owns 1 planet certificates but no substitute products, he or she did invest in research on ways to decrease or prevent environmental damage. Because of the small scale of this research, environmental damage could not completely be prevented. The player needs to pay for collective damage a fine of 50 Euro. Because the player owns no substitute products, he or she does not operate in surface transport. The customers who went to surface transport are therefore lost. Income from cargo will decrease with 4 units for the duration of 1 play round.

1 planet certificate and substitute products:

If a player owns 1 planet certificates and owns substitute products, he or she did invest in research on ways to decrease or prevent environmental damage. Because of the small scale of this research, environmental damage could not completely be prevented. The player needs to pay for collective damage a fine of 50 Euro. The player is able to keep servicing the cargo segment because of his investments in substitute products. There is no income loss.

2 planet certificates and no substitute products:

If a player owns 2 planet certificates but no substitute products, he or she conducted extensive research on ways to decrease or prevent environmental damage. Environmental damage was prevented and therefore no fine needs to be paid. Because the player owns no substitute products, he or she does not operate in surface transport. The customers who went to surface transport are therefore lost. Income from cargo will decrease with 4 units for the duration of 1 play round.

2 planet certificates and substitute products:

If a player owns 2 planet certificates and substitute products, he or she conducted extensive research on ways to decrease or prevent environmental damage. Environmental damage was prevented and therefore no fine needs to be paid. The player is able to keep servicing the cargo segment because of his investments in substitute products. There is no income loss.



*Profit Situation: Increased citizen mobility*

In right-centre Europe, the functioning of the internal labour market is improved by improving citizen's geographical and professional mobility. This is done by increasing the transferability of social rights via the Member States and mutual recognition of qualifications and training throughout Europe.

*Effect:*

This will effect players in the cargo business.

Professionalism and special handling skills are important factors in for instance the emergency traffic- and routine perishable traffic segment. These segments are very costly to operate in. The mutual recognition of qualifications and training throughout Europe will make new capable and cheaper labour forces available for the player and the player's competitors. Missing the boat might result in a disadvantage.

*The influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she did forecast the new labour market opportunity. Competition did forecast it and therefore gains an advantage in the cargo segment. The player will loose the income of 2 cargo units for the duration of 1 play round.
- 1 profit certificate : If a player owns 1 profit certificate, both the player and competition forecasted the upcoming opportunity. For both parties no advantage is gained. Income will remain level
- 2 profit certificates : If a player owns 2 profit certificates, he or she did conduct extensive research on market developments and therefore forecasted the upcoming opportunity quicker than competition. An advantage is gained and the player will gain the income of 1 cargo unit for the duration of 1 play round.

*Profit Situation: Tourism best practice platform*

Right-wing Europe sees tourism as an important factor of economic, social, cultural and political integration at EU level. Tourism creates a substantial amount of employment and has a knock-on effect on other sectors of economic life. Therefore it should be promoted by selecting and promoting best practices in the industry making it possible to obtain worthwhile results more quickly by.

*Effect:*

This situation will affect players that invested in the leisure business.

A platform on best practices in the tourist branch is created in order to boost this sector. Players have the possibility of participating in this platform. By doing this they will be able to learn from other participants and will be able to benefit from the occurring boost of the tourist sector.

*Influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she did not participate in the platform. Competitors who did were able to benefit from the boost in the tourist branch and took some of the players leisure travelers. The player will lose the income of 2 leisure seats for the duration of 1 play round.
- 1 profit certificate : If a player owns 1 profit certificate, he or she did participate in the platform. Due to the player's marginal contribution, his company was unable to gain more from the boost than competition. The level of income for the leisure business will remain the same.
- 2 profit certificates : If a player owns 2 profit certificates, he or she was an active participant in the platform. The player was able to benefit more substantially from the boost than most competitors. The player will gain the income of 2 leisure seats for the duration of 1 play round.

*Profit Situation: New entrepreneurs*

In right-wing Europe entrepreneurship is highly valued and promoted. The public authorities, and more particularly the Union, will create the general fiscal, financial and social conditions that foster start-ups, research and investment. To encourage private initiatives, the general taxation level is reduced. European businesses are provided with an environment that facilitates economic activity and enables it to face competition in the global economy. Company start ups are promoted. Initiative, risk-taking and performance are made socially attractive thereby encouraging the emergence of entrepreneurship.

*Effect:*

This situation will effect players in the leisure business.

Due to attractive political fiscal, financial and social conditions many start-ups of individual entrepreneurs can be witnessed in many sectors including air travel. These entrepreneurs are highly valued by European citizens because of the social attractiveness of initiative, risk-taking and performance. For the players the risk exists of loosing leisure passengers to these new "risk-takers" because of the sensitivity of the leisure passenger to its social context. Players can prevent this by showing that, they to admire these risk-takers by supporting them with knowledge or by forming partnerships with them.

*Influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she did not support the new entrepreneurs nor formed partnerships. Leisure travelers are more attracted to the airlines of these new "risk-takers" because it is more socially attractive to do so. The player will loose the income of 2 leisure seats for the duration of 1 play round.
- 1 profit certificate : If a player owns 1 profit certificate, he or she did support the new entrepreneurs but did not form partnerships with them. Leisure travelers are willing to fly with a company that is showing affection to these new entrepreneurs. Income on leisure seats will remain the same.
- 2 profit certificates : If a player owns 2 profit certificates, he or she did support the new entrepreneurs and formed partnerships with them. Because of this some of the player's routes are perceived as being flown by this new "risk-takers". This makes the player's airline more socially attractive. The player will gain the income of 2 leisure seats for the duration of 1 play round.

*Profit Situation: A competitive innovative market*

The ability to take the front lead in the field of new technologies will be crucial for Europe's Competitiveness in the coming years in right-centre Europe. The Priority is put on research and innovation by coordinating programmes to avoid redundancy; by ensuring collaboration between research centres to increase degrees of specialization; by encouraging the movement of knowledge and researchers; by ensuring cooperation between industry, researchers and educational establishments throughout the Union in order to foster scientific innovation and industrial development

*Effect:*

This situation will effect all players.

Constant research is important in right-wing Europe because standing still will mean losing the innovation race to your competitors. Research in new methods on technology dealing with the checking in of passengers or new more speedy ways of baggage handling are just some examples that speed up the airlines operations and increase its efficiency. The increase of speed is favorable for an airlines cargo market. Most cargo niches perceive speed as an important need and probably will use it as a criterion while choosing a transport company. Efficiency will lower operation cost and will allow for greater flexibility. Greater flexibility is important for the business traveler, and lower operation costs are important for the leisure traveler if this means for them that prices are decreasing. To distinguish your airline from other airlines you will need to be on top of innovations to prevent losing customers to competitors.

*Influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she does not invest in research and development. Competitors are far more innovative and steal a part of your customers. The player will loose the income of 4 cargo units, 4 business seats and 4 leisure seats for the duration of 1 play round.
- 1 profit certificate : If a player owns 1 profit certificate, he or she invested in R&D at the same level as his or her competitors. Therefore no advantage is created and income will remain the same.
- 2 profit certificates : If a player owns 2 profit certificates, he or she did invest extensively in R&D. Because of this an advantage on the player's competitors is created. The player will gain the income of 4 cargo units, 2 business seats and 2 leisure seats for the duration of 1 play round.

*Profit Situation: New markets inside EU*

Right-wing Europe has a single liberalized economy. Poorest regions are included in the new single economy because no part of Europe can lack behind.

*Effect:*

This situation will effect each player.

In a liberalized single market new opportunities occur. New customer segments appear in former poor regions. Because of government policies, the potential of poorer regions is developed. If proper marketing research and methods are conducted players will be able to enter these new markets. At first hand it will be possible to enter the business passenger travel market and the cargo market because these are market segments in which price is not that important. Investing more extensive research on marketing will even bring some new leisure travelers because next to price, social status also is an important factor in the leisure traveler's mind. Marketing aimed at social status could convince them of flying.

*Influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she did not invest in proper marketing research and methods. The new opportunities from the new potential market are not perceived in time and therefore income on all segments will remain the same.
- 1 profit certificate : If a player owns 1 profit certificate, he or she did invest in marketing research and methods. This efforts where enough to convince business passengers and cargo customers to use the airline's services, but marketing still was not sufficient to convince the leisure passenger. The income of leisure seats will remain the same. The player will gain the income of 2 business seats and 1 cargo unit for the duration of 1 play round.
- 2 profit certificates : If a player owns 2 profit certificates, he or she did extensively invest in marketing research and methods. Business and leisure passengers decide to fly with the airline, as well as cargo customers. The player will gain the income of 2 business seats, 2 leisure seats and 1 cargo unit for the duration of 1 play round.

*Profit Situation: Global Europe*

Relationships with other global regions are intensified. Some relationships are meant to help create political stability in those regions, others have commercial intentions. Right-centre Europe is exploring the option of creating a free trade area with the countries of NAFTA covering also the areas of competition, market access, trade facilitation and government procurement in order to create an example for others to follow.

*Effect:*

This situation will affect all players.

A free trade area is established between Europe and the NAFTA countries. Not being prepared for the arrival of new competitors could mean a loss of market share for European Airline companies. Players need to invest in proper market research in order to prevent this.

*Influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she did not invest in proper market research. New competition from the NAFTA companies was too strong. The player will lose the income of 2 cargo units, 2 business seats and 4 leisure seats for the duration of 1 play round.
- 1 profit certificate : If a player owns 1 profit certificate, he or she conducted proper market research and therefore was prepared for the arrival of new competition. No income loss occurs.
- 2 profit certificates : If a player owns 2 profit certificates, he or she conducted extensive market research. Therefore the player was not only prepared for the arrival of new competition, but was also able to gain market share in the new-markets. The player will gain the income of 2 cargo units, 2 business seats and 4 leisure seats for the duration of 1 play round.

## ***Right-wing Europe***

### *People Situation: Terrorism*

In right-wing and right-centre Europe, safety is a main issue. Due to the growing media attention to terrorism, citizens want their environment to provide safety and security.

#### *Effect:*

This situation will both effect players who invested in passenger business travel, and players who invested in passenger leisure travel.

The hijacking of a plane by terrorists has caused concern amongst business and leisure travel. Safety is a basic need for both the short-haul business traveler and the leisure traveler, although is more important to the latter.

#### *Influence of certificates:*

0 people certificates : If a player did not invest in people certificates, he or she did not take and communicated investments in safety measures on his or her flights. The player will lose the income of 2 business seats and 4 leisure seats for one play round.

1 people certificate : If a player owns 1 people certificate, some measure are taken regarding safety on flights. Although these measures are enough for the business traveler to keep flying, they still are not sufficient enough to comfort the leisure traveler. Therefore the player will lose the income of 4 leisure seats for one play round.

2 people certificates : If a player owns 2 people certificates, extensive measures were taken to guarantee passenger safety during flights. Both business and leisure passengers have faith in this player and will keep traveling by air.

*Planet Situation: Renewable energies*

In the context of the Kyoto protocol, right-centre Europe will commit to the reduction of greenhouse gasses. There is a degree of commitment towards the introduction of renewable energy use.

*Effect:*

This situation effects all players.

The promotion of renewable energies causes old forms of energy supply to become more expensive. In turn renewable energies will be cheaper for each player if proper investments in research and implementation on this area are made.

*Influence of certificates:*

- 0 planet certificates : If a player did not invest in planet certificates, he or she did not invest in research on this area, and did not consider implementation of renewable energy use. Because of the increase in price of “old fashioned” energies variable costs for this player will rise. This player needs to pay 100 Euro more on his next variable cost payment.
- 1 planet certificate : If a player owns 1 planet certificate, he or she did conduct research on renewable energies and implemented the use of these renewable forms of energy supply in some departments of his or her airline. Variable costs will remain the same on the next variable cost payment.
- 2 planet certificates : If a player owns 2 planet certificates, he or she conducted research on renewable energy supply, and fully implemented this in his or her airline. The player may pay 100 Euro less on the next variable cost payment.



*Profit Situation: A competitive innovative market*

The focus in right-wing Europe lies on innovation. The modernization of the economy and an innovative society are fostered.

*Effect:*

This situation will effect all players.

Constant research is important in right-wing Europe because standing still will mean losing the innovation race to your competitors. Research in new methods on technology dealing with the checking in of passengers or new more speedy ways of baggage handling are just some examples that speed up the airlines operations and increase its efficiency. The increase of speed is favorable for an airlines cargo market. Most cargo niches perceive speed as an important need and probably will use it as a criterion while choosing a transport company. Efficiency will lower operation cost and will allow for greater flexibility. Greater flexibility is important for the business traveler, and lower operation costs are important for the leisure traveler if this means for them that prices are decreasing. To distinguish your airline from other airlines you will need to be on top of innovations to prevent losing customers to competitors.

*Influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she does not invest in research and development. Competitors are far more innovative and steal a part of your customers. The player will loose the income of 4 cargo units, 4 business seats and 4 leisure seats for the duration of 1 play round.
- 1 profit certificate : If a player owns 1 profit certificate, he or she invested in R&D at the same level as his or her competitors. Therefore no advantage is created and income will remain the same.
- 2 profit certificates : If a player owns 2 profit certificates, he or she did invest extensively in R&D. Because of this an advantage on the player's competitors is created. The player will gain the income of 4 cargo units, 2 business seats and 2 leisure seats for the duration of 1 play round.

*Profit Situation: New markets inside EU*

Right-wing Europe has a single liberalized economy. Poorest regions are included in the new single economy because no part of Europe can lack behind.

*Effect:*

This situation will effect each player.

In a liberalized single market new opportunities occur. New customer segments appear in former poor regions. Because of government policies, the potential of poorer regions is developed. If proper marketing research and methods are conducted players will be able to enter these new markets. At first hand it will be possible to enter the business passenger travel market and the cargo market because these are market segments in which price is not that important. Investing more extensive research on marketing will even bring some new leisure travelers because next to price, social status also is an important factor in the leisure traveler's mind. Marketing aimed at social status could convince them of flying.

*Influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she did not invest in proper marketing research and methods. The new opportunities from the new potential market are not perceived in time and therefore income on all segments will remain the same.
- 1 profit certificate : If a player owns 1 profit certificate, he or she did invest in marketing research and methods. This efforts where enough to convince business passengers and cargo customers to use the airline's services, but marketing still was not sufficient to convince the leisure passenger. The income of leisure seats will remain the same. The player will gain the income of 2 business seats and 1 cargo unit for the duration of 1 play round.
- 2 profit certificates : If a player owns 2 profit certificates, he or she did extensively invest in marketing research and methods. Business and leisure passengers decide to fly with the airline, as well as cargo customers. The player will gain the income of 2 business seats, 2 leisure seats and 1 cargo unit for the duration of 1 play round.

*Profit Situation: Europe as a global player*

In right-wing Europe the gap between Europe's economic and political dimension is bridged in order to make Europe a global player. Europe must become one community to become a global player while still taking into account cultural diversity.

*Effect:*

This situation will effect each player.

The opening up of former national markets to become one European market will encompass new opportunities and threats for each player. Interest in and from new poorer regions inside Europe rises. The liberalization of markets will make it possible to close new and cheaper maintenance deals in Eastern-Europe. This is in favor of the player because it seems to be the case that his or her old maintenance provider is increasing prices. If the player invests sufficiently in research on the cultures of the new potential maintenance suppliers, it might be possible to make a profitable deal.

*The influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she did not do research on the new cultures. Because of this the negotiations with the new potential suppliers failed and therefore the player is forced to pay the higher prices of the old maintenance supplier. The amount paid on maintenance will be 100 Euro higher on the next maintenance purchase.
- 1 profit certificate : If a player owns 1 profit certificate, he or she did do some cultural research. This research was not sufficient enough to facilitate smooth negotiations. The maintenance price will remain the same.
- 2 profit certificates : If a player owns 2 profit certificates, he or she did conduct extensive research on cultural diversity. Negotiations went smoothly with a profitable maintenance deal as a result. The amount paid on maintenance will be 100 Euro lower on the next maintenance purchase.

*Profit Situation: Increasing trade with developing countries*

Right-wing Europe will promote a more generous and targeted aid policy, and must give through the multilateral trading system the world's poorest nations access to our markets to escape the poverty trap.

*Effect:*

This situation will effect all players.

Some new suppliers of spare parts have entered the European maintenance market because of the opening up of the European markets to developing countries. The increase of trade with developing countries has brought the need for European companies to learn how to deal with these new cultures. If European airline companies are not capable of dealing with these new cultures, some profitable maintenance deals could be called off.

*The influence of certificates:*

- 0 profit certificates : If a player did not invest in profit certificates, he or she did not conduct any research on the arrival of new cultures on the maintenance market. The player neither invested in proper cultural training for enabling employees to deal with these new suppliers. Cultural misunderstanding caused both parties to collide and resulting in calling off a profitable maintenance deal. The player will have to pay 100 Euro more on his next maintenance purchase.
- 1 profit certificate : If a player owns 1 profit certificate, he or she did do research on the new cultures but was unable to translate this sufficiently to the employees because of lack of sufficient training. After long and difficult negotiations it was possible to make a maintenance deal for the same price as usual. The player therefore pays the normal price on his next maintenance purchase.
- 2 profit certificates : If a player owns 2 profit certificates, he or she did do sufficient research on new cultures and also translated this to the employees by proper training. This resulted in a profitable maintenance deal. The player pays 100 Euro less on his next maintenance purchase.

**Appendix B : Product cards**

<b>Product card</b>	
Aircraft type	: Narrow-body 1 Class
Price	: € 600
Capacity	: 50 leisure seats

<b>Product card</b>	
Aircraft type	: Narrow-body 2 Class
Price	: € 600
Capacity	: 42 leisure seats 4 business seats

<b>Product card</b>	
Aircraft type	: Narrow-body Cargo
Price	: € 600
Capacity	: 14 cargo units

<b>Product card</b> Substitute products	
Price	: € 500

<b>Product card</b>	
Aircraft type	: Wide-body 1 Class
Price	: € 1000
Capacity	: 90 leisure seats

<b>Product card</b>	
Aircraft type	: Wide-body 2 Class
Price	: € 1100
Capacity	: 75 leisure seats 9 business seats

<b>Product card</b>	
Aircraft type	: Wide-body Cargo
Price	: € 1000
Capacity	: 25 Cargo units

## Appendix C : Certificates

**1st people certificate**

€ 400,-

**1st planet certificate**

€ 400,-

**1st profit certificate**

€ 400,-

**2nd people certificate**

€ 800,-

**2nd planet certificate**

€ 800,-

**2nd profit certificate**

€ 800,-



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