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Maximising the Impact of Skills in the Oil and Gas Industry

Interim Research Report

Executive Summary

September 2010

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1. Introduction

1.1 This Executive Summary provides a brief overview of the work conducted so far into the topic of skills utilisation in the oil and gas industry. This summary is divided into five sections: context; background; methods; findings; and next steps. It is an abridged version of our Interim Report, which was published in June 2010. If you would like a hard copy of the Interim Report or require a large-print version of the Executive Summary, please contact Alison Watson at a.c.watson@rgu.ac.uk.

2. Context

2.1 The Scottish Government's *Skills Strategy* sets out its strategy and the rationale for the skills agenda in Scotland. The strategy emphasises the need to *utilise* people's skills rather than focussing simply on *acquiring* or *developing* skills. Effective skills utilisation is identified as target for industrial sectors across the Scottish economy. The following definition of better skills utilisation – as provided by the Scottish Government – was adopted for our work:

Confident, motivated and relevantly skilled individuals who are aware of the skills they possess and know how to best use them in the workplace

working in

workplaces that provide meaningful and appropriate encouragement, opportunity and support for employees to use their skills effectively

in order to

increase performance and productivity, improve job satisfaction and employee well-being, and stimulate investment, enterprise and innovation.

3. Background

3.1 The research has been funded by the Scottish Funding Council as part of a broader package of thirteen projects examining the concept of skills utilisation. As part of this project, a team from the Robert Gordon University's Centre for International Labour Market Studies (CILMS) and Institute for Management, Governance and Society (IMaGeS) was commissioned to carry out research on the relevance of the project to the industry, current approaches to skills utilisation, and possible future directions for skills utilisation strategy in the industry. This 'research' phase sought to address the following key questions:

- What does skills utilisation mean in theory and in practice?
- What relevance does the concept of skills utilisation have for the oil and gas industry?
- How are skills currently utilised and measured in the industry?
- How might skills utilisation be better addressed in the industry?
- What role might this particular project play in the better use of skills?
- What constitutes best practice in skills utilisation?
- Can 'best practice' from elsewhere be transferred to the oil and gas industry?

4. Methods

4.1 We undertook a wide-ranging literature review and conducted in-depth interviews with representatives of a number of different sectors within the oil and gas industry.

4.2 The literature review sought to clarify the meaning and scope of the concept of skills utilisation, as well as exploring documentary evidence of its prior usage in an oil and gas context. We also drew upon the literature to identify a list of Skills Utilisation Practices (SUPs), which would serve as the basis for our discussions with the companies involved in the interview phase of the project.

4.3 In total, we conducted 25 different in-depth interviews with a wide range of stakeholders. Through these discussions, we were able to draw upon the industry's expertise in order to address the questions above.

5. Findings

5.1 After reviewing a wide range of literature on the role played by skills in business success, we identified a number of established working practices which might be thought of as contributing to the better use of skills. The 'Skills Utilisation Practices' we identified (SUPs) are laid out below, and are categorised according to the first two aspects of the Scottish Government's definition (see section 2.1).

SUPs contributing to: Confident, motivated and relevantly skilled individuals who are aware of the skills they possess and know how to best use them in the workplace	**SUPs contributing to: Workplaces that provide meaningful and appropriate encouragement, opportunity and support for employees to use their skills effectively**
Linking business strategy with specific skills	Job rotation
Regular review of employees' training needs	Flexible job descriptions
Training to perform multiple jobs	Cross-function teams
Liaison with HEIs/FEIs to ensure graduate suitability	Self-managed or self-directed (team)working
Mentoring	Reflective training
Learning transfer	"Open Doors" policy and "Feedback Loop"
Induction	Job (re)design
Use of Personal Development Plans	Rewards for innovation

5.2 Our literature review and initial consultation interviews also identified a number of key 'enablers' of skills utilisation: in other words, prerequisite factors which needed to be in place within companies if SUPs were to work effectively. These enablers include:

- Strategic vision (i.e. leadership)
- Effective management
- Solid skills base
- Stakeholder buy-in (i.e. employer commitment and employee engagement)
- Competence frameworks
- Environmental factors (e.g. working culture in specific oil rigs, teams etc.)

5.3 Our interviews identified that the concept of skills utilisation was seen as less of a priority for the industry than we had expected. Most of the companies we spoke to did not believe that there was a particular problem with the under-utilisation of skills within the oil and gas industry. Indeed, many of the SUPs we identified were already described as being widely used throughout the industry. In particular, SUPs such as induction, learning transfer, and the use of personal development plans, "open doors" policies and "feedback loops" appear to be well-established within many companies.

5.4 Where interviewees had experience of specific SUPs, we found that they usually had greater experience of implementing individual-level practices than workplace-level ones.

5.5 Rather than focussing upon skills utilisation as a problem, interviewees focussed upon specific 'enablers' as problematic. In particular, a lack of employee motivation, deficiencies in leadership and management, and gaps in the skills base available to the industry were highlighted as issues which gave greater cause for concern than any apparent under-utilisation of skills. In terms of the skills base, interviewees further specified that issues included a general shortage of skilled people coming in

to the industry and a shortage of core aptitudes such as literacy and numeracy, decision-making and communication. In addition, an urgent need to address the problem of inter-generational skills transfer was seen as a key need. Although many companies had sought to address this using mentoring schemes, their experiences were generally negative due to the lack of training, rigour and proficiency of many mentors in the industry.

5.6 We also found that there is an issue in relation to the measurement of skills utilisation within the industry. The literature review and our interviews identified competence frameworks as a potentially effective method of tracking employees' skills and aptitudes, as well as recording the way in which they are put to use. However, although such record-keeping was seen by interviewees as a crucial 'enabler' to the idea of making best use of their employees' skills, most companies tend to record competence in the shape of formal accreditation only, rather than including 'softer' skills or aptitudes.

5.7 As such, rather than identifying problems with specific Skills Utilisation Practices, most interviewees tended to highlight these more fundamental areas as a barrier to better skills utilisation. There were, however, some noteworthy findings in relation to specific Skills Utilisation Practices. These are summarised below, along with the implications of the 'enabler' issues outlined above.

5.8 *Individual Level Skills Utilisation Practices*

5.8.1 Most of the companies we spoke to felt that they already used a number of practices to get the most out of their employees, although this was not always done in the context of skills utilisation explicitly. Much of the work being done in the industry to better utilise people's skills was simply seen as common sense or good business practice, rather than being part of a drive specifically aimed at utilising people's skills more effectively. In particular, very few interviewees believed that an intervention or pilot in the areas of induction, personal development plans, learning transfer or

training needs reviews would contribute to a significantly better level of skills utilisation in their company.

5.8.2 On the other hand, interviewees made it clear that there were some areas in which practices focussed on delivering confident, competent and motivated individuals might benefit from an intervention or innovative pilot. In particular, interviewees highlighted the mentoring process as an area which requires urgent attention if the 'demographic time-bomb' facing the industry is to be addressed. Many companies appeared to find it difficult to transfer knowledge between their oldest and youngest employees. As many companies also reported a shortage of 'intermediate age' workers, there was a worry that impending retirements could lead to potentially serious skills losses. Some mechanism was therefore required which would allow companies to bring their older and younger workers together with a view to ensuring effective knowledge transfer or skills transfer. There was a clear preference among interviewees for this to be done using a mentoring format. In some cases, interviewees had experience of trying to implement this type of mentoring scheme, although it was accepted that there was a lack of rigour and effectiveness in the attempts which had been made.

5.8.3 There was also felt to be an important issue with management within the industry. Good managers and/or team leaders were seen as vital components in any effort to ensure that individuals are able to put their skills to best use. However, many companies reported that employees who were promoted to management positions were often selected on the basis of their technical aptitude rather than managerial ability. As such, many new managers in the industry found it difficult to cope with the new responsibilities which accompanied their new role. This, coupled with the often short-term, project-based nature of the industry, meant that many managers or team leaders would "yo-yo" between a management or leadership position and their role as a team player.

5.8.4 At an individual level, many interviewees also highlighted shortcomings in the skills base of entrants to the industry. In particular, fundamental deficits in literacy,

numeracy and communication abilities were highlighted. These were identified as problematic across a wide range of entrants to the industry, from school leavers taken on as apprentices, to engineering graduates from universities. As such, it was felt that there was a clear need for greater dialogue between industry and education providers (from high schools up to universities) in order to better ensure that entrants to the industry had skills which were as appropriately focussed as possible to meet the demands of the industry.

5.9 *Workplace Level Skills Utilisation Practices*

5.9.1 Again, many the companies we spoke with already had experience of a number of workplace-level practices to get the most out of their employees. In particular, reward schemes appear to be widely used throughout the industry. However, these are rarely implemented with a view to making better use of skills, but rather with a view to incentivising increased performance. Similarly, 'open doors' policies were also widely claimed to be in use.

5.9.2 Overall though, our interviews suggested that there has been far less attention paid by companies to the workplace element of skills utilisation than to the individual element. In particular, there was very little evidence of companies introducing practices which aim to give greater autonomy to employees (e.g. job rotation, self-directed working, job (re)design or cross-function teams). Interestingly, we found a small number of companies who do claim to have introduced practices which increase employee autonomy. Furthermore, these companies claim that this approach has succeeded in delivering higher levels of performance, productivity, motivation, engagement, safety and staff retention.

5.9.3 Despite these apparent benefits, we often encountered a high level of uncertainty and caution among other companies in relation to the idea of devolving greater autonomy to employees. Sceptics claimed that issues of accountability, responsibility and health and safety would effectively prevent them from giving greater autonomy to their workers. As such, they were not convinced that any pilot(s) aimed at

introducing such practices to companies with no prior experience of them would attract much interest in the oil and gas industry. However, many of these companies did express an interest in seeing greater evidence of employee autonomy working effectively and safely within the oil and gas industry. If evidence could be provided of these practices working successfully in the oil and gas industry, companies might be more willing to consider alternative approaches to employee autonomy.

6. Next Steps

6.1 On the basis of the findings of the research phase of the project, we are now preparing to launch the second phase of the project. This will involve rolling out a number of funded pilots, which will be made available (free of charge) to interested companies within the oil and gas industry. The pilots we are proposing are heavily based upon what companies told us during our discussions.

6.7 For further information or to register your interest in participating in the pilots and activities, please contact the Project Manager, Alison Watson, at: a.c.watson@rgu.ac.uk.

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1. INTRODUCTION

1.1 Overview

This interim report provides an overview of the research phase of a project examining the way in which skills use can be maximised in the oil and gas industry. The research has been funded by the Scottish Funding Council as part of a broader package of thirteen projects examining the concept of skills utilisation. This particular project is intended to establish current trends in skills utilisation in the oil and gas industry, and to lay the foundations for an evaluative study of the way in which specific skills utilisation practices can and / or do operate in an oil and gas context.

1.2 Research Team

As part of the project, the Steering Group commissioned a team from the Robert Gordon University's Centre for International Labour Market Studies (CILMS) and Research Institute for Management, Governance and Society (IMaGeS) to undertake primary and secondary research to establish the relevance of the project to the industry and to identify possible ways forward. The research team comprises David Gibbons-Wood (CILMS) and Dr Iain MacLeod (IMaGeS). Dr Elizabeth Tait (formerly of CILMS) also played a significant role in the first stage of the research work.

This document provides an overview of the process followed by the research team so far, and reports upon the findings which will shape the next stage of the project.

2. METHODOLOGY

2.1 Original Brief

The Research Team's original tender identified eight key objectives which would address the requirements of the research component of the project. These objectives were:

1. To consult with industry groups, HE providers and SMEs to develop a mutually understood definition of skills utilisation and the component concepts that contribute to effective skills utilisation;
2. To define and agree the meaning of the term 'productivity' in the workplace and establish appropriate metrics analysing productivity with the industry;
3. To identify and analyse key skills relevant to productivity in the context of oil and gas;
4. Identify and analyse areas of skills development and improvement and how these can be enhanced by RGU and Aberdeen College;
5. To identify specific issues with graduate skills and how this impacts upon their performance in their workplace;
6. To identify barriers to the utilisation of skills and the impact that this has on productivity;
7. To develop a common understanding of workplace productivity and skills utilisation and propose a policy direction to inform better communication between the higher education and business community to ensure that these skills requirements are met; and
8. To develop and test innovative models between academic institutions and employer organisations that would yield a positive impact on workplace productivity through appropriate skills utilisation.

The first six of these objectives represent the first stage of the research. In addressing these six objectives, the scope of a number of different key elements to the research was to be established. In particular, the Scoping Stage of the research would aim to establish:

- What skills utilisation means in theory and in practice;

- What relevance the concept of skills utilisation has for the oil and gas industry;
- How skills are currently utilised and measured in the industry;
- How skills utilisation might be better addressed in the industry;
- What role in the better use of skills this particular project might play;
- What constitutes best practice in skills utilisation; and
- Whether 'best practice' from elsewhere might be transferable to the oil and gas industry.

Establishing answers to these issues would thus provide a solid foundation on which the second stage of the research can be built. This Pilot stage aims to put into action the lessons learned from the Scoping stage by proposing one or more skills utilisation practices (or packages thereof) to which interested companies from the industry could sign up. Working alongside the volunteer companies over the course of the following year, the research team would evaluate these practices and assess the degree to which they contributed to better skills utilisation within the companies.

2.2 Approach Adopted

The methods which would ultimately be used to achieve these eight research objectives are set out below in Table 1.1. This represents a slight departure from the originally proposed methodology, details of which are provided in the next section of this report. At time of writing, the specific nature of the approaches to be used in the Pilot Stage of the research have not been finalised.

Table 1.1: Research Objectives and Corresponding Approaches

Research Objective	Data Collection Method
1	Literature review Interviews
2	Interviews
3	Interviews
4	Interviews Pilot Development
5	Literature Review Interviews
6	Interviews
7	Evaluation Stage (multiple possible approaches)
8	Pilot Stage (multiple possible approaches)

Further examining the two-stage process outlined above (i.e. Scoping and Pilot stages), the research team's work can be seen to consist of a number of different phases, a simplified schema of which is laid out below.

Stage One: Scoping

- Literature Review and Consultation Interviews
- Semi-structured Interviews and Analysis
- Reporting

Stage Two: Pilots

- Pilot Development
- Pilot Delivery
- Pilot Evaluation
- Reporting

As can be seen, within each of these stages, the work can be broken down into a number of distinct (albeit overlapping) phases. In Stage One, the research involves the preparatory phase consisting of a literature review and small number of initial consultation interviews, followed by a series of deeper and broader interviews in the next phase. The analysis which accompanies this is then followed by the production of a report (i.e. this report) covering the results of the first two areas of work.

The second stage builds upon the results of the first to deliver one or more workable 'pilots' which aim to investigate the impact of different skills utilisation practices and / or approaches in the oil and gas industry. Firstly, this stage would build upon the findings of the research to identify the areas which should provide the focus for the second stage. After communicating the results of the research to the wider team involved in the project (i.e. the Steering Group and External Advisory Group), a series of meetings would be held to suggest, develop and finalise possible ways of working with industry representatives to try out innovative practices or to learn from current practice. The subsequent 12 month period would allow for a number of these 'pilots' to take place, accompanied by a programme of ongoing evaluation for each. Again, a research report detailing the findings of the pilots / evaluation would be produced at the end of the pilot period.

The methodology for the research stage of the project may be thought of as consisting of three distinct but complementary phases.

1. Scoping study; establishing nature and relevance of problem (literature review and initial consultation interviews)
2. Principal research phase (semi-structured interviews)
3. Synthesis of findings (production of interim report and recommendations)

Due to practical difficulties encountered whilst attempting to deliver Stage One of the research, the original methodology had to be revisited. Both the original proposals and the methodological revisions will now be explored in greater detail.

2.2.1 Stage One: Scoping

Stage One comprised three distinct elements: a review of relevant literature, a number of initial consultation interviews and a further round of semi-structured interviews.

2.2.1.1 Literature review

The first phase consisted of an initial review of relevant literature. This task helped to provide greater context to the study, in turn providing greater structure for the future phases of the research process.

The review of literature was conducted with a view to identifying the relevance of skills utilisation to the oil and gas industry. In this respect, it aimed to provide an overview of the growth in salience of the concept of skills utilisation in recent years, approaches to skills utilisation, metrics which could be employed to measure the impact of skills utilisation practices, the relevance of skills utilisation to the oil and gas industry, and tangible examples of skills utilisation practices in the industry. In addition, a student from RGU's postgraduate Information Management course was tasked with sourcing and reviewing additional literature on High Performance Working Practices.

The literature review identified that there exists a number of well-established practices which aim to enhance worker productivity. Although these practices are undoubtedly important within the context of enhancing workplace performance, it must be borne in mind that the focus of this project is upon the narrower field of skills utilisation. Thus, whilst a staff association may be argued to be a working practice which contributes to better motivation, it is more difficult argue that it is a practice which necessarily engenders greater utilisation of employees' skills. As such, for the purposes of this research, we differentiate between the wider body of High Performance Working Practices (HPWPs) and those which either directly address employees' use of skills or have been shown within the literature to contribute directly to better use of skills. As such, whereas Ashton and Sung (2005) identify 35 different HPWPs, we identify a smaller subset of practices which can be implemented by organisations in order to make better use of their employees' skillsets.

Establishing exactly what practices are proven to have a beneficial impact upon employees' use of skills was an important step in preparing for the next stage of data collection. By identifying 'best practice' in skills utilisation, we obtained a template against which current practice in the oil and gas industry could be explored. In order to better contextualise this for interviewees, we adopted a typology based upon the Scottish Government's definition of skills utilisation.

> **Confident, motivated and relevantly skilled individuals who are aware of the skills they possess and know how to best use them in the workplace**
>
> working in
>
> **Workplaces that provide meaningful and appropriate encouragement, opportunity and support for employees to use their skills effectively.**[4]

By differentiating practices according to the intended object of each one (i.e. individuals or workplaces) rather than employing the typology used in the academic literature on skills utilisation (i.e. HR practices, high employee involvement practices and reward / commitment practices), it was intended to bring more of a straightforward, 'real world' feel to discussion of the practices. The typology thus adopted is provided in Table 2.1.

Table 2.1: Adopted Typology of Skills Utilisation Practices

Individual Practices	Workplace Practices
Linking strategy with specific skills	Job rotation
Regular review of training needs	Flexible job descriptions
Training to perform multiple jobs	Self-managed or self-directed teams
Liaison with HEIs	Cross-function teams
Mentoring	"Open Doors" policy
Learning Transfer	Rewards for Innovation
Induction	
Use of Personal Development Plans	

Source: Research Team (2010)

[4] Scottish Government (2010) *Skills for Scotland – Scotland's Skills Strategy – Making Better Use of Skills*. Available online at: http://www.scotland.gov.uk/Topics/Education/skills-strategy/making-skills-work/utilisation.

2.2.1.2 Initial Consultation Interviews

Secondly, a number of consultation interviews were carried out with key strategic partners of the project whilst the literature review was ongoing. These interviews aimed to help establish and contextualise the relevance of skills utilisation to the oil and gas industry. Interviews were semi-structured, and aimed to gain an early insight into the following important aspects of the topic:

- Industry structure
- Product market structure
- Characteristics of firms
- Skills and labour force characteristics
- Role / limitations of government levers
- Skills shortage and gaps
- Current practices
- Matching skills with business needs
- Current problems with application of skills
- Skills barriers
- Skills enablers
- Industry measures of skills utilisation / performance
- Improving skills utilisation
- Interplay with other agencies
- Pilot formation advice

A total of nine interviews were arranged and conducted with the following seven organisations:

- Aberdeen City Council (2)
- Aberdeenshire Council
- COGENT
- OPITO
- Offshore Contractors Association

- Scottish Enterprise (2)
- Skills Development Scotland

These interviews played a formative role in next steps of the project. In particular, they shaped our understanding of the nature of the industry and encouraged us to ensure that the different areas of the industry received adequate coverage. Specifically, we were recommended to focus not just upon large exploration and production firms, but rather to consider SMEs and micro-businesses and to differentiate between supply chain companies and those involved in exploration and production. It was also recommended that we include the growing subsea sector and consider the industry's move towards decommissioning and renewables as skills areas which would assume increasing prominence in the coming years.

We also learned from these interviews that 'skills utilisation' was not a widely understood concept in the industry. Although many consultees were familiar with the ideas of skills shortages and skills gaps, and of the traditional relationship between skills and productivity (i.e. more skills = more productivity), it was felt that skills utilisation would need to be appropriately contextualised in the subsequent interviews, with appropriate and meaningful examples of skills utilisation practices commended as an essential component of any interviews conducted with oil and gas industry if their answers were to be meaningful and constructive. This in turn served to reinforce our belief that as a result of its straightforwardness and 'real world' comprehensibility, the individual / workplace typology was the approach most likely to yield meaningful and relevant data.

2.2.1.3 Semi-Structured Interviews

The initial approach to this part of the Stage One research – as specified in the original research proposal – was to run a series of focus groups to which representatives of interested companies would be invited. The aims of the focus groups were:

- To gain sector-specific knowledge of the issues surrounding skills utilisation in the North East oil and gas sector;

- To gain an understanding of current measures of business performance, what measures (if any) are currently being used, and what measures might be most effective in evaluating pilot impact;
- To provide an opportunity to discuss the desirability, feasibility and likely impact of the various practices; and
- To identify potential barriers and pitfalls at an early stage of the research, thus ensuring that pilots are tailored appropriately to businesses' needs.

A call for interested companies was circulated using a variety of methods. Firstly, Scottish Enterprise Account Managers were encouraged to circulate the proposals to the companies with whom they were in frequent contact. OPITO circulated details of the research among their contacts, whilst the Offshore Contractors Association did likewise with their member organisations.

However, as the research team attempted to generate interest and recruit participant companies for the focus groups, two significant issues emerged which necessitated reconsideration of the original proposed methodology. Firstly, although a number of companies approached the research team to indicate their interest in the topic, there was a degree of scepticism or caution in relation to the idea of participating in a focus group. This was particularly the case when it was explained that the intention was to group companies according to industry sector and company size. Whilst companies were cautious about the idea of focus groups at a general level, this was heightened when they realised that they would be required to discuss such things as HR practice and company strategy in a group involving their direct market competitors (possibly as a result of sensitivities in the current financial climate).

It was explained to the research team that the idea of a focus group in itself would be enough to dissuade many companies from volunteering to participate. Indeed, the fact that so few companies came forward represented the second significant issue in the research team's ability to deliver the original methodology's proposed number of focus groups with sufficient numbers or homogeneity prior to the original deadline.

As such, a proposal was put to the project's Steering Group and External Advisory Group to adapt the original methodology, replacing the proposed focus groups with an approach based upon in-depth, semi-structured qualitative interviewing. As outlined above, this approach was favoured on a number of grounds, including the following:

- Speed of organisation;
- Greater richness of data gathered from each company;
- Better relationship established with each company;
- Greater willingness of companies to engage with one-on-one interviews;
- No need to wait until sufficient coverage (uniformity) is achieved; and
- Better ability to target specific sectors (e.g. filling a quota of SMEs).

In addition, the move from focus groups to semi-structured interviews would allow the research team to satisfy the original research objectives. Although the key attraction of the focus group approach lay in its ability to involve a large number of industry representatives in a relatively short space of time, the reluctance of businesses to participate effectively nullified this key strength. As a result, the research team proposed to focus upon achieving a deeper level of understanding of the issues relating to skills utilisation by investigating the issues in greater detail with a smaller number of contributors. Although this inevitably entailed speaking to fewer organisations than would have been the case using focus groups, this was to be offset firstly by the greater willingness of interviewees to discuss issues in a more anonymous manner than would have been possible in a focus group, and secondly by the richness of data which typically emerges from interviews in comparison with focus groups.

The findings of the initial consultation interviews played a key role in shaping the sampling frame used for the interviews. As laid out above, it was recommended that we attempt to involve a wide range of companies, ranging from the very small to the very large, and from both the supply chain and the exploration / production sector. Given the resources available to the research team, the proposed sampling matrix is provided below in Table 2.2. As this shows, it was originally intended to differentiate between companies using three different

company size categories and two different company sectors. Using the same non-probabilistic quota sampling approach which had been earmarked for the focus groups, it was proposed to conduct three interviews within each of the six segments identified by industrial sector and organisational size, giving a total of eighteen interviews overall.

Table 2.2: Proposed Sampling Matrix of Companies to Interview

		Company Size		
		SMEs (1-249)	Mid-Sized (250-499)	Companies of Scale (500+)
Company Sector	Exploration & Production	3	3	3
	Supply Chain	3	3	3

Source: Research Team (2010)

As it had initially been hoped to conduct six focus groups (each including six participant companies) this represents fewer companies than would originally have been involved in the focus groups. Again though, the evidence from the initial consultation interviews suggested that there may be considerable uniformity / commonality between companies of scale in different sectors, and between small to mid-sized companies within the same sector.

The proposed methodological revisions were approved by the Steering Group and External Advisory Group in early April 2010, with interviews subsequently taking place over the course of the remainder of April and May 2010. An amended call for interested companies (this time specifying that interviews would be used rather than focus groups) was again circulated by Scottish Enterprise, OPITO and the Offshore Contractors Association. In addition, contact was made with a number of oil and gas companies with whom RGU had previous experience of working. When contact was made with companies, it was explained that the research team was keen to speak to a representative of the company who was not only in touch with current working practices in the company, but who were also aware of the potential within the company of adopting new practices. There was considerable

variation in terms of the type of people we interviewed: from Personnel Managers in large multi-national companies, to Chief Executives and Managing Directors of smaller companies, for example.

Although a significantly greater degree of enthusiasm was expressed by companies in relation to participating in interviews, it remained a challenge to identify companies within specific segments. In particular, SMEs and mid-sized exploration / production companies were very difficult to identify, despite obtaining a company registration database from Scottish Enterprise. As such, within the revised timeline, it was only possible to interview sixteen companies. They were distributed across the size / industry sampling matrix as per Table 2.3 below.

Table 2.3: Matrix of Companies Interviewed

		Company Size		
		SMEs (1-249)	Mid-Sized (250-499)	Companies of Scale (500+)
Company Sector	Exploration & Production	0	1	4
	Supply Chain	4	5	2

Source: Research Team (2010)

Interviews were semi-structured, and followed a topic guide developed through the initial consultation interviews and the literature review. The topic guide used during the interviews covered the following areas:

Skills and Labour Force Characteristics

- Company labour force characteristics
- Main skills issues within the industry
- Specific productivity / performance issues to be addressed
- Issues with the application of skills in the workplace

- Enablers of skills utilisation
- Barriers to skills utilisation
- Matching skills with business needs
- Industry measures of skills utilisation

Current Workplace Practices: Motivating and encouraging individual employees

- Systems and / or processes in place to ensure individuals are aware of their skills and keen to make effective use of them
- Satisfaction with these systems and / or processes
- Impressions of other practices

Current Workplace Practices: Ensuring opportunities exist for effective skills use

- Systems and / or processes in place to ensure that opportunities are available and encouragement is given to employees to use skills in innovative and effective ways
- Satisfaction with these systems and / or processes
- Impressions of other practices

Barriers to pilot formation

- Barriers to be faced
- Need for tailored interventions

Impact measures

- Measuring success of pilot
- Data available to assess pilots

2.2.1.4 Reporting

The final aspect of the first stage of the project involved the findings of the research process thus far being written up into an interim report, along with suggestions on key areas to consider in developing the pilots. These are now considered in turn.

2.2.1.4.1 Production of Report

This report provides an overview not only of the process followed during the research stage, but also of the results emerging from each of these stages. Results are discussed in sections corresponding to the three principal research instruments employed (literature review, consultation interviews and semi-structured interviews). Within each section, results and findings are arranged and discussed thematically.

In relation to the initial consultation interviews, the notes taken during the interviews were combined with a full review of the audio recordings in order to identify the key themes in advance of drawing up the topic guide for the subsequent semi-structured interviews. The interviewer's notes were fleshed out in order to provide a grounding for the next stage of the research. This write-up was amended to form the basis of the relevant section in this report.

With regard to the review of relevant literature, the work done to identify and synthesise the findings from key sources was written up to provide the body of evidence which is reproduced in the relevant section of this report. The initial interviews and literature review provided the basis for the topic guide used in the semi-structured interviews.

These interviews were recorded and subsequently transcribed in full by a third party transcription service. On the basis of the topic guide and themes which emerged during the interviews, a coding index was developed. Each interview transcript was then coded in accordance with this index, which greatly facilitated the subsequent process of thematic exploration of the data. This thematic exploration underpins the structure and findings of the relevant section of this report.

2.2.1.4.2 Pilot Development

After the interim findings of the research were presented by the research team, two joint meetings of the Steering Group and External Advisory Group were held with a view to considering how the results of the research might translate into workable pilots. The importance of this input was heightened as interviews progressed and it became apparent that much of the 'best practice' identified from the literature review was already widely

practiced in the oil and gas industry. Virtually all of the individual-level interventions were well established in the companies interviewed, whilst it was also emphasised that where workplace interventions were not being used, this was generally because it was felt that these practices (particularly those relating to autonomous working practices) were fundamentally incompatible with the need for certification, demonstrable competence and health and safety compliance within the industry. As the scope for providing companies with innovative suggestions fell, so the importance of the SG and EAG's guidance rose.

On the basis of recommendations contained within this report, group discussions at the SG / EAG meetings provided suggestions on how to proceed with the key themes. These are now being taken forward by the Project Manager and the research team with a view to identifying a direction for the second stage of the research: the pilots. The research team will be closely involved in the delivery, evaluation and assessment of these pilots, and will report on the results of this work in Autumn 2011.

3. REVIEW OF RELEVANT LITERATURE – KEY THEMES

The literature review sought to address the following key questions:

- What is the background to skills utilisation? Why are skills and skills utilisation relevant?
- What is skills utilisation? How is it best defined?
- How does skills utilisation work? What are the components of it?
- What is the relevance of skills utilisation to the oil and gas industry? What has already been done? What is it about the industry that makes skills utilisation relevant?

Given the limited amount of time available to conduct an in-depth literature review, the review of secondary evidence (i.e. literature) was used to contextualise and inform the primary evidence to be collected (i.e. interviews), rather than act as a source of conclusive evidence in and of itself. Again, due to time limitations, literature was restricted to English language publications and to publications since 1997 (the point at which an increased policy focus on skills emerged).

3.1 Background: from 'More Skills' to 'Better Use of Skills'

Since the Labour government of Tony Blair came to power in 1997 there has been an increased focus on skills and training as a means of overcoming a range of social and economic problems (Payne, 2008). There has been a continued policy focus on skills and education with recent reports including the Leitch Review of Skills (HM Treasury, 2006), which identified skills as being a major factor in the UK's 'productivity gap' with their international competitors and recommended the development of skills at a general level, including increasing the UK's proportion of university graduates, for example (HM Treasury, 2006: 7).

However, it should be borne in mind that since the Scottish Parliament convened in 1999, Education and Training are devolved policy areas. From 1999 – 2007, a Labour government

at Westminster and a Labour – Liberal Democrat coalition at Holyrood ensured that there were no significant divergences between skills policy at Scottish and UK levels. However, since the election of an SNP government in the 2007 Scottish Parliament elections, there has been a considerable degree of policy divergence from what is commonly referred to as 'the English model', with the SNP choosing not to adopt the targets set out in the final report of the Leitch Review of Skills (HM Treasury, 2006) but rather to establish a distinctly different skills agenda.

> While English (sic) policy makers are focused narrowly on boosting skills supply and matching overseas levels of qualification stocks within the national workforce, their Scottish counterparts are increasingly stressing the need for skills to be used effectively at work and are looking for new ways of linking skills policy to a broader business improvement, innovation and economic development agenda (Payne, 2008: 2).

Skills for Scotland: A Lifelong Learning Skills Strategy (Scottish Government, 2007a) is the Scottish Government's flagship document in relation to skills, setting out its strategy and the rationale for this different approach, highlighting the fact that although Scotland's skills profile is improving more quickly than elsewhere in the UK, the economic growth rate in Scotland still lags behind the rest of the UK (Scottish Government, 2007a). Greater attention is therefore to be paid in Scotland to the way in which skills are used, rather than focussing simply on issues of skills acquisition or skills development. More simply put, although investing in skills is vitally important, it is not enough in and of itself.

> Simply adding more skills to the workforce will not secure the full benefit for our economy unless employers and individuals maximise the benefits that they can derive from skills […] We need to move beyond a focus on meeting the current demand for skills and tackle the issues which underlie and drive demand. We need the skills to facilitate sustainable economic growth but we also need our firms to be ambitious and demanding users of skills (Scottish Government, 2007a: 13).

A key component of this is ensuring 'fit' between the opportunities offered by employers and the skillsets of employees. It is argued by Futureskills Scotland – a Scottish Government agency tasked with the development of the skills culture in Scotland – that there has been too much of an assumption about the need for more generic skills, when in reality what may be needed is a re-evaluation of the specific skills needed by specific employers for specific positions. Again, the emphasis is not about stockpiling of skills, but of very targeted skills development / acquisition.

> We need a wholesale re-evaluation of actual employer demand for skills […] A one-size-fits-all policy is doomed even if applied to a single industry let alone to the whole economy. Skills policy must be centred on building capacity to improve responsiveness to the needs of the individual and of business (Futureskills Scotland, 2007: 20).

Such 'capacity building' must also recognise that the answer to productivity problems does not necessarily lie in ever greater expenditure on new skills. Indeed, the solution to such problems may already be lying dormant right under an employer's nose:

> Organisational performance and productivity is driven by the effective **use** of skills. Many organisations have an untapped resource – the underused skills of their workforce (Scottish Government, 2010).

It is also important to assert that skills constitute a very varied range of attributes, behaviours and competencies. Traditionally, skills have always been strongly linked with education and training (see Bloom et al, 2004) and this has meant that educational attainment or qualifications are often used as a shorthand proxy for skills. However, as Keep et al (2002) argue, education and training only represent one aspect of skills. Futureskills Scotland's Employers Skill Survey (Futureskills Scotland, 2006) and the Scottish Funding Council's report *Learning to Work: Enhancing Employability and Enterprise in Scottish Further and Higher Education* (Scottish Funding Council, 2004) emphasise that employers not only expect that employees should have certain fundamental academic skills, but also 'softer, less definable skills' such as problem-solving and leadership, which are becoming

increasingly important in the workplace (see also Sung and Ashton, 2005: 20). The Scottish Government's Skills Strategy makes it clear that there is no definitive list of these skills, which include but are not limited to:

- Effective time management;
- Planning and organising;
- Effective oral and written communication skills;
- The ability to solve problems;
- Being able to undertake tasks or make submissions at short notice;
- The ability to work with others to achieve common goals;
- The ability to think critically and creatively;
- The ability to learn and to continue learning;
- The ability to take responsibility for professional development; and
- Having the skills needed to manage, or be managed by, others (Scottish Government, 2007a: 8).

Such skills are often not captured by focussing simply upon the qualifications (whether educational or vocational) of workers (Scottish Government, 2007a: 8). On this basis, the Scottish Government's Skills Strategy makes it clear that several clusters of skills are relevant to their vision for Scotland's future:

- Personal and learning skills that enable individuals to become effective lifelong learners;
- Literacy and numeracy;
- The five core skills of communication, numeracy, problem solving, information technology and working with others;
- Employability skills that prepare individuals for employment rather than a specific occupation;
- Essential skills that include all of those above; and
- Vocational skills specific to a particular occupation or sector (Scottish Government, 2007a: 8).

Overall, the context in Scotland is clearly distinct from that elsewhere in the UK. It would not, of course, be correct to suggest that skills acquisition and development are entirely absent from the Scottish Government's approach. Indeed, the converse is true. The difference arises, however, from the differential experience which Scotland has had in relation to investment in skills and the subsequent return (or lack thereof) in terms of economic productivity and growth. Although it can be argued that it is likely that there are other important social, economic and infrastructural factors impeding economic growth in Scotland – such as the country's below-average levels of entrepreneurial activity (e.g. Levie and Hart, 2008: 20) – the Scottish Government has chosen to focus upon the effective utilisation of existing skills as a key lever in its attempts to increase productivity and grow the Scottish economy. Training and development remain crucial in efforts to address deficits in individuals' and workforce skillsets, but rather than focussing upon these deficits, the Scottish Government's approach prioritises the unlocking of latent untapped skills and abilities.

The next section examines the evidence underpinning this move away from skills development and acquisition and towards skills utilisation.

3.2 Why Utilise Skills?

The ultimate goal of national economic policy is higher productivity. Productivity offers the capacity for the economy to grow, higher wages and a higher standard of living. Furthermore, it is increasingly seen as a key indicator of national success. The Government Economics Strategy (Scottish Government 2007b) has the target of ranking in the upper quartile of Organisation for Economic Co-operation and Development (OECD) countries for productivity. Skills represent a key element within productivity (alongside competition, enterprise innovation and investment – see HM Treasury, 2006), with a considerable volume of literature available on the relationship between skills and productivity (Haskel and Hawkes, 2003; Tamkin et al, 2003; Tamkin, 2005 – see UK CES (2008) for an overview). Whilst the traditional understanding of this relationship has been that low levels of productivity can be addressed by investing in skills acquisition and / or development, the

evidence available now suggests that the relationship is not as simple as this (Tamkin, 2005; UK CES, 2008). Rather, it is important to focus on the way that already existing skills are harnessed and used.

As identified above, the skills policy approach in Scotland is distinct from that elsewhere in the UK, focussing more (although not exclusively) upon the demand for skills rather than the supply thereof. This reflects the Scottish experience of the complex relationship between skills and productivity: although productivity in Scotland is lower than it is in England, Scotland has a lower proportion of workers with zero qualifications and a greater proportion of workers with a higher qualification (UK CES, 2008). Although qualifications represent only one possible measure of skills, it is clear that Scotland's higher level of qualifications does not translate into productivity. As such, the Scottish Government's Skills Strategy (Scottish Government, 2007a) aims not simply to increase the level of skills, but rather to generate greater levels of demand for skills among employers and to improve the way in which skills are used in the workplace.

UK CES (2008: 40-43) provide an overview of the benefits which are expected to accrue from adopting practices which allow for the better use of skills. They distinguish between economic outcomes and broader social outcomes, although in reality many of benefits in the latter category relate strongly to the former. They identify the following economic outcomes which are believed to emerge as a result of adopting skills utilisation practices (see UK CES, 2008: 41):

- Profits (see also Tamkin et al, 2008);
- Profit per employee (see also Guest, 2006);
- Sales (again, see Tamkin et al, 2008);
- Productivity (see also Cutcher-Gershenfeled, 1991; Macy and Izume, 1993; Ichniowski et al, 1994; Tamkin et al, 2004);
- Share price (see also Easton and Jarrell, 1994; Tamkin et al, 2004); and
- Earnings (see also OECD, 2001; Tamkin et al, 2004).

In relation to broader social outcomes, it is worth noting that a number of studies (Harley et al, 2007; Sparham and Sung, 2007) report that any improvements in performance are often accompanied by increases in increased workload and stress for employees (UK CES, 2008: 42). Despite this, it is still possible to link a number of positive social outcomes to the implementation of skills utilisation practices (UK CES, 2008: 42):

- Job satisfaction (see also Patterson et al, 1997);
- Staff retention (see also Guest, 2006);
- Higher level of skills (see also Ashton and Sung, 2002); and
- Employee motivation (see also Sparham and Sung, 2007).

With a view to exploring these relationships more explicitly, Sung and Ashton (2005) use data from the 2004 High Performance Working Practices Survey to show that the adoption of practices intended to increase 'smarter working' (including the use of skills utilisation techniques) positively correlates with a number of desirable organisational outcomes. Of the 23 outcomes laid out in Table 3.1 below, 22 demonstrate a significant positive correlated effect with the adoption of these High Performance Working Practices.

Table 3.1: Correlation of HPWP Adoption and Business Outcomes

Outcome	Correlation with HPWP Adoption
Creating employee involvement	.391**
Delivery adequate training and development provision	.371**
Motivating staff	.364**
Managing change	.357**
Providing career opportunities	.348**
Ensuring effective teamwork	.331**
Ensuring job satisfaction among staff	.323**
Ensuring effective communication	.314**
Providing quality leadership	.310**
Maintaining good industrial relations	.282**
Staff commitment	.266**
Creating innovation / new ideas	.257**
Creating organisational flexibility	.248**
Creating support for staff	.243**
Meeting business / organisational goals	.192**
Competitiveness	.170**
% earning more than £35,000	.170**
Minimising employee stress	.153**
Ensuring workforce diversity	.145*
Ensuring work-life balance	.139*
Providing job security	.129*
Staff turnover rate (%)	-.103
% earning less than £12,000	-.108*
** Correlation is significant at the 0.01 level (2-tailed) * Correlation is significant at the 0.05 level (2-tailed)	

Source: Sung and Ashton (2005: 13)

3.3 What is 'Skills Utilisation'?

Although there is a clear emphasis given by the Scottish Government to skills utilisation, there is slightly less clarity as to what the concept actually entails. Given the potential for misunderstanding, a key aim of the review of secondary sources was to clarify the terminology to be used in the primary data collection phase. In this respect, a simple dictionary definition was thought to be insufficient and, in some respects, troublesome. Whilst the component concepts of 'skills' and 'utilisation' are already widely understood, the specific concept to which the label of 'skills utilisation' refers, however, is not widely understood. Indeed, our interviews would subsequently reveal that many interviewees

equated any discussion of skills with the idea of skills acquisition and development (which in some respects may be seen as the antithesis of skills utilisation). In this regard, a number of studies have stressed that current language and terminology for skills utilisation may actually serve to act as a barrier to better understanding of the underlying concepts and activities involved (e.g. Scottish Government, 2008).

Similarly, the concept of productivity is widely understood. The link between skills utilisation and productivity is at the heart of this project and as such, understanding of both concepts is essential. However, whilst a basic definition of output relative to input may not be a challenge, the manifold ways in which this *relationship* can be defined gives rise to a plethora of different productivity measures: Gross Domestic Product, Gross Value Added, Total Factor Productivity, Surplus Value Added, Unit Cost Accounting, Efficiency Ratios and Average Labour Product, to name but a few. As such, it is clear that when companies talk about productivity, there is potential for conflicting or overlapping definitions.

3.3.1 Skills Utilisation – A Working Definition

In an attempting to clarify exactly what is intended by the term 'skills utilisation', key literature sources relating to the concept were reviewed. A number of different proposed definitions were identified. For our purposes, we sought to identify a definition which met a number of key criteria. These were:

- Comprehensibility;
- Clarity;
- Prescriptivity;
- Operability; and
- Real world applicability.

In particular, it was essential to have a definition which would be understood by interviewees. This required a definition which focused upon the practical aspects of skills utilisation, providing clear ideas on how exactly skills could be utilised. A number of definitions were considered with a view to identifying one which would tick these various

boxes. Most satisfied a number of the requirements, but fell short in others. For example, the UK Commission on Employment and Skills (UK CES, 2008) offers the following definition:

> Skills utilisation is about ensuring the most effective application of skills in the workplace to maximise performance through the interplay of a number of key agents (e.g. employers, employees, learning providers and the state) and the use of HR, management and working practices. Effective skills utilisation seeks to match the use of skills to business needs / demands (UKCES, 2008: emphasis ours).

Whilst this is definition provides a clear explanation that the concept relates to more effective application of skills and goes some way towards suggesting ways in which this can be achieved, there is little to suggest how this differs from what is already currently done by companies, many of whom will use HR, management and working practices and who liaise with learning providers and the state. Rather, the definition which was found to provide the greatest degree of clarity and comprehensibility, as well as the most prescriptive, applicable and apparently workable terms of reference, was that offered by the Scottish Government, who define better skills use (i.e. skills utilisation) both in terms of individual skillsets and attributes, and of the ability of workplaces to accommodate these.

> Making better use of skills is about **confident, motivated and relevantly skilled individuals who are aware of the skills they possess and know how to best use them in the workplace**, working in **workplaces that provide meaningful and appropriate encouragement, opportunity and support for employees to use their skills effectively**, in order to increase performance and productivity, improve job satisfaction and employee well-being, and stimulate investment, enterprise and innovation (Scottish Government, 2010; emphasis ours).

It is clear that this definition reinforces the claim made above in relation to the Scottish Government's skills focus: namely, that the emphasis has shifted away from a supply-driven model (i.e. providing ever higher numbers of skills, or of qualifications, a common proxy for skills) towards a model in which the demand for skills is accorded more importance than has traditionally been the case. Of primary importance is the usage and 'fit' of skills: do

employees have the correct skills, can they use these skills in the workplace, and do they have unused or underused skills which might otherwise be tapped to yield greater performance / productivity? Furthermore, by separating the two sections in bold above, the definition provides an analytical framework according to which different skills utilisation practices can be divided: individual practices and workplace practices.

3.3.2 Skills Utilisation Practices

If making better use of skills can be achieved through practices addressing individual and workplace issues, what are these practices and how do they work?

The first point to make in this respect is that despite a wealth of literature on skills acquisition, development and – albeit to a lesser extent – transfer, the comparative novelty of the concept of skills utilisation means that there is relatively little literature available to serve as a guide to skills utilisation. What literature is available in relation to skills utilisation often tends to impose categories or typologies upon different approaches or practices (or combinations thereof). For example, CIPD (2010) identify four key dimensions of organisational working in which interventions can be deployed with a view to increasing performance / productivity. These are the vision of an organisation, its approach to people management, its organisational structures and its approach to learning. However, the use of these labels is rarely consistent across the literature and rather than facilitating a deeper understanding of the concepts and practices at stake, this can ultimately lead to confusion and a lack of clarity of understanding (see Lloyd and Payne, 2008). For example, two recent wide-ranging reviews of approaches to skills utilisation (UK CES, 2008; SQW, 2010) view the relationship between High Performance Working and Learning Transfer in distinctly different ways: whereas UK CES treats the two as entirely separate and internally coherent approaches to skills utilisation, SQW's work understands Learning Transfer to be a component of High Performance Working.

Despite these conflicting findings and often-overlapping tendencies, one virtually omnipresent feature of the literature discussing approaches to skills utilisation is a focus upon High Performance Working (HPW) and High Performance Working Practices (HPWPs), or on practices defined elsewhere as HPWPs. In the absence of any approaches dedicated

specifically to the concept of skills utilisation, HPWPs appear to be the closest proxy measure. Wherever the literature seeks to identify different approaches to skills utilisation, it is typically achieved through reference to one or more practices which are explicitly identified as HPWPs or which are identified in other literature sources as HPWPs.

3.3.2.1 High Performance Working Practices

High Performance Working Practices[5] (HPWPs) place an emphasis on engaged and empowered workforces and high quality goods and services (Tamkin, 2004). Although the label of High Performance Working is a relatively recent addition to the skills literature, its constitutive practices are more established, and may also be referred to in the literature as alternative working practices and flexible working practices *inter alia* (Godard, 2001). Although there is no universally accepted definition of HPW (see Guest, 2000; Lloyd and Payne, 2006), Guest (2006) specifies four key components of any definition of HPW: competence; the opportunity to contribute; employees' motivation; and employees' commitment to their employer. Sung and Ashton (2005) further clarify the nature of HPWPs, stating that:

> High Performance Working Practices, in a nutshell, refer to the careful design of work organisation and practices so that they are systematically linked to the achievement of organisational objectives and performance. *They are work practices that are deliberately introduced in order to improve organisational performance* (Sung and Ashton, 2005: 5; emphasis ours).

They go on to identify some 35 practices which aim to put in place higher performance working. These are distributed among three different categories of practice: high involvement practices; Human Resource practices; and reward and commitment practices (2005: 6-7). High involvement practices aim to improve trust and communication between employers and employees by involving employees more in the organisation (Sung and Ashton, 2005: 6-7; see also De Menezes and Wood, 2006; Kalleberg et al, 2006; Tuckwood, 2006), whilst Human Resource practices are intended to create greater human investment

[5] These may also be referred to as High Performing Work Practices (SQW, 2010) or High Performance Work Practices (Sung and Ashton, 2005). Other variations on this theme may exist.

and skill formation (Sung and Ashton, 2005: 6-7; see also Corbett et al, 2005; Terlaak and King, 2006; Diaye et al, 2008). Commitment practices, on the other hand, aim to establish a sense of stake-holding within a company (Sung and Ashton, 2005: 6-7; see also Kalleberg et al, 2006; Tuckwood, 2006 and Cheng-Hua et al, 2009). The different practices are provided below in Table 3.2.

Table 3.2: High Performance Working Practices

High Employees Involvement Practices	HR Practices	Reward and Commitment Practices
Circulating info. on organisational performance and strategy	Annual appraisal	Performance pay for some employees
Providing all employees with a copy of the Business Plan and targets	Formal feedback on job performance from superiors / employes	Performance pay for all employees
Staff Association	Formal feedback on job performance from customers / clients	Profit-sharing for some employees
Internal staff surveys	Reviewing vacancies in relation to business strategy	Profit-sharing for all employees
Staff suggestion schemes	Formal assessment tools for recruitment (e.g. competencies etc)	Share options for some employees
Quality circles / total quality management	Annual review of employees' training needs	Share options for all employees
Self-managed or self-directed teams	Training to perform multiple jobs	Flexible job descriptions
Cross-function teams	Continuous skills development programme	Flexible working (e.g. hours, locations, job-share)
'Kaizen' – ongoing system improvement	Structured induction training	Job rotation
	Work (re)design for improved performance	Family friendly policies
	Workforce diversity for competitive edge	Non-pay benefits (e.g. free meals, gifts)
	Mentoring	Benefits covering spouse or family members
	QA assurance (e.g. ISO9000)	
	Business Excellence Model or equivalent	

Source: Adapted from Sung and Ashton (2005)

Different benefits tend to accrue from different types of practice (or bundles thereof). Thus, high employee involvement practices are shown by Sung and Ashton (2005: 6) to be linked to higher levels of staff motivation, leadership, communication and teamwork. Human Resource practices, on the other hand, tend to lead to higher organisational performance in the shape of greater productivity and innovation (2005: 6), whilst reward and commitment practices give employees a greater sense of belonging to, identification with and commitment to the organisation (2005: 7).

As such, the use of HPWPs clearly places an expectation not just upon the performance of the individual relative to the workplace, but also of the workplace relative to the individual. Although such issues as motivation may be included, the literature on HPWPs makes it clear that higher performance working is not about giving people ever more skills or expecting them to simply work harder. Such a perspective is overwhelmingly thought to be overly simplistic nowadays. Rather, productivity growth is facilitated by working 'smarter' and ensuring an appropriate and suitable 'fit' between workers and the demands placed upon them in the workplace. This approach can include numerous different approaches, such as the adoption of new production technologies and techniques (e.g. Brynjolfsson and Hitt, 1998). However, as evidenced by Keep et al (2006), the mantra of working smarter is often cited but rarely explained or critically examined. Their view is that the environment in which employees are expected to work plays a crucial role in their ability to perform. However, there remains a critical lack of evidence in relation to the type of levers which can facilitate productivity growth within a skills utilisation context and, as a result, any recognition of the need to change working practices is still rarely translated into action.

> It may seem a statement of the blindingly obvious that having upskilled the workforce it will be essential to ensure that their jobs are redesigned in order to allow their new-found skills to be deployed to maximum productive effect […] Despite much talk about the need to 'work smarter', a realization of what this might mean, and what might be needed to help make it a reality, seems absent (Keep et al, 2006: 543).

As a result, greater thought has been paid in recent years to the organisational context in which skills intervention must occur. Tamkin (2004) uses criteria developed by the CIPD to describe the characteristics of High Performance Work Organisations after implementing HPWPs:

- A vision based on increasing customer value by differentiating an organisation's products and services and moving towards the customisation of its offering to the needs of individual customers;
- Leadership from the top and throughout the organisation to create momentum;
- Decentralised, devolved decision making by those closest to the customer, to constantly renew and improve the offer to customers; development of people capabilities at all levels with emphasis on self-management, team capabilities and project-based activity;
- Support systems and culture which include performance operations and people management processes, aligned to organisational objectives to build trust, enthusiasm and commitment to the direction taken by the organisation; and
- Fair treatment for those who leave the organisation and engagement with the needs of the community outside the organisation – an important component of trust and commitment-based relationships within and outside the organisation.

Despite the fact that the principles of HPWP appear admirable and desirable (although this is not always the case e.g. Kumar, 2000; Armitage and Keeble-Allen, 2007; Sparham and Sung, 2007) and the fact that companies often subscribe to the mantra that 'people are their most valuable resource' (see Udall and Szaroleta, 2010), there is limited evidence of take-up of HPWPs by UK companies, with the principal reasons for this cited as being ignorance of the benefits of HPWPs, unwillingness to change as a result of uncertain benefits or apparently excessive costs, inadequate information on how to adopt HPWPs and impediments such as regulatory frameworks (Philpott, 2007; UK CES, 2008). In addition, it is often the case that HPWPs are implemented without any explicit recognition that anything other than common sense is being followed (Sung and Ashton, 2005). Where companies have consciously turned

towards the implementation of HPWPs, it has often been in response to a specific problem, such as cost reduction (Lloyd, 2000), external market forces (Mason, 1999) or falling profits (Muldrow et al, 2002) (see UK CES, 2008: 32-33).

In addition, there is also a debate within the literature as to how effectively HPWPs can be operationalised within businesses. Tamkin (2004) describes two schools of thought on the potential impact of HPWPs: the 'universalist' perspective, which contends that some of the modified HR practices will always result in performance gains to businesses; and the 'contingency model' perspective, which holds that distinct combinations of HPWP will only work under certain conditions or within certain types of organisation (e.g. Belt and Giles, 2009). For example, Godard (2001) found in an analysis of HPWPs amongst Canadian employees that moderate levels of alternative working practice adoption were positively associated with job satisfaction, but that at higher levels of adoption these associations declined or even became negatively associated, and employees reported that they suffered from stress as a result of the practices. Similarly, Capelli and Neumark (2001) conducted a longitudinal analysis of the impact of HPW in the manufacturing sector, finding that high performance working raises employee compensation in the form of higher labour costs but that the impact on productivity was unclear. As such, the contingency model has attracted increasing support within the literature in recent years, with an increasingly heavy emphasis placed upon the suitability or 'fit' or HPWPs to an organisation's characteristics or situation. Although it will be shown that not all HPWPs are likely to stimulate better use of skills, it is not unreasonable to assume that a considerable number of other HPWPs may do so.

3.3.2.2 From High Performance Working Practices to Skills Utilisation Practices

Although a considerable number of HPWPs has already been identified, it is important to specify that high performance working practices and skills utilisation approaches / practices are not always coterminous. Whilst skills utilisation practices by definition may be thought of as activities which will – in theory – lead to higher performance working, not every HPW will necessarily address issues relevant to skills utilisation. For example, whilst a staff suggestion

scheme may well result in higher performance working, it is difficult to argue that implementing such a scheme will in and of itself result in more confident and relevantly skilled individuals working in workplaces which allow them to use their skills appropriately. By logical extension, it may do so, but it is an indirect relationship compared with that between, for example, the ability to redesign one's job and the ability to make best use of one's skills.

As such, it was important for us to identify not just the wider body of HPWPs, but also to refine this list with a view to making it more relevant to the concept of skills utilisation. We did this by considering the relevance of each of Sung and Ashton's (2005: 6-7) 35 HPW practices in the context of the Scottish Government's definition of skills utilisation. By determining whether or not a practice was likely to have a direct bearing upon better use of employees' skills, we were able to eliminate a number of practices which did not relate directly to skills utilisation. In addition, we were able to add a number of additional practices drawn from other sources (e.g. CIPD, 2010; SQW Consulting, 2010) and from our own academic experiences of workforce skills development.

As a result, the research is able to offer a suggested list of Skills Utilisation Practices (SUPs). To our knowledge, this is the first attempt to operationalise a list of such practices, and as a result, we recognise that our list may be debated or even disputed. Given the lack of prior distinction between Skills Utilisation Practices and High Performance Working Practices, this level of debate is to be welcomed rather than discouraged, and we hope that our first efforts in this respect are further refined by subsequent studies.

By subjecting Sung and Ashton's (2005) HPWPs and suggestions drawn from elsewhere to the scrutiny outlined above, we produced a list of 17 different Skills Utilisation Practices which were assigned to categories based upon the focus of intervention suggested by the Scottish Government's definition of skills utilisation: the individual or the workplace. We recognise that there may be overlap between SUPs across and within the categories. This is particularly true in

the case of the workplace SUPs, many of which are variants upon the theme of more autonomous working.

Table 3.3: Skills Utilisation Practices

Individual Practices	Workplace Practices
Linking strategy with specific skills	Job rotation
Regular review of training needs	Flexible job descriptions
Training to perform multiple jobs	Self-managed or self-directed teams
Liaison with HEIs to ensure graduate suitability	Cross-function teams
Mentoring	"Open Doors" policy
Learning Transfer	Rewards for Innovation
Induction	
Use of Personal Development Plans	

Source: Research Team (2010)

These SUPs served as the basis for our discussions with the companies during the Research Phase. The experience which organisations had of any of these was discussed, whilst areas which had not previously been trialled were discussed in hypothetical terms. This allowed us to better understand the exact nature of companies' prior experiences of skills utilisation, whilst also allowing us to identify the potential for previously untested approaches to be piloted.

3.4 Prerequisites

Work by UK CES (2008) on skills utilisation identifies a number of 'enablers' to skills utilisation: strategic elements which may be thought of as prerequisites to the facilitation of skills utilisation practices. They argue (2008: 24-25) that there are essentially three different over-arching approaches to skills utilisation, each of which has different drivers / components / enablers / prerequisites. These three approaches are differentiated based upon who constitutes the *agent* for delivery and what constitutes the *driver* for delivery, with the three approaches known as the market-driven workplace approach, the state-driven workplace approach, and the holistic approach. Despite the Scottish Government's commitment to the

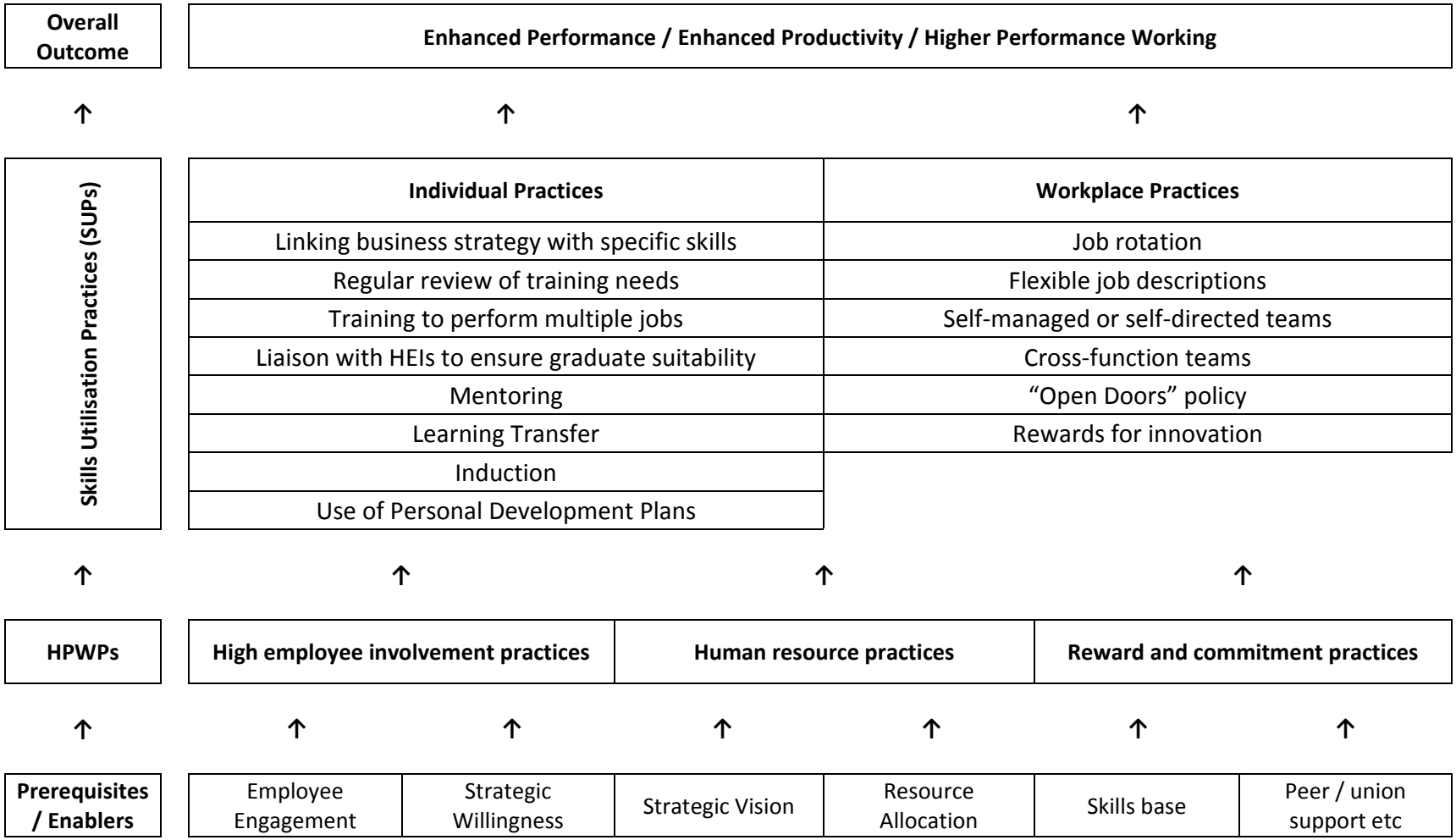
skills utilisation agenda, the approach in the UK as a whole and in the oil and gas industry in particular is the market-driven variant, which tends to rely upon High Performance Working Practices to achieve its ends.[6] Although the authors of the report draw a distinction between the different approaches, the concept of stakeholder buy-in represents a common enabler across all three approaches. In the case of the market-driven workplace, this means that both employer and employee trust and engagement in a skills utilisation intervention is essential to its success, as is the support (tacit or otherwise) of unions and industry bodies.

UK CES (2008) also identifies the theme of leadership and management as a crucial one. Indeed, work elsewhere also argues that leadership and management deficiencies contribute significantly to the UK's 'productivity gap' relative to other industrialised competitors (Futureskills Scotland, 2007; Tamkin and Denvir, 2009). In an analysis of skills utilisation, James (2006) concluded that leadership and management had a greater impact on the success of skills utilisation than any other factor. Futureskills Scotland argues that decisions on markets, products, services, prices and specifications are made by leaders and managers, and the mix of these decisions all impact on the productivity of a business (Futureskills Scotland, 2007: 7). Given the role that leadership and management plays in the strategic direction of organisations, it is worth noting that they call for a critical assessment of the provision and delivery of leadership and management training in Scotland.

Having established all of these parameters, it is possible to provide a conceptual map of the key elements of skills utilisation in this project. This is provided at Figure 3.1. At the base of the flow chart, the enablers are crucial as prerequisites to any successful skills utilisation intervention. Moving up a level, Sung and Ashton's three broad categories of HPWP are subsequently distilled into two groups of SUPs, the ultimate goal of which is the more effective use of skills and higher performance working performance.

[6] UK CES (2008: 25) also identifies Learning Transfer as a component of the market-driven workplace approach. However, as explained above, we include this within the over-arching label of High Performance Working and therefore do not discuss it again here.

Figure 3.1: Conceptual Structure of Enablers, HPWPs and SUPs



Source: Research Team (2010)

3.6 Measuring the Impact of Skills Utilisation

Leading researchers in the field (e.g. Keep et al, 2006) have stressed that the drive towards skills utilisation must be grounded in a measured approach. One problem of the old skills supply-oriented approach was that it lacked the rigour of careful evaluation and as a result, the emphasis now is on proving that skills utilisation offers measurable benefits. Typically, the measurement of any type of intervention is achieved by establishing a baseline reading of one or more indicators, and monitoring subsequent achievements relative to this baseline over a given period of time. However, this proves problematic within the context of determining the impact of skills utilisation upon productivity for two principal reasons. Firstly, there is an issue in terms of a lack of agreement as to the definition of the core terms of 'skills utilisation' and 'productivity', and secondly, difficulties subsequently arise in relation to measuring these concepts once a definition has been agreed upon.

Firstly, as identified above, there is a significant level of debate within the skills utilisation literature as to what is actually constituted by skills utilisation. To overcome this issue, this study opts for a specific definition (Scottish Government, 2010) which is intended to facilitate understanding and scrutiny. However, although breaking this definition into its component parts as per the Scottish Government's definition would helpful in facilitating interviewees' understanding of the concept and in identifying areas of companies' work to be scrutinised, the terms in which the concept is defined (motivation, confidence, relevance of skills, encouragement, support, guidance etc.) do not incorporate tangible or readily observable indicators.

Secondly, there is a similar set of issues in relation to the concept of productivity. In essence, productivity can be simply described as the labour ratio of output to input. However, whilst the *concept* of productivity is relatively easily explained, the way in which input and output are defined and the criteria for capturing data to measure these is not standardised across studies (Dannyame, 1999). As such, comparative analyses of productivity may be flawed (Reynolds *et al*, 2005), with workforce performance dependent upon the measures used (Mayhew and Neely, 2006). As outlined earlier, such measures can include GDP, GVA, surplus value added, unit cost accounting, efficiency ratios, average labour product or total factor productivity, to name but a few (Reynolds et al, 2005).

These issues are borne out by the findings of the literature reviewed. Despite a large amount of research to determine causality between measures of productivity and skills, the results have failed to produce a robust statistical correlation, which suggests that the relationship between skills and productivity remains complex, further eroding any residual belief in the notion that more skills automatically equates to more productivity (UK CES, 2008). For example, For example, Abdel-Wahab et al (2008) investigated the relationship between skills and productivity in the construction sector and found that there was no evidence that higher skill levels automatically improve productivity. However, wider business improvements were identified as notable 'externalities' as a result of the investment in skills. Similarly, Brynjolfsson and Hitt (1998) investigated the 'productivity paradox', whereby developments in IT have not apparently led to increased productivity, and concluded that there is a need to measure firm-level productivity as effects of skills interventions vary enormously depending on the particular organisational context (Brynjolfsson and Hitt, 1998). This is just one of a number of studies which have attempted to model causal relationships using statistical analysis. Despite these best efforts, the conclusion emanating from every such study is that this type of approach is fraught with difficulty and may lead to paradoxical results.

Furthermore, where attempts to establish a relationship between skills utilisation and productivity do use a statistical approach, there are considerable challenges inherent in attempting to control for all of the possible factors involved in such a multivariate environment. For example, the Scottish Government's Skills Utilisation Leadership Group has identified a wide range of indicators which might be necessary to consider:

- Skills level;
- Rank order of skills;
- Improvement of skills;
- Use of skills;
- How an individual's ranked skills matched their allocated tasks;
- Levels of absenteeism;

- Production time;
- Financial data – productivity;
- Economic growth quicker than competitors;
- Revenue;
- Profit per head;
- Costs per head (service provision);
- Innovation and use of technology;
- Job satisfaction;
- Employment levels;
- Employee – employer relations; and
- Engagement versus productivity (Skills Utilisation Leadership Group, 2008).

A number of authors have tried to establish a definitive list of measures, including Tamkin (2005), Dannyame (1999), and Tamkin et al (2008). In Dannyame's report, different 'intangible assets' measurement applications were analyzed, such as Skandia Navigator ("a pioneer in intellectual capital management"), the Intellectual Capital (IC) Index (combines "value drivers in a distinction tree" – see Skyrme, 1998), and the Intangible Assets Monitor (a measuring method and presentation tool which can display a number of relevant indicators in a simple fashion – see Sveiby, 1997). In addition, the Human Capital Index, and Balanced Scorecard were mentioned as other popular models of measuring (Strassman, 2005). However, these approaches have often fallen short. For example, the failure to include non-formal training and mentoring as variables in regression analysis (which is often overlooked in econometric approaches) means that the accuracy and comprehensiveness of many studies are highly questionable, with results skewed in favour of short-term efficiency rather than long-term product quality improvements (Mayhew and Neely, 2006).

As a result of all of these difficulties in trying to obtain reliable micro-level data, much of the research is based upon inference or qualitative data rather than statistical causality. For example, Patton et al (2000) attempted to develop a hybrid approach of qualitative and quantitative variables for measuring the impact (or lack thereof) of training interventions on SMEs. The researchers devised a framework adapted from other well-established models

and included four main units of analysis: the general business environment, the association between the trainer and the trainee, the interaction process that takes place and the make-up of individual parties. They found that trying to measure the impact of training on productivity in a quantitative manner is likely to fail or not be generalisable to the wider population of SMEs and that "perhaps it is more appropriate to identify positive outcomes from training and learning interventions that are advantageous to the enterprise in the widest sense, rather than seeking to determine causal relationships" (Patton et al, 2000: 24). Although our focus is broader than simply the effects of training, the central theme of Patton et al's work – that quantitative indicators alone are insufficient to demonstrate the impact of training interventions – can be assumed to hold true for skills interventions more broadly defined. However, even qualitative studies depend upon agreed terms of reference, most notably a shared understanding of the key concepts. For example, certain studies have referred to the problems arising as a result of the government's perspective of what constitutes productivity not matching the perspective of managers (see Keep et al, 2006; Mayhew and Neely, 2006).

As a result, it is clear that any attempt to measure skill utilisation and productivity needs to take into account the specific circumstances of the different partners involved in the pilots, and will likely require an emphasis upon qualitative data, although this should not absolutely preclude the use of quantitative data. Performance assessments based on highly complex data monitoring or analytic techniques are unlikely to be easy to incorporate into the day-to-day running of a business, and are therefore unsuitable. Reflecting this difficulty with productivity measurement, emphasis has focused on a wider and more straightforward definition of *performance* rather than *productivity*, and an attempt to identify appropriate metrics.

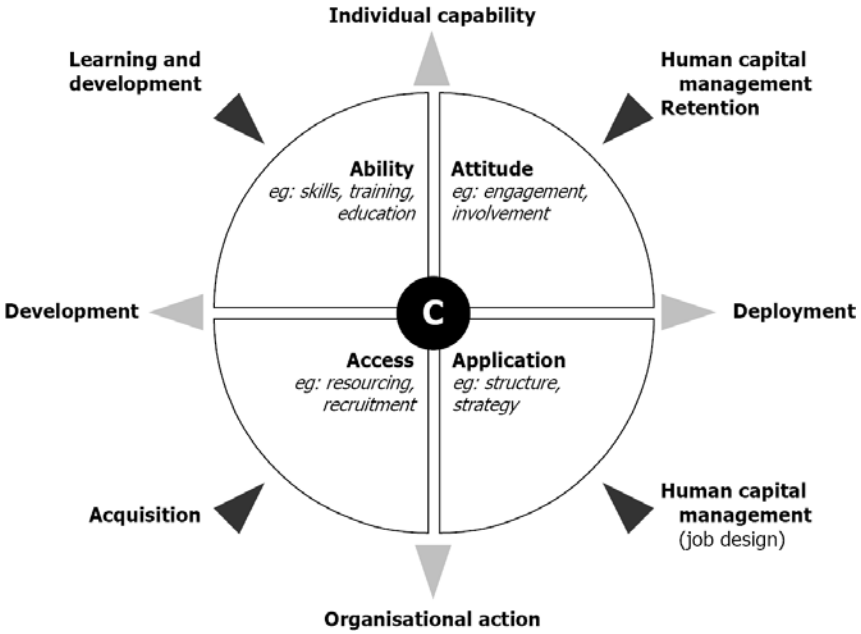
Business performance measures based on Kaplan and Norton's Balanced Scorecard approach have become popular mechanisms for assessing firm performance (Neely et al, 2000). However as the balanced scorecard does not provide clear guidelines for exactly what should be used to measure growth and performance, it is necessary to identify what business performance measures should be used.

> Numerous managers are currently re-engineering the measurement systems their organisations are using. Few have systematic process for doing so. Even fewer appear to be actively considering the issues associated with the implementation, use and ongoing maintenance of the measurement systems they are currently designing […] Organizations often find themselves short of people who have the skills required to analyse and interpret the data. Over time, their measurement systems become less and less valuable, as they become more and more complex (Neely et al, 2000: 1142).

Possibly the most useful approach from our perspective is that of Tamkin (2005), who has devised a range of indicators which can be used together to evaluate the impact of skills on business performance. She highlights the fact that traditionally, studies ostensibly focussing upon skills have in reality focussed upon qualifications, which are – at best – a rough proxy for skills. As outlined above, this is due to the fact that skills are innately difficult to a) measure in any positivist quantitative sense, and, as an extension of this, b) monitor periodically with a view to testing hypotheses on the impact of increasing or decreasing skills levels. Qualifications, on the other hand, typically represent a relatively standardised barometer (at least within a single nation) which allows for cross-comparative studies to be conducted. In addition, they also represent a more regimented and sequential approach to measuring skills. As identified above though, a key issue emerges here in that many technical skills may be acquired informally, without necessarily involving formal qualifications. As such, a number of studies have moved away from formal qualifications to include less formal measures such as workforce development (e.g. Keep et al, 2002). Tamkin endorses this approach, and focuses upon the bigger picture of 'workforce capability', which may be thought of as the sum total of employees' capabilities: "the effort they make, the new products or services they create or the quality of what they do" (Tamkin, 2005: 9). Deconstructing this concept of workforce capability, Tamkin argues that any consideration of skills' contribution to business performance can only take place within a wider framework, of which individual capability is only one component. She identifies four key dimensions of capability to consider, which may be placed along two axes: from individual skill to organisational action on one axis, and from development of capability to deployment of capability on the other (see Figure 3.2). By plotting these two axes, four quadrants

emerge, each of which relates to the policies put in place to encourage greater capability: attitude; application; access; and ability.

Figure 3.2: The 4A Model of Capability



Source: Tamkin (2005)

The ability quadrant of the 4A Model of Capability covers those policies which aim to improve the *development* of *individual* capabilities. As such, this encompasses efforts to ensure that individuals have the relevant skills through such initiatives as ongoing training programmes or Personal Development Plans (Tamkin, 2005: 11). The attitude quadrant, on the other hand, covers policies which relate to the *deployment* of *individual* capabilities. This includes policies which can enhance motivation and engagement, such as performance management systems or reward-based working (Tamkin, 2005: 12). The access quadrant focuses on the *development* of *organisational* capability. This quadrant covers policies which determine a company's recruitment or selection policy, and whether they choose to develop their own capability (e.g. using internal promotion) or to import capabilities from outside (e.g. by headhunting or 'poaching' employees) (Tamkin, 2005: 11). Finally, the application quadrant covers policies relating to the *deployment* of *organisational* capabilities. This covers the opportunities provided at an organisational level for employees to apply their skills and enthusiasm in the workplace, and comprises such activities as job design, greater employee autonomy and rewards for innovation (Tamkin, 2005: 12).

Tamkin's 4A model of capability provides a useful heuristic framework not only for understanding the different components of workforce capability, but also for assessing different aspects of interventions. To this end, Tamkin (2005) identifies a number of indicators which go some way towards measuring performance in the different quadrants. The different indicators associated with each quadrant are provided in Table 3.3.

Table 3.3: 4A Model – Quantitative Indicators (by Quadrant)

Ability	Attitude
Proportion of workforce receiving training	Proportion of lay-offs
Total number of training days	Absenteeism
Training expenditure	Bradford measure of short-term absence
Spend per employee	Turnover
Proportion of employees who are graduates	Proportion of gain sharing
Proportion of employees who are L2 qualified	Proportion of pay that is variable
Number of days of management training	Proportion receiving performance pay
Expenditure on management training	Proportion receiving appraisals
Spend per manager	Frequency of 1:1s
Proportion of employees with a PDP	Attitudes
Proficiency	
Spend on accredited training	

Access	Application
Proportion promoted from within	No. of computers
% subject to test on recruitment	ICT spend
% of new recruits experienced	Proportion of decisions subject to consultation
% of interviews conducted by skilled interviewers	Proportion involved in business improvement
% of interviews using criterion-based interviewing	Proportion of workforce multi-skilled
	Autonomy

Source: Tamkin (2005: 14-22)

By obtaining a baseline reading in the relevant quadrants, it is possible to track the development of capability within a workforce and / or workplace. As identified above, establishing a reliable causative relationship between skills interventions and changes in these areas remains extremely difficult, but we will use this analytic framework as a

departure point for the evaluation of any proposed interventions which form part of the pilot stage of the project. The feasibility of these indicators and the use of other potential indicators will be discussed and developed alongside pilot participants in order to ensure that any intervention and subsequent evaluation is relevant, appropriate and meaningful. Any quantitative indicators adopted will be triangulated using a classic Kirkpatrick style evaluation to allow for greater understanding of the impact of different practices.

3.6 The Relevance of Skills Utilisation to the Oil and Gas Industry

Futureskills Scotland (2009) identify that the product market that a firm operates in has an impact on the skill utilisation of employees, showing that in a market which demands a standardised product and competition on the basis of price (known as a 'cost-centred' approach), the emphasis of efficiency is on cost rather than employee development. As a result, the demand for skills utilisation tends to be low. On the other hand, where employers produce products which are differentiated on the basis of quality (known as a 'product-centred' approach), the importance of employees' skills is typically seen as a key component of a company's strategy. As a result, the effective use of people's skills tends to be much higher.

> [In] the strategy-skills utilisation model, [...] employers' competitive strategies are not seen as fixed, but shaped by the relationships and constraints facing employers in their product markets rather than stemming solely from their own rational decision-making processes or path dependency. The relationships and constraints change over time and comprise many different factors which can bring about change in employers' competitive strategies (Futureskills Scotland. 2009: 10).

The report highlights the work of Ashton and Sung (2006) who developed a 'business strategy and skills utilisation model' which explains the variable nature of the relationship between employers' product market or competitive strategies and the skills of the labour force. There is now considerable evidence to suggest that skills utilisation has greater relevance for – and a more significant impact in – certain organisations with certain characteristics. The research which exists suggests that a number of factors determine the

degree to which skills utilisation is relevant to an organisation. On the basis of the literature reviewed, the following factors appear crucial:

- The technical / technological nature of the product market (highly technical product markets require greater utilisation of skills by employees) (UK CES, 2008);
- Companies classed as belonging to the 'manufacturing' sector (as contrasted with those which belong to the financial services sector, the business service sector and the wholesale / retail sector) are more likely to adopt skills utilisation practices which allow for more flexible use of skills (Sung and Ashton, 2005; Combs et al, 2006; UK CES, 2008);
- Exposure to competition on an international scale also increases the likelihood of adopting HPWPs (Boxall and Purcell, 2000);
- Larger firms are more likely to adopt HPWPs, although SMEs are also likely to benefit from their adoption (Ashton and Sung, 2002; Way, 2002; Edwards, 2007);
- Inter-personal relations (organisations who focus upon the role of employees as opposed to the tasks carried out by employees make greater use of employees' skills); and
- Product market: certain industry sectors dictate the two elements of product market strategy outlined above e.g. manufacturing companies producing products for a specific market are more likely to rely upon standardised products made in an assembly line manner, whilst those made on the basis of innovation and differentiation by quality are more likely to adopt and benefit from HPWPs (UK CES, 2008).

It is perhaps misleading to think of the oil and gas industry as a single coherent industry. The skills required vary enormously in relation to the different stages of the industry cycle, from exploration through production and refining. Despite the diversity of roles involved at each of these stages, each stage nevertheless incorporates a range of skills requirements, from semi-skilled new entrants to the industry up to long-term industry members involved in extremely specialised and technical roles. In addition, the strong focus upon health and safety within the industry means that a statutory minimum level of quality will always be in

place, ensuring that competition cannot take place purely on the basis of price. Conformity with such statutory frameworks also places demands upon individual employees, ensuring that the skills required to achieve this must be acquired, developed and utilised. In addition, much of the work conducted in the industry is similar to that found in the manufacturing sector: labour-intensive repetitive tasks and highly specialised engineering functions, for example.

3.6.1 Product Market Details

The oil and gas sector contributes significantly to the economy of the North East of Scotland. According to a recent report by Aberdeen City and Shire Economic Forum (ACSEF), around 40,000 people are directly employed in Aberdeen City and Shire's energy sector (ACSEF, 2009). This makes up a significant percentage of the total UK oil and gas workforce, which is around 450,000 (UK Oil and Gas, 2009). The associated spending power of these employees has allowed the North East to maintain one of the highest rates of GDP per head of population in the UK. The recent economic crisis has, however, brought about challenges for all businesses and the oil and gas industry has not been exempt from this. Challenges of improving productivity by investing in new technologies and improving business processes are well documented. However, it is also critical that the oil and gas sector must invest in workforce development initiatives to improve productivity and business performance. To illustrate this dilemma, the 10th Aberdeen and Grampian Chamber of Commerce (AGCC) Oil and Gas Survey, published in February 2009, indicated that business confidence was lower amongst operators. The report indicates that the majority of operators intend to reduce total employment in 2009 although the importance of recruiting and retaining skilled workers was still seen as an important factor in maintaining business success (AGCC, 2009). Given the reduction in employment but ongoing demand for productivity and performance, the role played by the effective use of existing skills becomes more prominent.

Furthermore, the UK Oil and Gas Activity Survey highlights that despite the global financial downturn, the number of potential new oil field developments increased by 17% over the previous year. However, total investment in UK continental shelf production UK continental shelf production fell by 6%, with this trend expected to continue into 2010 / 11 (UK Oil and Gas, 2010: 11). As such, it is clear that the tension between a contracting industry but

increased potential profitability will have considerable implications for companies trying to obtain greater levels of performance from a static (or shrinking) workforce.

Taking account of this diversity, the research was intended to be as inclusive as possible in its outlook from the outset. It was therefore important for the research team to investigate the structure of the industry and the different sectors which would need to be included if the research was to be as comprehensive as possible. This was achieved both through the initial consultation interviews and the literature review. Our work in this regard established a need to pay heed to two important company characteristics when structuring the primary data collection process: company scale and company sector. Focussing on these is not to deny that other approaches to industry segmentation are possible, but these were the most prominent axes along which companies were found to differ.

3.6.1.1 Company Scale

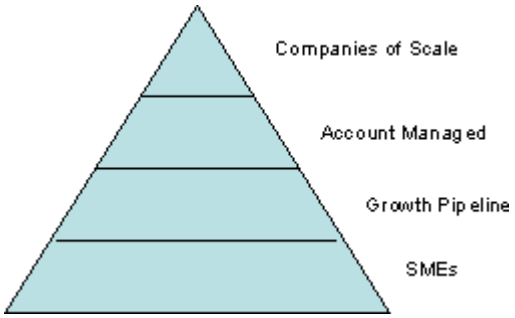
Early consultation interviews made it clear that the oil and gas industry contains an extremely diverse range of company sizes. Although the literature and media often tend to focus on a relatively small number of 'super majors' (i.e. companies of scale operating internationally in both exploration and production e.g. Shell, BP), it was emphasised during early consultation interviews that this group of companies is extremely influential only inasmuch as they depend upon a far larger base of smaller companies to act as contractors or duty-holders. Again, this larger group contains a great deal of diversity of scale. Scottish Enterprise describes the industry using a pyramidal structure. Thus, the most numerous group of companies is that of SMEs (typically composed of organisations with fewer than 50 employees), although this category of company also contains a wide range of companies (e.g. micro-businesses with fewer than 10 employees).

Above this level is the 'growth pipeline' group of companies. These companies tend to be larger SMEs (typically 50-250 employees) whose size and performance mark them out as potential recipients of account management assistance from Scottish Enterprise.

Above this level are Scottish Enterprise's account-managed companies. These high-growth companies receive support at a senior management level with a view to ensuring that they

sustain their growth to the point of becoming companies of scale. Such support usually consists of an SE Account Manager working through key issues with the company in question, assisting them in developing and implementing business plans. Finally, companies of scale are those companies who are international players in the industry and have significant local importance across all aspect of the industry. Scottish Enterprise's model of the industry is provided below in Figure 3.3.

Figure 3.3: Scottish Enterprise Model of Industry Scale



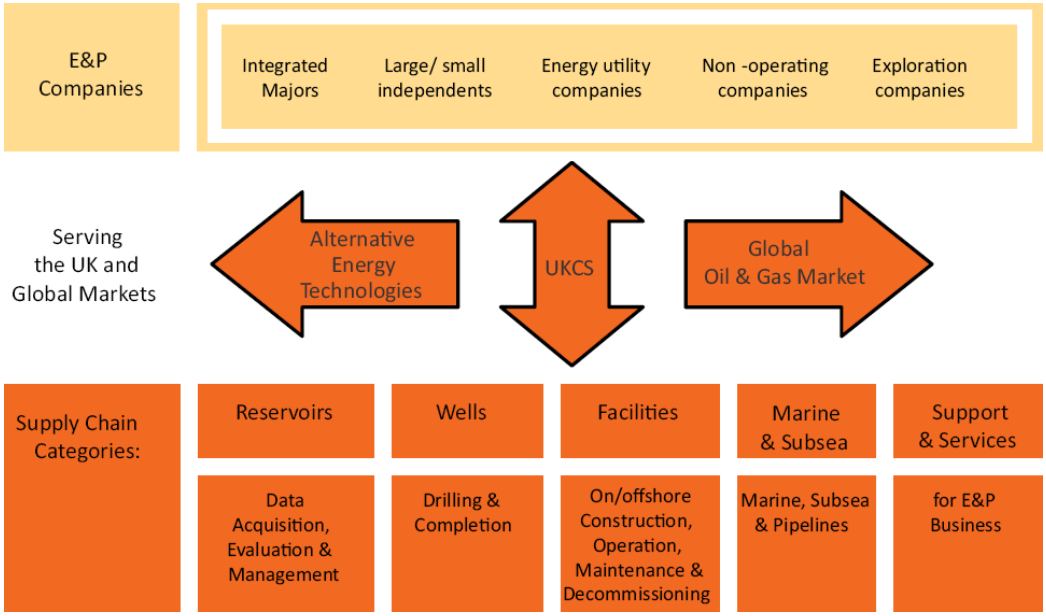
Source: Research Team (2010)

The pyramidal model of the industry provides a simple heuristic device, and is instructive in outlining where public sector support for companies is currently concentrated. It also reinforces the view that the majors dominate the industry. However, whilst the 'super majors' are at the apex of the hierarchy, it should be recognised that this relatively small group of companies is supported by a great number of smaller companies which make up the contractors, duty holders and supply chain.

3.6.1.2 Company Sector

Distinguishing between contractors, duty holders and supply chain companies raises the second key distinction between companies in the industry: operational sector. The UK Oil and Gas Economic Report (2009) provides a visual outline of the different sectors, illustrating that each level of the industry comprise a diverse set of organisations.

Table 3.4: Sectoral Representation of the Oil and Gas Industry



Source: UK Oil and Gas (2009)

On this basis, it can be seen that exploration and production within the UK broadly fall into one of the following categories:

- Integrated majors;
- Independent companies;
- Energy utility companies;
- Non-operating companies; and
- Exploration companies.

Integrated majors are those companies who operate across the whole value chain from exploration and production through to refining and marketing. Independent companies, on the other hand, focus predominantly on exploration and production. Energy utility companies may have an active exploration and production arm, whilst non-operating companies are those organisations with an equity share in assets operated by other exploration and production companies. A final category – exploration companies – is reserved for those companies which concentrate solely on exploring for new reserves (UK Oil and Gas, 2009).

However, underlying this exploration and production sector is the oil and gas supply chain, which can also be segmented into a diverse set of categories:

- Reservoirs;
- Wells;
- Facilities;
- Marine and subsea; and
- Support and services to the E&P sector.

The Reservoirs category covers such activities as seismic / data acquisition through to reservoir management. Wells covers drilling and well completions, whilst Facilities covers design, procurement, construction, operation, maintenance and decommissioning. The Marine and Subsea sector of the supply chain encompasses marine / subsea engineering, diving, marine logistics and marine / subsea construction and operations. Support and Services ranges from direct support such as asset management, catering and logistics through to HS&E services, venture capital, corporate finance and banking, legal and insurance services (UK Oil and Gas, 2009).

It is therefore clear that significant differences exist not only between but also within the exploration / production and supply chain sectors. The initial consultation interviews supported our understanding that a truly representative picture of every possible sector within the supply chain would not be possible using the resources available to the project. Whilst a representative cross section of the industry would have been desirable, the complexity revealed by the UK Oil and Gas model (see also OPITO, 2001, for a further complex breakdown of the supply chain) means that this would simply not be practicable. As a result, the Stage One interviews suggested simply trying to capture the views of companies from the exploration and production sector on the one hand, and from the supply chain on the other. Any attempt to further segment either of these would result in the deliberate exclusion of the segments not represented in the segmentation model.

4. CONSULTATION INTERVIEWS – KEY FINDINGS

The initial consultation interviews yielded much valuable contextual information on the role of skills and skills utilisation in the oil and gas industry. It is worth noting some of the key points here, prior to moving on to a fuller account of the in-depth interviews conducted as part of the Stage One research process. Findings are discussed thematically.

4.1 Product Market

Interviewees made it clear that the market in which they operate had changed significantly over the last decade. In particular, they noted that the number of operators had grown considerably, with many well-established companies from other oil-producing regions (e.g. TAQA Bratani) expanding their operations into the North Sea sector. Given this heightened level of competition, the need for relevant skills and higher levels of performance / productivity were seen as crucial success factors both for the established North Sea operators and the new entrants to the market.

It was noted that this emergence of new players in the industry had been facilitated by the departure of some super-majors into other, more lucrative fields. The 'vacuum' in the North Sea sector which emerged as a result of their departure or declining interest allowed for a number of new entrants to the market or for smaller market actors to take on the role of duty-holders (e.g. Talisman buying up former BP assets). Again, the changes in the market meant that transferable skills and the ability to work flexibly were extremely valuable attributes within the workforce, particularly among the smaller companies who are becoming more active in the marginal fields and who are perceived to be disproportionately reliant upon flexibility and multi-skilling. Consultees stated that in companies of fewer than 15 people, employees have an in-depth understanding of each other's skills. However, once they start to grow, the bureaucracy and controls start creeping in, making the transition from a very small to a medium-sized company a challenging one. At times like this, standardised industry systems for tracking people's skills would be of assistance in moving from an informal skills culture to a more codified one.

Although there was some recognition that the emerging renewables industry may provide competition for labour in years to come, the organisations we consulted argued that the nascent renewables market was not yet commercially viable to the extent that the oil and gas industry is. As such, whilst many of the larger operators in the oil and gas industry (e.g. BP and Shell) have made moves towards including renewables in their portfolio, the demand for new skills is not yet of a level which would convince existing oil and gas employees that diversifying their skillset is a worthwhile exercise. Indeed, even when the renewables market does become more competitive, it was thought that many of the skills pertinent to working in the oil and gas industry would be directly transferable to the new industry. Despite this, the transition would not necessarily be a smooth one, and efforts may be required in terms of facilitating the move. Other important imminent skills transfer challenges were identified at an OPITO workshop in late 2009, including a need for support with the skills required to deal with increased decommissioning and carbon capture / storage schemes over the coming decade.

The trend towards greater involvement of smaller companies in the North Sea sector was also thought to have led to interesting patterns in the industry. As would be expected, there was far less homogeneity among firms than was previously the case when the market was dominated by the broadly-based super-majors. A number of the organisations we consulted explained that very often, specialised companies were founded as 'offshoot' companies by employees who had left a larger company as a result of disillusionment with their working practices. However, the move towards smaller company size and greater specialisation across the North Sea sector meant that many companies were far more reliant upon contract labourers at peak times than was previously the case. Despite this reliance on contract labour, there was very often a degree of dissatisfaction with the labour available. Although there exists a strong focus upon safety and technical competence, it was often felt by consultees that other 'softer' skills were disregarded, with employees only able to pick them up 'on the side', as it were. Whereas the regulatory framework governing the industry had led to industry standards in health and safety, the same was not true of skills although some specific qualifications were recognised across companies. This was compounded by a perceived lack of analysis of career planning and progression within the industry, meaning that future skills requirements were only rarely considered. Career plans were typically

thought to be restricted to senior executives, although it was recognised by many consultees that there were often significant differences in approach towards career planning between organisations, ranging from very hands-on to very *laissez-faire*. Although the necessity of flexibility in small firms means that they often have a better idea of their employees' skills, formal career development initiatives were commonly thought to be the preserve of larger, more hierarchical companies with dedicated HR departments. However, it was widely felt by consultees that training needs and corporate business plans were rarely linked and that the project-based nature of the industry means that short-termism tends to dominate, even where formal career planning is in place. To this end, some consultees mentioned the idea of extending the industry-wide Vantage Card scheme to incorporate information about an individual's skillset.

Despite this apparent lack of widespread career planning, it is worth stating that most consultees did not generally feel that there was any real evidence of critical skills shortages among the existing workforce. The North East was seen as the world leader in terms of skills in the oil and gas sector (especially sub-sea engineering) and exports these skills all over the world. However, in relation to graduates, some concerns were expressed. Consultees stated that some employers complain about graduates' lack of readiness to work in the sector (particularly in terms of communications skills, which are seen as getting worse as time goes by), although others equally complain that it is unfair to place graduates into very narrow roles which don't utilise their entire range of skills. In both cases, it was felt that the solution was the building of closer links with HEIs / FEIs and industry so that education providers ensure that skills match business needs.

There was also one notable recurrent exception to the idea that no significant skills shortages exist. Leadership and management skills were seen as being in extremely short supply within the industry. There was a perception that many employees who excelled in a technical sense had been promoted to managerial positions as a result of two key pressures. Firstly, offering promotion (and the associated inflation of salary and job title) represented one means of retaining talented employees in what is an extremely competitive environment. Secondly, the aforementioned lack of focus on 'softer' skills meant that technical aptitude was often the only means available to companies to distinguish between

employees when a gap at supervisory / managerial level became available. However, this trend has delivered a phenomenon of 'job title inflation', whereby increasingly complex job titles have been used as a means of retaining staff. Whilst this may work well on a company-by-company basis in the short-term, many of the organisations we consulted felt that this simply led to even greater inconsistency between jobs and skillsets. Given the primacy of leadership and management skills as an enabler of skills utilisation, the lack of fundamental skills in this area is worth noting.

One particular consultee also identified a number of job roles in which they felt shortages were beginning to emerge, and would worsen as time went by if remedial action was not take. Specifically, they forecast a huge skills shortage of design engineers, welders, geo-scientists, survey technicians and instrument technicians. Although it is currently possible to solve skills shortages by drawing in migrant workers from the new EU Member States, gradual wage equalisation across the EU meant that coming to work in Scotland would become less financially attractive as time goes by.

4.2 Current Issues with Skills Utilisation

Consultees also provided information upon the current state of play in the oil and gas industry in relation to skills utilisation. It was generally felt that although Scotland as a whole performs well academically and in terms of skills investment, effective utilisation of people's skills in the workplace was not common. Whilst academic performance and skills investment were important, there was an increasing realisation that these in and of themselves did not contribute to better performance and productivity. As Scotland's Skills Strategy highlights, ineffective utilisation of skills means that investment in training and qualifications will not automatically result in better workplace performance: rather, the focus must fall increasingly upon working with existing skills more intelligently with a view to getting more out of them. However, some consultees mentioned that at present, many organisations do not equate better skills use – or even skills more generally – with productivity. Often, the emphasis remains upon simply working harder as opposed to considering ways in which more effective use of skills would allow employees to 'work smarter'. In some circumstances, skills are seen as a statutory duty and not as an opportunity to increase performance or productivity. Where skills are seen to be useful, this

is usually as a result of specific technical workplace requirements, such as being trained to use a new piece of equipment or machinery. However, the constant march of technological progress means that it is very difficult to provide 'future-proof' skillsets. The lack of technological standardisation across the industry also means that such skills are not necessarily transferable (although in some cases, they may be). This lack of standardisation also extends to standards and competencies, for which there is no agreed framework (other than in the case of health and safety, for which there are well-established and industry-standardised approaches). Particularly in regard to this type of training, the point was made by a number of consultees that training is rarely evaluated to identify the benefits delivered. As such, whilst equipment-specific training should always be put into practice in the workplace, the same is not true for 'softer' skills or technical skills which are not used on a daily basis. Too often, the benefits of training in these areas are lost due to there being no formal mechanism for learning transfer (i.e. ensuring that what has been learned is subsequently incorporated into the employee's work). Consultees felt that managers and supervisors were often unaware of the content of specific courses on which their employees were sent. Combined with a general lack of debriefing opportunities following training, this meant that opportunities to ensure smarter working were lost.

Another extremely relevant issue identified was the 'industry cycle paradox' in relation to training or re-evaluation of skillsets. According to the consultees who mentioned this paradox, the cyclical state of the industry is either so healthy that there is insufficient time to devote to training or revisiting of working practices, or so depressed that there is insufficient capital available to finance training or revisiting of working practices. This double-edged sword of time and money means that workforce development or skills utilisation is often seen as a cost rather than a benefit. As such, it was thought by consultees to represent a significant barrier to companies considering any change to the *status quo* of skills use. Further barriers were also identified. Again, the short-termism inherent in the industry was seen as problematic, in that companies often prefer to simply buy in the required skillsets in the form of a 'ready-made' solution (i.e. consultants or specialised sub-contractors) rather than invest time and money in re-skilling their existing workforce or (where no competency framework exists) attempting to identify relevant latent skills among the existing workforce. The short-term nature of much of the work in the industry was also

thought by consultees to have implications for employee motivation. Whilst reward structures did aim to motivate employees through financial rewards, some consultees believed that other non-financial reward incentives (e.g. fulfilment of potential, greater responsibility etc.) were often overlooked.

Enablers of skills utilisation in the oil and gas industry were also discussed with consultees. In addition to the enablers specified in the literature review (i.e. stakeholder buy-in, and leadership and management) a number of other factors were seen as important. Firstly, it was seen as vital to educate organisations about the potential benefits of better skills utilisation techniques and approaches. In particular, it was important to show that adopting certain approaches was likely to yield benefits in the form of productivity, enhanced performance, employee wellbeing and engagement etc. At present, too few organisations were thought to be aware of the potential benefits of many of these approaches. As a result, it was hugely important to target the leaders and managers of the oil and gas industry to ensure that they take a proactive approach to the implementation of skills utilisation practices.

Following from this was the recommendation that greater evidence would serve as a very strong indicator of the value of skills utilisation. Currently, there is very little evidence linking these practices with beneficial outcomes in the oil and gas industry. As such, far greater documentation and evaluation of existing good practice was required. It was thought by some consultees that this could in part be achieved by making any funding for training or workforce development conditional on evaluation, including a particular focus upon the impact of training (and subsequent efforts to ensure learning transfer). Ensuring that companies assess the impact of their training upon performance and / or productivity would not only add intrinsic value to the process of training, but would also build up a valuable knowledge base upon what works, how, and under what circumstances.

More flexible and imaginative reward packages were also thought to be potentially effective enablers of skills utilisation at the individual level. By offering non-financial rewards, it was felt by some consultees that fresh impetus could be given to the use of skills, whilst the rewarding of innovative practice (as opposed to simple productivity or performance) could

help to encourage fresh perspectives on the way in which individuals might best use their skills.

4.3 Skills Utilisation – Current Practice

An overview of current practice within the industry was also requested during consultation interviews. It should be noted that these interviews ran concurrently with the development of our conceptual framework and at the time interviews were conducted, we had not yet moved up our conceptual hierarchy to extrapolate our Skills Utilisation Practices from the more general list of High Performance Working Practices.

The most prominent strand in the consultation interviews was the perception that in general, there had been little explicit attention paid to skills utilisation in the oil and gas industry. However, consultees emphasised that this did not mean that companies within the industry paid no attention to making good use of their employees' skills. Indeed, the fast pace of and large potential profit margins within the industry meant that skills were often an important part of a company's competitive edge. Despite this, the growing prominence of skills utilisation within academia and government discourse had not been mirrored by developments in the industry. Some consultees expressed beliefs suggesting that many companies within the industry continue to take skills at face value, viewing them as fixed attributes rather than as a latent source of potential additionality. As such, it was felt that there was likely to be very little experience of companies purposely adopting High Performance Working Practices, although it may be the case that some of these practices are already in place within the industry as they represent what is generally held to be good practice or best practice. Similarly, the concept of learning transfer was expected to mean very little to the companies interviewed in the subsequent phase of data collection. However, the underlying practice of trying to ensure that learning is implemented in the workplace was thought to be something of which many companies were likely to have experience. Work-based learning was discussed as an example of a learning transfer technique which companies might recognise. Consultees generally believed that the idea of work-based learning would be familiar to the next round of interviewees, but also believed that it was likely to be more applicable to supply chain or service companies as opposed to the exploration and production companies, many of whom expected their employees to

have a fairly specific role to perform in the overall operation. Whilst the idea of 'picking things up as they went along' was likely to play a role in many Modern Apprenticeships, health and safety requirements in exploration and production companies meant that skills were expected to be in place prior to any real involvement in drilling or extraction work, for example. However, other consultees disagreed, arguing that as long as someone is competent and accredited for health and safety, they are able to move jobs and can 'pick up skills' on the job relatively easily.

Referring back to the enablers discussed above, consultees also made a point of highlighting issues with employee engagement and leadership / management. With regard to the former, it was felt that there were particular problems in relation to the motivation component of employee engagement. Many companies were said to use techniques such as 360° appraisal with a view to understanding people and teamwork, and issues of team management and empowerment. However, there was uncertainty as to the effect this actually had upon increasing employee engagement or motivation. Compounding this was a generally accepted issue with the quality of leadership and management within the industry. Although consultees recognised that there were many very good leaders / managers / supervisors in the industry, this area was recognised as one in which much training was conducted but with very little evaluation, assessment or external quality control. A need to standardise leadership and management training – including the need to link it to the Scottish Credit and Qualifications Framework – was seen as a pressing priority. At present, too many companies subscribed to a culture of 'guru-ism', bringing in motivational speakers to deliver lectures or seminars (typically relying on the same speaker over a period of time) and expecting a trickle-down effect to ensue. However, without proper rigour or evaluation, this was seen as a hostage to fortune: firstly, many of these gurus came with no formal accreditation or guarantee that their ethos was one which would fit with the company's approach to human resources; and secondly, there was no guarantee that any positive messages would indeed trickle down as expected. The impact of the issues was heightened by the fact (highlighted above) that many employees are elevated to supervisory or managerial positions purely on the basis of their technical proficiency and perceived attractiveness to market competitors. With no background in management and a lack of rigour and standardisation in the training provided, it was seen as unsurprising that

some of these employees might struggle to adapt to the new responsibilities associated with their role.

Having discussed current practice in terms of skills utilisation approaches currently in use, consultees were asked to provide their perspective upon the extent to which any relationship between skills utilisation approaches and performance / productivity was currently measured. The picture which emerged again suggested a lack of standardisation across the industry in terms of performance / productivity measures. As identified in the literature review, there are manifold definitions of productivity based upon the way in which the relationship between inputs and outputs is seen. Reflecting this trend identified elsewhere, consultees explained that the same phenomenon exists in the oil and gas industry. To the best of their knowledge, definitions of productivity varied enormously across companies. In general, the focus tended to fall upon productivity at a macro level as opposed to a micro level: rather than considering individual productivity or performance, the strategic focus for most companies was the balance (i.e. bottom-line considerations of cost and profit). The focus of business within the industry appears to fall overwhelmingly on financial performance as opposed to the performance of individuals relative to their skillsets. In some cases – particularly at supervisory or managerial level and in relation to meeting budgets, deadlines and safety requirements – Key Performance Indicators are set and evaluated by certain companies, but this was far from standard practice throughout the industry. In addition, measurement of certain outcomes was seen as innately difficult: employee wellbeing, for example, was a hugely complex measure which could be measured in numerous different ways. Changes in attitudes may prove extremely difficult to measure. However, consultees were encouraged by the fact that there already appears to be some commitment to gathering individual level data in the shape of staff turnover statistics and – in some cases – exit interviews: poor managers were thought to increase the likelihood of losing people, and staff recruitment and training is very costly. As such, companies tend to monitor turnover on a regular basis. Consultees felt that this was something upon which the project could build.

Measurement of the extent to which skills are utilised was also seen as problematic. As the concept of skills utilisation was not one which is widely understood throughout the industry,

there is often confusion as to what should be measured at the individual level. There was also thought to be a lack of baseline data against which any interventions could be measured. Some companies had developed systems or frameworks for the identification of employees' skills, although measuring the extent to which these skills were (or were not) used was often a secondary concern. Such systems included OPITO's 'skill screening' tool, and Scottish Enterprise Grampian's attempts to measure skillsets as part of their focus on 'empowered teamwork'. Although the latter initiative initially faced middle-management resistance to the idea of 'surrendering' power, senior managers insisted and it was believed to have worked well, although very difficult to get it ingrained in the culture. On a slightly different note, some consultees mentioned PSN's 're-engineer' tool, which focuses upon the transferable skills of ex-Forces members who have recently entered the oil and gas industry, retraining them as engineers where possible. The Sector Skills Council for oil and gas – COGENT – was also understood to have taken steps towards defining metrics for skills use. However, none of these was felt to have provided a complete solution for the measurement of skillsets and skills utilisation.

5: SEMI-STRUCTURED INTERVIEWS – KEY FINDINGS

Although the one-on-one interviews represented a methodological departure from the original research proposal, they were different only inasmuch as they provided a more appropriate means of satisfying the same objectives originally laid out for the focus groups. As such, whilst the method changed, the ultimate aims remained the same. In this regard, the interviews allowed the research team to contribute towards meeting the following research objectives (see earlier sections for elaboration on these and the other research objectives):

1. To develop a mutually understood definition of skills utilisation and the component concepts that contribute to effective skills utilisation;
2. To define and agree upon a meaning of the term 'productivity' in the workplace and establish appropriate metrics analysing productivity with the industry;
3. To identify and analyse key skills relevant to productivity in the context of oil and gas;
5. To identify specific issues with graduate skills and how this impacts upon their performance in their workplace; and
6. To identify barriers to the utilisation of skills and the impact that this has on productivity.

Although interviews were intended to contribute towards a mutually understood definition of skills utilisation and its component concepts, a working definition was established prior to the interviews. As such, rather than attempting to discuss skills utilisation as a unified concept, we disaggregated it in accordance with the Scottish Government's definition.[7] Although interviewees were invited to comment upon the definition adopted, it was felt to be important to identify a working definition in advance of interviews for two principal reasons.

Firstly, prior discussions with potential interviewees indicated that many were unfamiliar with the concept and the way in which it differed from skills acquisition and skills

[7] See: http://www.scotland.gov.uk/Topics/Education/skills-strategy/making-skills-work/utilisation.

development. By providing a provisional definition at the outset of each interview before asking interviewees for their thoughts, we reduced the amount of time required to establish a clear understanding of the key concept. This allowed more time for reflection upon the practical dimension of interviewees' experiences and opinions. In addition, the Scottish Government's definition divides the concept into more readily comprehensible and less esoteric terms.

Secondly, the working definition we adopted helped to provide a logical and disaggregated structure for the consideration of different working practices later in the interview. Thus, rather than asking interviewees for any examples of their company's approach to skills utilisation, interviews focussed firstly upon any work done by interviewees' companies to deliver confident, motivated and relevantly skilled individuals, and secondly upon delivering workplaces which provided those individuals with the type of workplace environment which would allow them to use their skills more effectively.

Initial drafts of the topic guide were piloted on colleagues within the Centre for International Labour Market Studies (CILMS) at the Robert Gordon University. Following further refinement, the updated topic guide was circulated to members of the Steering Group. As no objections were raised, the topic guide was used in the semi-structured interviews, providing a core focus which retained sufficient flexibility to allow emergent themes or issues to be explored.

The topic guide is composed of five main sections, each of which contains a number of questions designed to elicit relevant information on interviewees' experiences of and opinions on skills utilisation. The results of the interviews are reported in accordance with the structure of the topic guide. This structure – and the way in which the different aspects address the different research objectives – is as follows:

1. Skills and Labour Force Characteristics (Research Objectives 1, 2, 3, 5)
2. Motivating and encouraging individual employees (Research Objectives 3, 4)
3. Ensuring opportunities exist for effective skills use (Research Objectives 3, 4)
4. Barriers to pilot formation (Research Objectives 5, 6)

5. Impact measures (Research Objectives 1, 2, 6)

Sections 2 and 3 focussed most closely upon the idea of skills utilisation. Sections 1 and 4 considered more practical (but nonetheless relevant) issues, whilst Section 5 aimed to establish how companies define productivity and how – if at all – they measure this at individual level.

Interviews took place over the course of April and May 2010. Each interview lasted for around two hours, with interviewees able to identify a number of approaches currently used in the industry in relation to skills utilisation and to provide opinions upon those practices which are not currently used widely. The following passages provide an overview and initial exploration of the key themes within each section of the topic guide as set out above.

5.1 Skills and Labour Force Characteristics

5.1.1 Labour Force Characteristics

The literature on skills utilisation suggests that better or more effective use of skills holds particular relevance for companies (and industries) which exhibit specific characteristics. In particular, industries which are considered to be highly dependent upon technology and relatively high levels of skills, and which differentiate their 'product' on a basis other than simply cost, are regarded as having much more to gain from more effective use of skills than are companies or industries which are relatively low-tech, low-skilled and which differentiate their 'product' from that of their competitors on the basis of price alone. As such, an essential first step of each interview was to ascertain whether interviewees believed the characteristics of a) the oil and gas industry, and b) their own company, to match the characteristics of industries / companies which would benefit from skills utilisation.

The interviews generally confirmed both to be the case. In terms of skills and technology, there was a wide range of responses. For example, most of the supply chain companies we

spoke to were able to draw a distinction between employees working in a design or engineering field and those in the fabrication sector or workshop. Whilst the former tended to require a higher level of formal technical skill (typically demonstrated by higher academic qualifications), the latter also required a considerable level of manual dexterity, technical ability and – in some cases – relevant qualifications.

Whilst many supply chain companies rely upon qualified engineers or technicians to design solutions for the exploration and production companies, they also relied upon workshop staff or fabricators to manufacture this to a high standard of specification. Although some orders could see workshop staff reverting to a more 'production line' style of manufacturing, it was nevertheless seen as essential to have a minimum degree of technical aptitude (typically demonstrated through further academic qualifications such as NVQs).

> We have got everything from degree-qualified people down to time served, so there's a complete mix of academic-type people through to manual-type people […] A lot of the work that we do – although it is technically quite demanding – in simplistic terms, it's fairly repetitive […] That's one of the key reasons why we are looking, particularly when we take on experienced people, at what have they actually done before. When we're taking on people, new people, young people at the start of their career, we're more focused on what is their qualification and what is their personality and what we perceive to be their ability going forward.

The same was also true of the exploration and production companies interviewed. A distinction was often drawn between the staff who worked at the "pointy end" of the industry (e.g. semi-skilled roustabouts, divers) and those who worked in the more technical side of the industry (e.g. chemical engineers, ROV operators). Whilst the latter typically demanded considerably more skills than the former, there was a perception that even semi-skilled employees were required to display competence and familiarity with a wide range of equipment (some of which would be 'cutting edge' technology) and technical procedures. As such, even at the lower end of the pay-scale, the work performed was not perceived to be low-skill work and was only rarely thought of as a 'production line' type operation.

There was also a considerable degree of harmony in terms of the type of product strategy adopted by interviewees, even across the supply chain / exploration and production divide. Whilst all companies recognised that cost is an important factor in differentiating their product from that of their competitors, there were additional concerns which assumed similar – if not equivalent – levels of importance for companies when determining how to market their product / services. For fabrication companies, the level of reliability, durability and safety of their products was an essential component of a successful product strategy. Being able to demonstrate that the work would conform to official objective standards (e.g. Good Laboratory Practice, ISO 9000 and ISO 14001) and that the workforce was certified to work to these standards was a crucial part of a company's product market strategy.

> We have people who are degree educated and also to post-grad education, down to people who haven't got diplomas […] The only sort of core skills that you could really apply right the way across would relate to health and safety, to manual handling or anything like that. Otherwise it's very much focused and specialised with your job functions […] Some of it is very high tech; some of it is very low tech, ranging from somebody with a hammer and a spanner through to extensive 3D computer modelling and decisive surveys.

Product market strategies were an interesting point of discussion in many interviews, with a clear distinction emerging between exploration and production companies and supply chain companies. Broadly speaking, whereas many production industries play a key role in determining the price at which their product goes to market, exploration and production companies produce a commodity whose price is, in large part, exogenously determined. In this respect, a clear sense of 'competitive solidarity' between exploration and production companies emerged from the interviews. A number of interviewees believed that rather than working in direct competition with each other, all of the exploration and production companies experienced the same problems and challenges on their separate rigs. As such, many saw themselves as operating in conjunction with each other as opposed to trying to undercut each other or adopting an aggressive market stance with a view to damaging a market competitor.

Although they are in theory less beholden to specific clients due to the amorphous nature of the international oil and gas market, the need to demonstrate standards was nevertheless crucial to obtaining and retaining licences and maintaining a successful corporate profile. Conformity to regulatory frameworks (particularly those relating to the environment and health and safety) was an essential component of sustaining this type of product market strategy. This need to adhere to a given level of standards meant that competing purely in terms of price was not seen as appropriate by the exploration and production companies interviewed. Although the 'bottom line' was undoubtedly important, it was one of only a number of elements of interviewees' product market strategy. As such, the impetus to compete on price terms was seen as less of an imperative for exploration and production companies than was the case for supply chain companies, meaning that exploration and production companies were keen to project a product strategy based upon competency, safety and responsibility rather than price alone. As the literature review showed, a product market strategy which is not based entirely upon price is more likely to derive benefits from better skills utilisation than one which is based entirely upon achieving a standardised product for the very lowest price.

> We don't have competitors: because we're an operator we're kind of at the top of the tree, so to speak. But the market price for our commodity isn't set by us, it's all set by market demands […] Obviously there's a whole range of operators who are in that same position and we're not so much competing against them as operating in conjunction with them. I suppose the competition comes at the forecourts where the end product is if you happen to have forecourt operations.

The situation was slightly different for the supply chain companies we spoke to. Their survival in the industry is contingent upon the ability to win contracts from the exploration and production companies or, in the case of very small supply chain companies, from larger supply chain companies. As such, they remain dependent upon the need to compete on terms of price. However, the fact that their products need to conform to extremely precise specifications mean that safety and competency remain key concerns. As such, better skills utilisation clearly had an appeal to the supply chain companies we interviewed. Indeed, the

specialised nature of parts of the supply chain means that in some cases, there is only one company to satisfy a particular skills niche.

> You'll also find small companies that provide and satisfy a very niche market, possibly one they created themselves, and they're the only people they satisfy that need, so obviously there's no competition when it comes to contracting them.

The oil and gas industry was also seen to have certain characteristics which would suggest that skills utilisation would hold relevance. Although most of the supply chain companies we spoke to were based in Aberdeen, many of the exploration and production companies and a smaller number of the supply chain companies operated in numerous different locations across the world. The internationalised nature of their operations tended to mean that they came into contact with – and were receptive to – different styles of working and approaches to making best use of human resources from other areas of the world.

> We're located in various regions of the world with the key focus areas being North Sea, West Africa, Brazil, Gulf of Mexico and the Far East.

> We very much see ourselves as being pretty international. Some of the people employed in this office could quite well be supporting a project that's being done in West Africa or in the Far East, and we may call upon the services of some of our other offices to support the projects here, depending on the type of experience and mix that we want.

5.1.2 Main Skills Issues

After establishing the relevance of skills utilisation at a general level, interviewees were asked to give their opinions on the main skills issues within the industry. In addition to providing richer detail on the challenges facing companies, this was intended to establish whether the utilisation of skills was a problem, or whether the problems were felt more in relation to the acquisition and development of human resource capital.

To this end, a number of clear, recurrent themes emerged from the interviews. These were:

- A general shortage of skilled people;
- A pressing need for an effective inter-generational skills transfer mechanism;
- Problems with core skills such as literacy / numeracy, decision-making and communication;
- A lack of effective leaders / managers / supervisors in the industry;
- The expectations and employability of graduates; and
- A need for greater transferability of skills.

These are now discussed in turn.

5.1.2.1 Shortage of Skilled People

Most interviewees were very clear in stating that as far as they were concerned, there was no significant problem in terms of an under-utilisation of skills within the industry. Due to the characteristics outlined above, it was felt that the relevance of skills utilisation to the industry and the internationalisation of the industry had ensured that working practices already reflected a considerable degree of skills utilisation practice. Rather than a problem of skills utilisation, the issue for many interviewees was an absolute shortage of skilled people coming into all levels of the industry.

> Generally, I think the skills base is pretty good.

> I don't think it's skills utilisation that's the problem. I think it's just absolute shortage of people.

As a result, the industry has had to look outside its usual circles of recruitment to identify talent from other industrial sectors which might be brought into the industry. A particular shortage was identified by a number of companies in relation to the proportion of younger people within the industry. This was particularly pronounced in relation to more technical roles. Whilst companies were able to find young people who were keen to be taken on as

part of a Modern Apprenticeship scheme, it was often more difficult for people to fill gaps in relation to the type of jobs which required higher level college or university qualifications. To address this, many companies have turned to other industrial sectors to identify people who may not have the required qualifications, but whose experience marks them out as potential beneficiaries of 'transformation programmes'. Such initiatives aim to bring experienced workers in from other industries and even the Armed Forces, recalibrating their skills in such a way that they are able to address some of the skills gaps in the industry.

> The industry itself has a shortage of skills. We have to bring people in from outside […] who have got a high level of skills, but upskilling them so they can apply those skills within the offshore oil industry […] That ties in as well with the demographics of the industry, whereby it has a relatively high average age for the people working offshore.

5.1.2.2 Effective Inter-generational Skills Transfer Mechanism

This shortage of skilled people, and particularly the shortage of younger recruits to the industry, meant that many interviewees believed that they were faced with 'a demographic time-bomb'. This was particularly acute in the case of exploration and production companies, who explained that they faced an enormously skewed demographic in terms of the age of their workforce.

> The main issue there is the age of the workforce, and that is starting to hit home over the last few years because we're starting to see people retire. When you go to any of our work sites now, I'm not sure what the average of the workforce is, but it's got to be 50 plus. If you'd gone there 20 years ago you'd see the same guys! […] What has not helped that issue is that the oil industry is very much boom and bust. So it's boom: we need a bunch of people; it's bust, we need to get rid of a bunch of people. Over the years there's a lot of the guys – particularly offshore where they've been badly hit – these guys have basically come out of the industry and when things start to pick up again, they're not prepared to come back because they know that they've got two, three years and the same thing is going to happen again.

More than one interviewee mentioned this 'lost generation' of workers (i.e. the young employees who left the industry after the recession in the 1980s and who did not return when the market recovered). Many of these workers moved to more reliable employment, such as the civil engineering sector, the emergency services or even the Armed Forces. As a result, the issue is no longer simply about the transfer of skills from Generation X to Generation Y, because there is effectively no longer a Generation Y in the industry. Rather, there is a need to transfer skills from Generation X (i.e. the original workers from the 1960s who are approaching retirement) to Generation Z (i.e. those younger workers who have entered the industry in the last decade or so). Given the age gap between these workers, many interviewees identified issues of trust and understanding between the two generations.

> The issue relates to having highly skilled people, or highly experienced people, leaving the industry and taking those skills and experience with them and by definition bringing younger people in at the bottom who don't have those skills and experience […] So it's trying to get the older more experienced people to mentor the younger ones and try and steepen the curves associated with learning […] All this relates to various recessions within the industry […] where a lot of very skilled people were lost to the industry, were being made redundant. And they then found jobs out of the industry, and haven't come back and their families have then, I would say quite reasonably, have slightly jaundiced views [about the oil and gas industry] […] So you then have an issue with people going into engineering disciplines and such like, rather than coming into the oil industry.

Indeed, some interviewees stated that there were still considerable problems in trying to attract younger recruits to the industry, particularly to fill offshore roles.

> It's been actually quite difficult to entice new blood in at the bottom there and to get those guys to come in to be prepared to take on a career in the offshore industry actually working offshore. A lot of those people now, they are quite happy to join in the manufacturing and even in some of the high-tech industries such as computing and all that type of stuff, banking or whatever […] It's been difficult to break that.

> The technical core of the industry is not attracting the bright young people it should be. There's a generation gap […] People were being driven away. It's only the last six years that youngsters have been coming back in, but the quality hasn't been there.

This problem has led many companies to invest significant resources in succession planning exercises. However, in many companies the line of succession is not clear due to the shortage of skilled people, particularly within the younger age-brackets.

> We've also had a focus on […] identifying our talent and high flyers. The whole aspect is succession planning i.e. if a key individual in the company leaves, what happens then? Do we backfill it internally? Are there people capable of doing that internally? Or should we have a strategy that we would then immediately have to go to the market?

This has hit smaller exploration and production companies particularly acutely. Whereas many believed that the larger multinationals would have little difficulty in identifying talent from within (or head-hunting from other companies), this was far less straightforward for less powerful players in the market.

> We're just a small company, so if somebody in a key position moves on then it's got potential to leave a big hole behind. We're not a big multinational like Shell or BP, where they can just sort of do a gentle shuffle and everyone just sort of backfills a little bit. We're not in that position, so we have to be very aware of the potential impact that could have which is where the whole mentoring and coaching for personal development plans comes into being. Succession planning is certainly one of our key projects.

To address the problems of the generation gap and need for skills transfer, many of the companies we interviewed had introduced mentoring schemes. However, these initiatives were rarely thought to work effectively, due in part to a fundamental lack of rigour in many mentoring schemes. This issue will be explored in greater depth later. However, it is worth

noting that those companies which had implemented a successful mentoring scheme believed that it had paid significant dividends in terms of skills transfer.

> I don't think age is a big issue. And I think there is skills transfer […] There's a slightly skewed demographic […] but we are doing something about it: we are bringing new technicians in to make up for that. And they're being mentored by the older guys.

The same also held true for supply chain companies with a significant offshore component. The situation here was slightly different, in that many of the exploration and production companies were thought to prefer their contractors using employees with considerable experience as opposed to those who were still 'wet behind the ears'. Given this preference, many companies tended to rely upon older, more experienced personnel, whilst the industry preference for older self-employed contractors meant that fewer young people were breaking through into the industry, leaving a vacuum. Although this was being filled by experienced workers from overseas, it was felt by some interviewees that the standard of foreign workers did not match up with that of UK workers. As such, some form of mechanism for bringing through young talent – even in industry sectors which have traditionally been dominated by self-employed contractors – was thought to be crucial.

> All divers are self employed, and because no company employs them and there's no training mechanism, […] the same guys have done the same diving operations year in, year out, because they're very efficient […] All the divers are in their fifties – some are in their sixties – so there's going to be a massive skills shortage there in the next five to ten years. Everybody thought they were going to end up with Remotely Operated Vehicles but it's never going to happen. It's always going to be divers. [But] there just isn't the same number coming through, so we're ending up with lots of South Africans and Nigerians and less competent and capable guys, which is unfortunate.

> The people that are coming in are new and they obviously need a few years to pick up experience. Generally, in the line of work that we do, we're very reliant on people's experience […] Over the years, in order to backfill some of these slots and

also to remain cost competitive, we have to look at different geographical areas for some of our workforce as well.

5.1.2.3 Core Skills

Another fundamental skills shortage identified by a considerable number of interviewees was that of literacy and numeracy. Particularly with regard to the former, it was felt that a large proportion of graduates of both secondary and tertiary education systems were leaving education with significant problems. This issue was identified by a wide cross-section of interviewees, both from the supply chain and the exploration / production sector.

> The education system's been devalued to such an extent that people are barely literate and numerate. I find it somewhat gobsmacking […] that people have to go to university and then be given remedial classes in English […] Some of these people can barely write, to be perfectly frank.

> One of our biggest issues right now […] is the standard of handwriting and just the standard of English. It is, I would think, at an all-time low. […] You ask them to fill in a form, fill in a report and it's frightening. It's a big issue; it's getting worse.

> A lot of them need to learn to read and write and communicate properly and punctuate a sentence, because the amount of ambiguous rubbish that is perpetrated between them and a client: sometimes, you have more problems deciphering the English than you do diagnosing the engineering problem […] I'm talking about our own Scottish people, awfully bad sometimes at getting a clear message backwards and forwards between ourselves and a problem offshore [...] You get to a problem so much more quickly if you get concise, clear messages instead of the nonsense we tend to get.

This elementary lack of numeracy and literacy was thought to be enormously significant due to the knock-on effect it had on virtually every other aspect of employees' duties. Similar issues were experienced with other 'core' skills (i.e. non-technical, general, transferable competencies). In particular, interpersonal skills (such as communication, team-working,

problem-solving and creativity) and the ability to make decisions and take responsibility for those decisions were highlighted.

> Some of them come out into industry in a fairly unsure, uncertain way […] I mean self confidence; the ability to handle themselves and get out-and-about is important. Again, universities don't really seem to do that. You're frightened of sending them offshore because they're a bad ambassador for the company. They don't dress properly, don't eat properly, they don't look very nice, they're dirty and unshaven some of them, and that's bad for the company. I'm sorry; it sounds very old fashioned.

> We find that the youngsters aren't very creative because they haven't been taught how to think; they haven't been taught how to create. They've been taught how to pass exams. They're very good at learning something and passing an exam but they really don't have any creative engineering skills […] They just don't know how to be creative because they're not taught it, we were taught it, we were taught how to solve problems. I might be being very rude about university but it doesn't seem to me that people are taught that these days.

Although these core skills were mentioned by a considerable number of interviewees, it was felt that the onus should not be upon employers to address such issues. Rather, it was important for the secondary education system and universities and colleges to ensure that standards of literacy and numeracy are of an acceptable level. It was suggested after one interview that universities and colleges needed to focus more attention upon developing their students in this way, rather than focussing quite so much on the syllabus content (although it was recognised that the former could not take place entirely at the expense of the latter). As such, whilst all of the employers who mentioned this issue were also aware that remedial classes were available for literacy and numeracy, there was a sense of indignation that this issue should be dealt with by employers. The sentiment was expressed that the product being produced by schools, colleges and universities was – in some respects – substandard, and that the best way to address this was to deal with the problem

at the source, rather than placing the onus upon employers to redress any deficiencies in the education system.

5.1.2.4 Leadership / Management / Supervisory Skills

Another 'enabler' of skills utilisation which was singled out for particular attention was the lack of competent leaders, managers and supervisors within the industry. Although such skills may be thought of as core skills, the impact which the lack of these skills has had was seen to be so profound that it merits its own section. Indeed, this theme was one of the very strongest to stand out across the entire range of questions asked of interviewees.

Good quality strategic vision – of which leadership and management is a crucial component – was highlighted in the literature review as being a significant enabler or prerequisite of skills utilisation. Interviewees also confirmed the role of leaders and managers in a company's deployment of its human capital. Generally, a very large degree of responsibility for skills utilisation is believed to lie with leaders, managers and supervisors, and where any shortfall in skills utilisation exists, many interviewees believed that this would be attributable to supervisors and managers not being proficient in knowing their employees, their skillsets and their motivation.

> [It] would have to come down to the line managers or supervisor to utilise what they've got available. You know you've got a set skills base available to you. This is probably where our managers fall down: they don't look at what they've got; and if you look at when you've got your skills base, how do you use them to liquidate the scope of the work? […] You know, they don't <u>think</u> like that.

As such, the quality of leadership and management was seen to be a crucial barrier to skills use. Although barriers to skills utilisation are discussed in greater depth below, this particular barrier is seen to stem directly from a significant lack of skilled people within the industry who are capable of acting as competent leaders, managers or supervisors. Interviewees went to great length to explain that this is not because there is a shortage of people with a good understanding of the industry. Rather, the opposite is true. Across virtually every interview, it emerged that there was an implicit assumption throughout the

industry that a high level of technical proficiency would automatically mark somebody out as a competent leader, manager or supervisor.

> We promote people due to their level of technical capability and actually, they don't want to be promoted, because what they enjoy doing is getting their hands dirty […] "He's good at his job and therefore he'll be a good supervisor". Actually no; he'll probably be a poor supervisor, because the first thing he's going to do is roll his sleeves up and get stuck into the job. You don't want supervisors to do that.

> Historically, the leaders and managers of the company come up through the ranks, and what we've found is that they may have been a very good engineer or they may have been a very good accountant but when it comes to managing people, to looking after people, encouraging those people to develop, they're in no man's land because they've had no training as to how that should be done.

As a result of this, a smaller number of interviewees identified a 'yo-yo' phenomenon, whereby employees may be promoted to supervisory level, only to drop back down again at a later date when they realise that they do not enjoy the work, fail to perform satisfactorily or feel incapable of taking on the responsibilities associated with the job. This phenomenon was not reported to be particularly common, but it was a significant cause for concern for those interviewees who mentioned it.

> We promote people from the tools, from doing what they're doing, to be a supervisor for a piece of work, and then they'll go back to the tools again. So they're up and down, and they don't know whether they're a supervisor or whether they're hands on. Do we give them the right skillset? Yes, we <u>try</u> to give them the right skill set. Are we always successful? No.

In general, companies have been so concerned about this shortage that they have expended significant amounts of time and money with a view to addressing it. However, interviewees identified slightly different responses to this problem. The most common response was for companies to bring in some form of training solution; either in the shape of bringing in

leadership / management 'experts' to deliver seminars or conferences on effective leadership; or by contracting third parties to deliver a bespoke package for the company to use now and in future.

> We decided about three to four years ago that we would try and concentrate on developing internal courses, particularly focusing on leadership and development and targeting future management levels of the company […] We have worked with some external organisations in order to do that […] We'll throw some ideas about as to what we generally want, how we generally want to structure things and then they'll go away and develop a course.

The other common response companies have had to this problem has been to focus upon leadership in any personal development plans or annual reviews, with a view to identifying at an early stage those employees who have the desire and ability to move up to supervisory, managerial or executive level.

> We've tried to capture a lot of that through the annual performance reviews to see whether people are happy to continue where they are; because without a doubt, some people are more than happy to sit and crunch through numbers day in, day out and that's all they want to do.

Despite this, interviewees gave the impression that the actions being taken to address this issue had not had the desired effect. There remained too small a pool of potential leaders within the industry and as such, there was a clear thirst across the interviews for some other form of mechanism which could increase the pool of potential leaders and managers. There were no concrete suggestions as to how this problem could be solved, but there remained a clear emphasis that something must be done.

5.1.2.5 Expectations / Employability of Graduates

In relation to the previous point, a number of interviewees identified a particular problem which emerged in the case of graduates. In some cases, graduates were extremely keen to advance to supervisory, managerial or executive level despite not having the requisite

skillsets. Whereas the previous issue covered reluctance on the part of technically proficient people to step up a level, in this case the combination of enthusiasm and insufficient technical skills was seen to be a problem. This combination was identified by a number of interviewees, although often this was not specifically in the context of leadership and management. Often, a contrast was simply drawn between the expectations of graduates on one hand, and their actual employability on the other. Generally speaking, interviewees believed that graduates' expectations often exceeded their workplace capabilities. Again, university graduates were thought to be entering employment with deficient skillsets, despite having extremely grand ambitions. It was often felt that the increase in recent years of people going to university had unreasonably raised graduate expectations to a level which employers could never realistically hope to match.

> Now everybody wants to be an MD, and they all think they can do it on the back of having Media Studies […] That's why you've got disenchantment: there's this level of expectation, people being elevated to get to university and the only way they can get to university is for the criteria to enter university to be dropped.

As a result, there was a clear preference among many interviewees for hiring experienced people from other industries rather than employ graduates with suitable qualifications. Often, it was felt to be more efficient to identify people in other industries (with no oil and gas experience) and sponsor them through transformation programmes than to employ graduates fresh from colleges or universities, even if they have a relevant oil and gas qualification.

> [We] go outwith the industry for certain categories of people, maybe the civil industry or North East England or something like that where we know there is a skill pool […] We're prepared to take relatively experienced guys that have maybe been five, ten years out of our industry but they've got an ability to learn and we are prepared to invest a year of on-the-job training for those guys in order to bring them forward […] To be honest, if you look at the profile of the people that come in to our organisation through that route, particularly in engineering, those guys outperform

> the graduates coming in more quickly. They hit the ground quicker and the payback is quicker as well.

Graduates were often felt to be a more time-intensive investment and very often, their expectations meant that they had a lower degree of loyalty to their employers than would be the case with older, more experienced employees. There was a perception that graduates had a more mercenary attitude to their career development, and investment in graduates was seen by some interviewees as a false economy, as graduates who felt that their ambitions were not being matched would readily look elsewhere for employment.

> Graduates are very keen. They are absolutely focused on their career progression. They expect after a couple of years in a graduate scheme that they're going to be a project engineer. They expect after a couple of years of being a project engineer they're going to be a senior engineer. After a couple of years of that they want to be a lead engineer. They see that progression going all the way and if they don't see that coming then they are absolutely going to look outside our organisation and look at our competitors. And I think that's fairly true of most of the other organisations as well.

Whilst the idea that graduate ambition should be criticised may be open to debate, a small number of interviewees expressed considerable concern at the value of employing graduates and their ability to deliver in the workplace. Indeed, some interviewees were particularly blunt or scathing when discussing the expectations of graduates and the actual value to companies of employing them.

> The calibre of people that we have to deal with coming out is not great, at graduate and at apprentice and at trainee designer level […] If anybody wants to look at the underlying problems in productivity, then that's one of them.

> Typically, I would not put a graduate anywhere near one of these sites because they'd destroy it; they'd run rings around it, they wouldn't know what they were

> doing. You have to have a bit of streetwise credibility […] rather than somebody that understands the engineering but not the working practices.

5.1.2.6 Greater Transferability of Skills

An issue identified by a number of interviewees – but which was identified as being a relatively minor concern – was the need to develop transferable skills with a view to meeting the demand which was likely to emerge in a number of key industries over the next decade or so. In particular, the nuclear industry, the move towards decommissioning in the oil and gas industry and the nascent renewables industry were all seen as areas into which oil and gas companies – exploration / production companies and supply chain companies alike – would have to diversify in order to remain productive.

> We're not in a good place. We're not producing the right calibre of graduates; we're not producing the right level of apprentices. We've identified massive shortfalls in skills in engineering construction across the UK […] Nuclear power stations: I don't care what anybody says, they're coming, as are coal fired power stations, as are more gas fired power stations because the lights are going to go out if they don't, and no government's going to allow that to happen. Where are we going to get all these skills from? We're going to have to import them. We haven't got them in this country. People generally are not interested in them.

However, other interviewees were less pessimistic about the need to develop entirely new skillsets to deal with these developments. Rather than seeing these industries as requiring entirely different skillsets, these interviewees argued that what was required was a simple recalibration of employees' skills to match the requirements of the other sectors.

> Decommissioning and alternative energies: these are largely spin-offs for what we're involved in; what I would call our hydrocarbon oil field industry. With some tweaking rather than some reinventing, the skill sets generally available to service oilfields can and should be applied to areas such as decommissioning and alternative energy. Decommissioning is about reverse-engineering what we all did 30 odd years ago, so we ought to recognise it as such. Alternative energy is a step away but not a clean

> page of paper altogether. It's a nudge at development [of skills] rather than a reinvention of skills.

5.1.3 Specific Performance / Productivity Issues

Having discussed with interviewees their principal skills issues, they were asked to elaborate on any specific productivity or performance issues they might have in their operations. In general, interviewees found it difficult to pinpoint specific performance or productivity issues.

> I guess that every employer is going to always say that they would like to see more for less, but […] I would say that there probably isn't a productivity issue.

Whilst few specific issues were highlighted, one extremely strong recurrent general theme did emerge from interviewees' responses. Virtually every company we interviewed claimed that they had no specific productivity issues, but that they had difficulties with staff motivation, which they felt had a considerable impact upon their company performance. In addition, a smaller number of companies identified a lack of creativity as contributing to poor productivity. This, however, was a considerably less pervasive theme than that of motivation. These two themes are now discussed in turn.

5.1.3.1 Employee Motivation

There was a general perception that employee motivation is a problem. Levels of employee engagement in general and employee motivation in particular were believed to have declined in recent decades. A recurrent theme across around half of our interviews was the impression that UK workers compared particularly unfavourably to workers of other nationalities in terms of motivation. This had led a number of interviewees to hire labour in from overseas.

> We had a good example – probably about ten years ago – where on one of our outbreak barges we were almost exclusively using UK-based welders. Welding for them was a secondary issue that if they had to, they would go and do it, but otherwise all they wanted to do was cause trouble, get more money and get leave.

> So we decided that we would go for Far East welders. We talked about it for several years. We'd always said: "No; it'll never work", and then finally we got a project out in the Far East and we thought: "Okay, we're going to give it a go". […] We were shocked to find out that these guys were cheaper, they were technically far superior and they wanted to do the job. We've stuck with that ever since, and there is no way that we would go back to the other route. And I think for all of the other categories of offshore labour we would have a preference to go down that route, but there is an issue with training and also language.

In addition to the standard responsibilities associated with a job role, there was also thought to be a negative attitude towards skills development among many UK workers. Rather than seeing the developmental opportunities inherent in additional training, many employees were reported to see training as a necessary evil, or – in some cases – almost as a punishment.

> I've worked pretty much Azerbaijan, Kazakhstan, Kuwait, Middle East and across in Canada […] I think in the western world there's a theme there […] What I see when I've gone elsewhere is there's this absolute desire to learn; where training is not seen as a punishment. Training is seen as a punishment here.

Interestingly, one interviewee in particular disagreed with the idea that UK workers were innately less motivated than their foreign counterparts. Rather, this interviewee argued that workplaces have a default motivational culture to which new recruits automatically default. Although this can be seen in onshore work – certain fabrication teams tend to have a higher work ethic than others, for example – it is most pronounced in offshore work, whereby specific rigs are seen to have a particularly high or particularly low motivational culture. When new employees are introduced to this culture, their work ethic will either rise or fall until it is in line with the prevailing motivational culture. Generally speaking, whilst non-UK workers may initially appear to have higher levels of motivation, this interviewee argued that motivation levels quickly fall into line with this default level when introduced to an unproductive rig. Similarly, UK workers' levels of motivation may be seen to rise when placed on a very productive rig, whether in the UK, the Middle East or Eastern Europe.

> Depending on which asset they're placed on, that mindset starts to formulate […] It's that offshore environment; that small village mentality: strong, strong peer pressure […] Whatever it is; you default to the culture of the climate […] It's definitely about culture and climate on these assets.

Another interviewee expressed similar sentiments, arguing that older rigs with more rudimentary facilities were less likely to engender a culture of enthusiasm and motivation, whilst newer rigs would instil a higher level of motivation.

> We've got [offshore] assets which are a couple of years old. The facilities on them are okay; they are reasonably basic. There has been an influx of new assets coming out in the last few years and we have some of those as well. You go on board one of those ships and you're into facilities that are far superior […] It is a bit of an issue now for us to expect people to go from a really brand new asset to ask them to go back to one of our older assets. There's a bit of reluctance, and there have been instances where people have said: “No; I don't want to go back and live on that”.

The typical response to this appears to have been to try to establish the origin of the fall in motivation. For most companies, this was linked very strongly with their earlier comments about the lack of proficiency of many supervisors, managers and executives (both current and aspiring). Good leadership was seen as fundamental to an engaged and motivated workforce. Thus, if there was a problem with motivation, the response was typically to increase the demands placed upon leaders, managers and executives to motivate their employees. Some improvement to leadership and management was therefore the preferred type of intervention for these companies, believing that an investment in good quality leaders, managers and executives would ultimately deliver a trickle-down effect which would impact positively upon their employees.

> We have a strategy in terms of changing the culture, which doesn't happen overnight. It's something that you have to do and it's down to heavy investment in your supervision. Your offshore and site supervision is absolutely pivotal in making

> things happen […] It can all break down depending on the people that you've actually got in place of offshore. I've worked offshore. These become little small villages; assets of small villages. The guys will do what they like, and it's that mindset that you have to change […] It's about constantly drip-feeding, building the foundations and then maintaining pressure to make sure that they're constantly getting the same message, that this is how things should be done round here.

A crucial element of this for many organisations was some form of early indication of motivated employees who also appear to have the desired supervisory or managerial competencies. In most cases, companies try to do this through a process of annual review or personal development planning.

> The important thing is when we recruit somebody and we see them working, we want to quickly identify whether that person is confident and motivated. And, if he is, we need to identify that and then we need to target him so that we can address what is his short-term needs and requirements and his longer-term needs and requirements so that we can nurture and ensure that we retain him in the organisation.

Although most interviewees believed that it was possible to change the low motivation culture, some interviewees were less convinced. These interviewees were either unconvinced by the prospects of being able to reverse the decline in motivation, or did not believe in the value of doing so. In relation to the former, a number of interviewees expressed a fatalistic attitude, suggesting that the problem of low motivation in the UK is now so pronounced that a profound attitudinal and cultural change in mindset is required if motivation is to return to previous levels.

> People these days, generally speaking, are not engaged in the workplace to the extent they used to be. They want to come to work, they want to earn their money and they want to go home and that's a fact. Can we change that? I think it's a generational thing. I think it's bigger than that now.

In relation to those interviewees who did not see any value in trying to put in place a 'motivation intervention', a small number of companies believed that low levels of motivation simply reflected an underlying lack of interest in one's job. This, it was argued, is not something which employers should feel the need to change. According to this perspective, if somebody is not motivated, then the solution is not to invest time, effort and money in motivating them, but rather to find people who do have the requisite drive to get the job done.

> If I have to spend my time motivating people, then they're the wrong people. I don't spend any time on team building, giving out fleeces and motivational crap. It's just a waste. All this kind of rubbish; it's just nonsense. If the guys need motivation then they're the wrong people.

> This whole idea about motivation to get things done is just nonsense. You don't need to motivate people. It's a waste of time, effort and money. You should just get rid of the person that needs to be motivated and find somebody that's keen and interested in doing that piece of work. And once you find that person it becomes a whole lot easier. You don't waste your energy on those people that need all that extra effort. You concentrate on people that actually deliver.

> You shouldn't need to motivate people. If people need motivation, they're in the wrong job […] It's not my job to get them out of bed and motivated.

Such interviewees were extremely sceptical of one-off attempts to put in place higher levels of motivation. It was argued that any attempts to increase motivation – in the sense of simply geeing people up – were innately short-sighted and typically failed to take account of why people were so disengaged from their job. There was also a criticism of the tendency to use financial incentives to motivate people, which was seen as similarly short-sighted and limited in terms of its longitudinal impact.

> <*Company name removed*> spent £5 million on McKinsey, […] trying to motivate and train and teach the guys how to do things better. £5 million! It didn't make a spot of difference.
>
> This idea that people are motivated by bonuses: you're getting a short-term boost, and then <u>everybody</u> will expect a bonus <u>every</u> year […] No, no, no; it's just not a good mechanism to use at all.

Rather, according to these organisations, the absolute key to employee motivation was to make them greater stakeholders in the work they are expected to do. Around a quarter of our interviewees had direct experience of giving greater autonomy to their employees, allowing them greater discretion in directing their work. This, it was argued, contributed to a greater sense of responsibility for one's decisions and actions, and was seen as a far more effective tool for engaging with the workforce and increasing motivation that any other reward scheme, financial or otherwise.

> By using their initiative, by giving the freedom of action to use their initiative by passing that risk responsibility down to them, that is how you reward them. There's nothing quite like the job satisfaction of doing something well […] [After one project], the CEO was across and he said: "good job; here's a cheque". He gave me a cheque for £10,000 […] [But] it's the pride of doing the job well: that's more important than the actual financial return […] Bonuses will not change behaviours. That's not the answer, absolutely not.

Although these experiences are explored in greater depth in a later section, it is worth noting the strength of feeling shared by these companies in relation to the effect that greater employee autonomy can have upon levels of engagement and motivation.

5.1.3.2 Creativity Issues

A far more minor theme to emerge from the interviews was a lack of creativity in the industry. A number of interviewees identified creativity as being crucial to their business model, particularly those involved in the supply chain, for whom innovative designs can

greatly increase market stature. Creativity was seen as fundamental to commercial success, although it was recognised that the benefits of creativity (being seen as the 'cutting edge' of the industry) was fickle and could change extremely quickly.

> Creativity is driven almost by commercial sharpness. A lot of the work that we do tends to be lump sum in nature and in order for us to make money on that, we have to be creative; we have to continually look at doing things faster, quicker, cheaper and better in order to stay ahead of our competition, just from a point of view of one, winning the project in the first place, and two, executing it appropriately and making money […] We keep on climbing up the ladder, and where we think we've got ahead, you only stay ahead for a year or two and then things will catch up.

However, it was identified by a number of interviewees that the nature of the industry often served to frustrate the forces of creativity. In particular, rigid health and safety legislation and the need to adhere to accredited procedures (e.g. Good Lab Practice, ISO 9000, ISO 14001) were seen to impose a prescriptive approach to working, meaning that innovative or creative solutions could be implicitly discouraged. Thus, the 'command and control' structure of many companies within the industry could work against the emergence of creative solutions. Often, this led to a sense of 'bounded spontaneity' or 'bounded creativity', whereby suggestions for improvements would have to be passed upwards for approval. In many cases, this could mean being passed by a supervisor, a line manager and perhaps even an OIM or executive. On the other hand, a number of companies were prepared to give their employees greater discretion over how they arrive at a given product specification, with some companies positively encouraging their employees to think creatively. In addition to greater levels of employee motivation, the idea of granting greater autonomy to employees was also seen as leading directly to greater levels of spontaneous creativity, which in many cases allowed for more innovative solutions to emerge more organically and – crucially – quickly. For example, one interviewee described an occasion on which they discovered a problem with a new pipeline being laid:

> The last time that <*company name removed*> replaced a pipeline – exactly the same subsea pipeline – it took them three years. It took us 93 days. That's the difference.

> As soon as we found there was a problem, on the Friday I found out there was a problem, I worked out a plan over the weekend, on the Monday we phoned the CEO and said: "It's going to be about £15 to £20 million to sort out". [He said]: "There's the money; go and do it". And just that phase would take *<company name removed>* four or five months.

Whereas most companies perceived this greater autonomy to be incompatible with health and safety requirements and the need for direct accountability, the companies who have adopted this approach made it clear that they do not take short-cuts when it comes to safety: rather, they operate within exactly the same regulatory framework as everybody else.

> It's got to be safe; it's got to have the integrity; it's got to be fit for purpose. And we will <u>never</u> compromise safety. We <u>don't</u> cut corners. We've got a better safety record than when *<company name removed>* owned the *<oilfield name removed>*. And if you speak to the HSE or DEF, they're over the moon about how much we've done […] It's just about that speed of decision making, and passing the responsibility down to the lowest level so that people can actually utilise their skills.
>
> Obviously people have certain parameters within which their decision making responsibilities are aligned, but those are well defined: people know what they could do, and the general feeling is that […] they shouldn't have to keep deferring upwards to get authorisation to do things […] We work within those same health and safety constraints as everyone else. But we'll make it work. They still have risk assessments to fulfil, they still have health and safety guidelines that they have to follow, they still have to satisfy the requirements of the Health and Safety Executive.

As was outlined above in relation to its impact on employee motivation, the theme of greater employee autonomy will be explored in greater depth later. However, in relation to the theme of creativity, it is again worth noting the strength of feeling expressed by those companies who claim that autonomy can yield benefits in terms of creativity and speed of decision-making processes.

5.1.4 Understanding of Skills Utilisation

Having discussed labour force characteristics, skills issues and productivity / performance issues, and prior to exploring examples of the different categories of skills utilisation practice identified in the literature review, interviewees were asked for their opinions upon the definition of skills utilisation provided by the Scottish Government and used by the research team as the basis of the research.

In general, interviewees expressed satisfaction with the definition and agreed that not only did it clarify for them the way in which skills utilisation differed from skills acquisition and development, but for many of them, it also appeared to encapsulate much of what they are currently doing with regard to their companies' use of human capital. One other recurrent theme, though, related to companies' understanding of the workplace element of the definition. Generally, companies were extremely positive about the idea that individuals' behaviour needs to change if skills are to be effectively utilised, but there was less acceptance of the notion that structural changes are also an important factor in making the best use of the skills available to you. Whereas we understand the definition to relate to the way in which work itself is structured, many interviewees took this to mean the specific working environment in which employees are based. As identified in the section on motivation, a pleasant working environment is clearly an important factor, but it is interesting that few organisations chose to understand this in a way which keeps the onus for fundamental change upon individuals as opposed to employers.

> I don't think you could argue with that at all. I basically sum it up as 'a competent workforce working in a safe workplace'. That's what we're striving for.

> That pretty much mirrors the type of approach and wording that we use here when we're looking to recruit and retain people: to get that confident, motivated individual. We want to provide him with a workplace that is nice to come to, and appropriate in order to get the best out of these people.

One minor concern was the apparent 'wordiness' of the definition. Despite this, the interviewee who expressed such concerns had no concerns over the issues denoted by the definition.

> It's been written by somebody that probably doesn't understand the world of work. What would that mean to an apprentice mechanical fitter? Not a great deal, to be perfectly frank, would it? What would it mean to a graduate engineer? Probably a bit more but again, it's pretty trite.

Despite this isolated objection, the high level of understanding of the definition and its utility in establishing for interviewees the scope of the project and the discussion at hand allowed us to continue with the other substantive aspects of the interview.

5.1.5 Enablers of Skills Use

Having further established the scope of the project through discussion of the definition of skills utilisation, interviewees were asked to identify any key prerequisites or enablers of the better use of skills in their company.

The literature review identified a number of key enablers of skills utilisation. In particular, strategic vision (i.e. leadership and management), a solid skills base and stakeholder buy-in were seen as crucial. In the interviews, a solid skills base appeared to be taken for granted by virtually every interviewee, perhaps reflecting the perceptions (as explored above) that the industry does not generally have a significant problem with skills shortages. The key exception to this (as identified above) was the shortage of proficiency in leadership and management. Accordingly, it was singled out here as a key enabler of skills utilisation in interviewees' companies. In addition, competence frameworks and environmental factors were identified as important enablers, although surprisingly, employee engagement or motivation was not.

5.1.5.1 Competence Frameworks

At base, competence frameworks are simply some form of catalogue or record of the abilities of employees within the industry. Although there are some instances of these

frameworks recording employees' softer skills, they tend overwhelmingly to focus upon the formal qualifications and accreditation of individuals, effectively specifying what they are and are not permitted to do. Although they were thought by interviewees to be particularly common for maintenance and operations employees in an offshore environment, many exploration and production companies were now keen to ensure that their contractors' employees were of a specific certifiable standard.

> They go through a competency assessment offshore. We have supervisors who are trained in assessment and we have mentors out there, so for our young, new technicians that come out there for the first time they go through something like six months to a year of an apprenticeship competency matrix […] They get module training and offshore training, on the job training, and then they're allowed various areas of competency within the plant as to what they're allowed to touch and do.

Of course, this does not necessarily mean that they are incapable of undertaking any of the competencies not specified in their framework; but rather that they do not have any kind of certification to do such a job. Similarly, simply having a qualification may not necessarily be sufficient to permit a worker to undertake a specific job. If certain technical competencies are not regularly revisited, this may indicate that employees are 'rusty' in a given area, and are therefore unlikely to be selected for that particular task. As the following interviewee explained, having up-to-date certification is seen as absolutely essential to the running of a tight operation, whether onshore or offshore.

> You have to prove competence, and if there is an incident offshore, the HSE are all over you, and they <u>will</u> be looking at your competence. "Is that person competent to do the job?" Doesn't mean has he got a qualification to do that job, it's can he actually <u>do</u> it.

In some cases, it was felt that this insistence upon certification had been in part driven by an influx of lower-cost labour entering the employment market in recent years.

> Particularly for offshore guys […] they have to have regular courses; they have to go on the simulators in order to retain their tickets so that they can continue to drive the crane […] They need to regularly review all that. So we keep competency matrices of that in order to make sure that those guys' competence and qualifications are kept up to date […] We satisfy ourselves that we have got a competent person there. Certain of our customers have got more focus on that, and will demand that before you go offshore they see evidence of these guys' qualifications and their competencies […] Customers are now starting to almost do random spot-checks on people's competence to make sure that things are okay. And I think that's driven by a genuine concern that there is low-cost labour coming into things and what is the exposure there, but also the fact that certainly in the marine side of the North Sea there's been an astronomical amount of new tonnage coming in.

However, a key drawback of this approach was the fact that aside from formal qualifications, there appears to be very little in the way of industry-wide consensus on the content, format and ability to disseminate these competence frameworks. Although they are already seen as enormously valuable at company level, there is apparently very little by way of transferability of competence frameworks from one company to another. In part, this reflects the proprietary equipment used by companies or the different way in which companies train their employees to perform specific tasks. However, it also represents a certain degree of suspicion on the part of many companies towards sharing of good practice with their competitors. Whilst numerous interviewees agreed that there was potentially much to be gained by the industry as a whole through the adoption of some degree of standardisation of competency frameworks, this was not universal. Having a good competence framework was potentially a useful tool in getting more out of one's workforce, and some companies –perhaps understandably – were less willing than others to surrender a potential competitive edge.

> We have competence frameworks but really, they are <u>our</u> competence frameworks. Therefore, that's what gives you a competitive edge. So would I share them with anybody else? […] It's proprietary, so I'd be loathe to give it away.

5.1.5.2 Leadership and Management

The role of leadership and management in getting the best out of employees has already been covered in some depth above and, as such, points already covered will not be reiterated in depth in this section. However, where interviewees earlier identified a considerable skills shortage in relation to supervisory / leadership / management capabilities, so they commended the presence of these capabilities (where they do exist) as a key enabler of skills utilisation, both directly in the sense of the strategic vision and direction of an organisation, and indirectly in the shape of competent supervisors, leaders and managers motivating employees (which in turn acts as an individual-level driver of skills utilisation).

Again though, the diagnosis of the industry was not an encouraging one. Although a number of interviewees echoed a key finding from the literature in arguing that significant strategic buy-in to the idea of skills utilisation is as important an enabler as employee engagement or buy-in, this was not felt to be commonplace in the industry.

> If the CEO and whole culture isn't there, it's never going to work. You can't do it from the ground up. You can't just do it in a part of the organisation; it has to be from the top down.

> A structure that allows them to function better […] They should also know as well that they will get support from their line managers.

A small number of interviewees also criticised a number of their market competitors for relying upon clichés when attempting to make better use of their employees' skills. One interviewee was particularly scathing in his evaluation of other companies' reliance upon technology as a driver of skills use. Too often, other companies were thought to rely too much upon technology as a key lever of productivity, when in fact people would always remain crucial to company performance.

> Technology has got nothing to do with it. People will always think: "oh, it's technology; it must be technology". It's bollocks. [We] are front runners in

> technology, where it's appropriate; but technology is not the biggest driver, it's an accelerator to the way we do business, but it's not the driver. What's important is to get the right people in the right place, and then have the right core competencies and then you can do anything.

5.1.5.3 Environmental Factors

Again, the role of pleasant environments has also been spelled out above in relation to motivation and the key points will not be repeated here. It suffices to say that numerous interviewees mentioned more agreeable working environments as enablers of employee engagement, which could in turn improve as conducive to greater motivation, which (as outlined above) is in turn a key enabler of skills utilisation.

> For the platforms like ours which we've recently taken over, [with] a lot of investment going on, then there's a very high level of motivation. I would imagine that's the same where there are new platforms being installed by some of the new small operators that are coming in.

5.1.6 Barriers to Skills Utilisation

Interviewees were subsequently asked to provide their opinions upon possible or actual barriers to skills utilisation. A number of key themes of varying recurrent strength emerged here. The most pervasive themes were the prevalence of staff poaching in the industry and the knock-on effects which this has, and the lack of industry-wide competence frameworks of the nature explored above. The remaining barriers were far less frequently identified by interviewees, but were the cost of putting in place effective skills utilisation, and a general lack of initiative amongst employees.

5.1.6.1 Staff Mobility

The mobility of staff was highlighted as a key barrier to skills utilisation. The barrier was identified by virtually every interviewee, regardless of company size or sector of operation. Although the problem of poaching was – by definition – restricted to those members of staff who were thought to have excelled in a technical or operational role, it was very often seen to be the case that staff members of all levels could proactively search for new

opportunities elsewhere rather. Although this is likely to be the case in any industry, there was thought to be a particular issue of staff mobility within the oil and gas industry in NE Scotland.

As has already been identified, staff from a particular demographic or who are particularly proficient in a particular area are often in short supply within the industry, and if we think of labour as a product offered by employees, it can be seen that many interviewees see the market as being seller-led (i.e. the power is held by employees rather than employers). As such, employers often felt a degree of reticence in terms of investing in human capital. A recurrent paradox identified by numerous interviewees was that investing in employees could often be counter-productive. By providing an employee with either more skills or a better understanding of how their skills can be applied, he / she automatically becomes an attractive prospect for other companies working within the sector.

> One of the disappointing things that we obviously can't avoid is for us to take people into the organisation who stay one or two years, and we spend a large amount of time and money training them and then they go and leave. So there's a big focus on trying to retain those guys.

The consequence of this was thought to be a vicious cycle in which no employer wants to invest in staff development for fear that the newly developed staff will either proactively choose to pursue their ambitions elsewhere, or will have their head turned by attractive offers from other companies. This acts as a clear disincentive to companies who might think about developing or investing in their employees, or adopting working practices which would flag up individuals as ‘high performers’.

This paradox was identified as an issue by a particularly large proportion of interviewees with links to smaller firms in the fabrication and engineering sectors. For many graduate engineers, there is a clear impetus to work towards chartered status. However, for many young engineers, the prospect of doing so in a smaller company is virtually non-existent, despite the benefits which interviewees claimed were a part of working within a smaller workforce (e.g. greater personal attention etc). Whilst small companies value enormously

the chartered status of engineers, few such companies are able to offer the breadth of experiences required to achieve chartered status. One interviewee mentioned that an informal concordat had previously existed between certain companies, who would 'rotate' their graduate engineers with a view to increasing the likelihood of each company gaining chartered status for their graduate(s) by offering them placements within companies whose slightly different focus allowed the graduate to expand their portfolio of skills.

Although this was a relationship of mutual benefit which ultimately served the interests of all parties involved, the conventions underpinning the informal relationship have become increasingly untenable as the industry becomes ever more competitive. As a result, a number of interviewees advocated some type of formal anti-poaching agreement to which smaller companies could sign up with a view to providing their graduate engineers with as rounded as possible an experience.

> [If an] ambitious engineer joins us and he wants to become a chartered mechanical, chartered electrical engineer, how do we do it in a small company? […] [If] we have an agreement with other companies – non-compete agreements; non-poaching agreements – Bloggs Junior can go out for three months and be seconded to another company and get another set of skills, go to another company and get another set of skills and Bloggs Junior can get all the skills he needs to become a chartered engineer.

Although the need to rotate staff is clearly more important for aspiring graduate engineers than for non-chartered occupations, the need for some form of anti-poaching agreement at a wider industry level was advocated by a number of interviewees. It was claimed that the issue had previously been investigated by Scottish Enterprise Grampian, but although the report had garnered significant support within the industry, no firm proposals ever emerged.

> It's ridiculous we don't have a [non-poaching] mechanism in a very wealthy industry like this […] Scottish Enterprise did trot round with an idea saying: "How about a scheme where young graduates would come into your company to get whatever

> skills that you're particularly good at in this company?" Everybody said it was a brilliant idea; said it was great; this is wonderful; this is going to make a real difference to skills. [Scottish Enterprise Grampian] wrote the report and […] nothing ever happened, nobody followed up. It just disappeared.

A further issue which appears to be a specific issue for the oil and gas industry is the prevalence of contract work. A significant proportion of the industry is composed of independent contractors or companies working to contract (who may, in turn, employ independent sub-contractors to deliver upon their commitments). In some cases, this is through choice, with many employees leaving larger, more bureaucratic companies to set up innovative, niche solution companies. On the other hand, several of the larger exploration and production companies were thought to actively favour 'running light' in order to reduce overheads and standing costs. The result is that a considerable proportion of the labour force in the oil and gas industry is composed of workers (at all skill levels) whose employers often have no long-term commitment to or interest in the development of their skillset. As interviewees explained, there was no real interest in developing the skills (or individuals' awareness and utilisation thereof) if that contractor was going to be employed by a market competitor in six months' time.

> {Many operators] have reduced their manpower in their organisations. And the result of that is that […] the customer will run at a fairly low manning level and then he'll basically hire in this experience to oversee the work that the contractor is doing […] We also found that those companies were starting to take people from the contractors level to introduce them into that intermediate level which started taking away a lot of the experience, particularly in the engineering side from us.

All of this contributed to a significant short-termism in the industry. A number of interviewees argued that this only served to compound an already existing problem: as the initial forecasts for the longevity of the oil and gas industry in the North Sea were so poor, there was little commitment to developing people or implementing long-term skills strategies when there was a 'gold rush' feeling in the early days of the industry.

> One of the criticisms of the oil industry […] is the fact that we threw money at it in the 80s and 90s. Because it had such a short duration, why would you train people?

5.1.6.2 Lack of Competence Frameworks

Another prominent barrier to skills utilisation identified was the natural inversion of a factor identified as a considerable skills utilisation enabler in the previous section. Thus, whilst competence frameworks were thought to greatly facilitate better skills use, so the absence of transferability and industry-wide standards in terms of competence frameworks posed a significant barrier. Indeed, some interviewees also identified that their own company was yet to develop a satisfactory working competence framework. Given the reluctance of some companies to share the competence frameworks which they have developed and have found to work well, it is clear that an issue exists in relation to recording and better understanding employees' skillsets.

> One of the difficult things that we're not very clever on is when it comes to competence and what is people's experience, the type of work they've done, what they've been involved with over the years. We've made several attempts to try and capture all that, and every time we think we've captured it, within two to three years it dies because we've not managed to keep it going. And it's very, very difficult to keep that up and running.

One possible example of best practice came from a company which assesses and records key staff competencies through the assessment and awarding of nationally recognised qualifications. In addition to providing a structured and easily quantifiable approach to the recording of key skills, such a system is also strengthened by the objective scrutiny that accreditation to offer SNVQs requires.

> There are processes and procedures that have to be followed, and we as a company we're now accredited to offer SNVQs. That's how we're monitoring our competence assurance of the people offshore. Rather than use an in-house system which can be open to question with its credibility, we have an externally verified system.

5.1.6.3 Cost of Effective Skills Utilisation

Clearly, the above approach to demonstrating competence would not be suitable for smaller companies or those with limited resources, but it serves to demonstrate that models of good practice exist. It does, however, raise the issue of the cost of implementing skills utilisation practices, which also served to act as a barrier to adopting better skills practice. In some cases, the move towards greater flexibility was thought to be associated with higher staffing levels (although the literature suggests that the opposite can often be true).

> Obviously, there is an expensive side to it […] We've actually got overmanned crews, so we have that extra little bit of flexibility built in there.

Regardless of the accuracy of specific interviewees' understanding of the likely resource commitment of putting in place skills utilisation practices, their concerns highlight the fact that any significant change to human resource practices or workplace organisation necessarily involves a degree of expenditure which serves to act as a disincentive, particularly when the industry was thought to be in a trough.

However, this point also served to demonstrate another paradox within the industry's commitment to skills utilisation or development. A large majority of interviewees either raised a tension between the availability of time and money for skills development / utilisation, or recognised the tension when it was raised by the research team. As outlined in the section on our initial consultation interviews, this tension boiled down to the belief that during the times when the industry is in a trough, there is rarely sufficient money available to invest in skills, whilst there is rarely sufficient time to allow for a change to skills strategy during times when the industry is at a peak.

5.1.6.4 Lack of Employee Initiative / Enthusiasm

The final barrier identified again linked back to the earlier theme of a lack of motivation. Whilst much of the literature focuses upon the actions which must be taken by employers (even where interventions take place at an individual level), there remains an onus upon employees themselves to show willingness to utilise their skills differently (with a view to doing so more effectively).

However, it was stated by a small number of interviewees that employees rarely showed much initiative or enthusiasm in relation to changing the way they use their skills. As identified above, stakeholder buy-in is important not only among supervisors, leaders, managers and executive, but it is also important from the employees themselves. In this respect, whilst most interviewees appeared happy with the latent receptiveness of their employees to the concept of skills utilisation, there was not thought to be significant demand for it. Generally, this appeared to be reflective of a more general sense of antipathy (or lack of motivation) on the part of employees in relation to challenging themselves to perform at a higher level.

> Personal initiative… We're very much encouraging people to come forward. We have an educational assistance scheme – which is becoming more and more popular – whereby people can request company support to go on educational courses and programmes which can be linked back to their roles, but may not be specifically related to them. We've got people ranging from diplomas through to MBAs […] [But] we do rely on people using their own initiative and looking at areas that they have an interest in and them coming forward with a proposal to us.

5.1.7 Matching Skills to Business Needs

The final issue covered in the first section of the topic guide was the efforts made by interviewees' companies to match skills to business needs. In the first instance, the section aimed to identify whether there was any strategic direction to the skills sought, developed and utilised by companies and, if so, how this was achieved.

There was little evidence of specific skills being matched to business needs. However, this tended to reflect a general tension within the industry between its ability to identify and articulate the skills it needs and the lead-in time required by universities and colleges to deliver those skills. Firstly, there was thought to be a key problem in terms of the industry as a whole being able to coherently articulate its needs to providers of education, due to the enormous diversity of companies working in the industry and the vastly differing priorities which each of these companies has.

> I would suspect that not one single university, even in Aberdeen, knows what we really want because we can't really articulate it clearly enough. And even when we do, probably not enough of us come together to say: “This is what a mechanical engineer will do”. […] I think that we often get together and say: “We need more of these” and “we need more of that”, but I'm not entirely sure we say why.

However, when the industry is able to identify specific needs, the ability to plan for the future is often extremely difficult due to the inherent variability of the price of oil.

> We're a very reactive industry. We don’t have a long planning cycle anymore. We're very oil price governed, very market driven […] Everybody will have a three to five year plan [but] most people are working on a three to five month plan. You have a business plan for the year, and you’ll have a longer term outlook, but do we have a five year plan to say this is where our organisation should be in five years? Financially, yes. We have some kind of idea what the skills profile will need to look like based on that, but right now are we in a position to actually effect that change? Can we start recruiting now for something that might happen in three years time? No. We don’t have that sort of capacity or safety net financially to do that.

These fluctuations, combined with ever-changing strategic priorities and judgements as to the financial viability of drilling specific reserves, means that identifying and articulating long-term skills need forecast is very difficult. As such, what appears to have happened previously is that universities and colleges have adapted their student intake and course content with a view to meeting the demands of the oil and gas industry, only for the graduates to find that the market conditions and employment prospects have altered significantly in the intervening period.

> We get more people coming out with this degree but what tends to happen is that it's four years ago we needed those! […] So I think our planning side will get in the way of communicating clearly to universities and other educational establishments.

As a result, the industry's reliance upon contractors is strengthened yet further, due to the fact that they are better able to supply the requisite skills at considerably shorter notice than is the case for education providers. This also gives companies a sense of greater choice, with the employment market thought to encourage high performers to stand out. This also gives companies the ability to downsize at relatively short notice when – as identified above – the industry begins to contract.

> I have lots of sub-contracted organisations […] To an extent, that's a big advantage. I find it's easier to hire and fire when they're at that distance. If I don't like the way somebody is working or to mould an organisation it's a lot quicker to get a small company to do that.

Where such contractors are not available or are unviable financially, interviewees explained that the next step is typically to seek that 'instant gratification' elsewhere, often by attempting to 'poach' permanent employees from other companies operating in the same market. Again though, this approach frustrates any efforts to put in place a genuine forecast of skills needs. Interviewees were quick to recognise this, and agreed that the current approach has significant flaws which do not nurture any long-term skills strategy.

> One of the issues, particularly over the last few years when the industry's been very busy, is that you need <u>people,</u> and the obvious place to go for them is our competitors. And all that does is it starts a feeding frenzy and we take five of their guys and they take seven of our guys. You end up in this round-and-round loop, and all it does is it increases people's salaries and increases the contractors' day rates and, at the end of the day, the net gain is zero.

Despite this recognition, the difficulties inherent in relying upon a longer-term strategy remain sufficiently pervasive to dissuade companies from doing so, with the preference being to seek the requisite levels of experience (or as close as possible) in untapped markets elsewhere, sometimes involving transformation programmes for employees drawn from other industries when no suitably skilled or experienced candidates are readily available.

> We opened up an office in Canada about three years ago. We also opened up a small office in Moscow to try and get some people coming in there. We've also taken a view that rather than us all fishing in the same pond, we would go outwith the industry for certain categories of people […] We know there is a skill pool there and we know there is good experience and we're prepared to take on relatively experienced guys that have maybe been five, ten years out of our industry.
>
> Decommissioning is a bit like El Dorado: it's been talked about for years and years […] and it's never actually come to much. It has to happen at some time. I think the question is will it be in two years' time or will it be in ten years' time? That's a bit difficult. So we're very much focused on our core expertise at the moment and doing what we know.

As such, companies tend to remain focussed upon their current core skills requirements rather than looking too far into the future. Although this undeniably has implications for the development of a longitudinal skills strategy, it is not necessarily the case that all skills utilisation relies upon this type of forecasting. Indeed, many skills utilisation practices can be significantly more short-term than that. On that note, it is to the discussion of interviewees' experiences of skills utilisation practices that the analysis now turns.

5.2 Motivating and Encouraging Individual Employees

Having discussed the background to skills utilisation, interviewees were subsequently asked to provide further details on specific skills utilisation practices. In accordance with the Scottish Government's definition of skills utilisation, we distinguish between individual-level practices and workplace-level practices. This section focuses upon the former of the two categories, which aims to ensure that employees can be described as 'confident, motivated and relevantly skilled individuals who are aware of the skills they possess and know how to best use them in the workplace' (Scottish Government, 2010). Workplace-level skills utilisation practices are dealt with in the next section.

The literature review identified a number of Skills Utilisation Practices (SUPs) which relate to this aspect of skills utilisation. These were:

- Linking business strategy with specific skills
- Regular review of training needs
- Training to perform multiple jobs
- Liaison with HEIs / FEIs to ensure graduate suitability
- Mentoring
- Learning transfer
- Induction
- Personal Development Plans

Each of these was discussed with interviewees, although time restrictions meant that it was only possible to discuss in depth those practices of which interviewees had direct experience. In each case, interviewees were asked to describe any experiences of the different practices, including their strengths and weaknesses, how widespread they are throughout the industry and whether it would be possible for them to be implemented elsewhere in the industry. Where interviewees had no experience of a specific practice, interviewees were asked to consider the practice in principle, thinking hypothetically about how appropriate it would be to put in place this practice in the oil and gas industry. This section therefore aims to provide an overview of the current levels of usage of specific Skills Utilisation Practices within the industry, as well as providing an overview of the potential impact of currently unused SUPs.

5.2.1 Linking Business Strategy with Specific Skills

As outlined above in the section on barriers to skills utilisation, the industry faces difficulties in trying to match business strategy to specific skills needs. Although the difficulties in the previous section emanated from an inability on the part of the industry as a whole to articulate specific skills needs, the same type of difficulty often seemed to be experienced at company level. Due to the difficulty involved in clearly articulating future skills needs, there was little evidence in interviews of companies with experience of having done so.

A small number of interviewees did not see this as a problem, arguing that core competencies and attitudes were more important than specific skills. It was, however, emphasised that this only covered staff at management levels: at the 'pointy end' of the industry, skills remained absolutely crucial.

> If you look at the organisation […] [and] the people in there, a lot of them don't have the right technical skills. They're doing projects and operations which are completely different: there's guys who are topside engineers and they're running subsea projects for me because they were the right people […] This only works at management level: once you get down to the nitty-gritty coalface of actually turning valves or diving operations […] then you need people who skilled in those trades, without a doubt.

However, due to the difficulty inherent firstly in articulating skills needs and secondly in accessing those skills at the right time, discussions in this area reiterated the findings laid out above in relation to barriers to skills utilisation: namely, that a reactive, short-term approach based upon contracting temporary staff and poaching permanent staff was generally preferable to taking a longer-term approach to skills development and utilisation.

5.2.2 Regular Review of Employees' Training Needs

Having a regular review of employee's training needs was identified by the literature review as an important means of keeping track of employees' skillsets with a view to ensuring that skills are not under-utilised and that unreasonable demands are not made of employees relative to their skillsets.

Generally, some form of regular review was extremely common in our interviews, and it was further argued to be similarly commonplace throughout the industry by interviewees. Regular reviews formed a key component of companies' HR policies, allowing employees to discuss with their employers any issues relating to training, ambitions and grievances, among other things. The frequency of these reviews varied across and within companies, with different companies conducting reviews more regularly than others, and certain grades

or types of employee undergoing reviews more frequently than others. On average, these reviews tended to take place either once every six months or once every year.

> You do a full annual review and assessment and appraisal, and a six monthly review as well. So every six months, you're talking about their training, their goals, their ambitions, and so it's very regular and very rigorously done as well. It's never missed.

Interviewees were extremely positive about the value of having these reviews, arguing that they represented an important opportunity for employers to keep in touch with their employees and for employees to raise any issues with their employers. However, although evidence showed that these reviews were relatively frequent, the primary focus of most of these meetings appeared to be employees' performance.

> One of the big drives that we have every year is that everybody in the company goes through their annual performance review […] and that drives what they've done that year, what do they want to do in the next one to two years, what would they like to do in the longer term of three years plus.

Despite this being the principal focus, in many cases there was also a peripheral focus upon their training needs, allowing companies to keep tabs of skills needs at an individual and a collective level.

> We also try and use that as the tool to identify any particular additional training skills that somebody would like to get as well […] We can then see that 20 people want to do an introductory project management course or 50 people want to do Excel training or something like that and then we consolidate all of that. Then we take a view on what we can do internally training-wise and what we are prepared to go for externally in training in order to help people develop and develop their career path.

On this basis that these reviews were so ingrained within the HR approach of most companies, many interviewees felt that they had little to learn in relation to reviewing employees' training needs.

5.2.3 Training to Perform Multiple Jobs

Whilst a review of employees' training needs was relatively uncontroversial, there was a far greater degree of debate in relation to the idea that employees might be trained to perform multiple jobs with a view to delivering greater flexibility in the human capital available to employers.

Most interviewees had not introduced any formal system of multi-skilling. This was typically because of concerns over an excessive dilution of people's skills, with interviewees claiming that it was dangerous to spread people's aptitudes too thinly. Some companies were keen to see their employees use different skills, but they made it clear that it could be dangerous to expect everybody to be equally proficient in multiple roles.

> Can you get a multi discipline? […] I'm always reluctant to take it away from the base trade: that's what you're competent and skilled to do. You start mixing it across the pieces, and you're getting into dangerous ground […] I'm just a traditionalist as far as that's concerned, I just think it dilutes it even further, and it's a recipe for things to go wrong.

As such, most interviewees who had not adopted a multi-skilling approach were extremely sceptical that the benefits would outweigh the risks. As such, in the absence of evidence from the oil and gas industry to suggest that it would work, these interviewees were very cautious about the idea of participating in a multi-skilling pilot or intervention.

Other interviewees offered similar opinions, but argued that so long as expectations of employees asked to perform multiple jobs were not unreasonable, it was possible for them to have a lead specialism in one area, and the ability to provide operational support in other areas.

> You have to be very careful with the whole multi-skilling process, because […] experience shows that in the majority of cases you can actually be skilled in one area, [and] can act as an assistant in the other areas, as a support role. One of the biggest problems that has come about through the whole multi-skilling process is

> trying to make somebody an expert in many areas. That's where it falls down. I would suggest that you could perhaps be a lead person in one skill and a support person in several others as opposed to being a lead in several.

This view was shared by the majority of interviewees, although it should be noted that many also believed that it was possible for staff at supervisory, managerial or executive levels to combine different roles. Maintaining the requisite degree of proficiency across several disciplines 'at the coalface' was seen to be much more difficult and inherently more risky, given the potential problems which could be caused by having employees working with equipment with which they do not work on a daily basis.

> It is possible… Typically, at supervisory level, you get electrical and instrument supervisors, because the two interconnect. Then you've got mechanical [supervisors], so you can get mechanical construction, piping. You can do it more at a supervisory level. When you're actually on the tools, it's harder.

Although this was the majority view, it was not unanimous. A small number of companies were very strong advocates of the multi-skilling approach, arguing that they have had significant success in their efforts. One of the most attractive benefits was the ability to have a more flexible offshore crew, where pressure for bed space is often extremely high.

> [Multi-skilling] is one of the things that we've pushed quite hard since we took over the *<name removed>* field from *<name removed>* back in 2004 […] One of the things we deliberately did was made people move into multi skilling, so an electrician will have to be dual skilled as a production technician as well. So everyone is now expected to have at least two core skills. We run fairly 'lean and light', and always probably a man short. [We] tend to follow the kind of path where we'll employ five, work them like ten, and pay them like eight.

> [The work is] exceptionally high-skilled. The big constraint in any offshore operation is bed space offshore. And there's very little space even for trainees, every bed space

> is taken up and has to be usefully employed and get productive hours out of it, so everyone is out there with a particular skill or specialisation.

Typically, this endorsement of multi-skilling was offered by companies who took a less orthodox view of organisational structures, with a strong correlation between multi-skilling and a greater willingness to offer more autonomy to workers. It was argued that the type of objections voiced by other companies are not based in reality, and often derive from a lack of trust in or knowledge of their employees' skills.

> People like to make things more difficult than they are, or make their jobs sound more difficult than they are. And therefore it's not possible to do more than one thing, and it <u>is</u> […] The idea of multi skilling is the same; it's purely an attitude, it's an approach. I don't see any issue about that at all.

Even among the companies who had experience of multi-skilling, it was recognised that there were probably limits to the extent of degree-switching which was feasible. While 'cross-pollination' of ideas was seen as normatively desirable, it was also asserted that most multi-skilling takes place within a fairly narrow spectrum.

> We tend to encourage people to move […] for cross-pollination of good ideas and different approaches, but people don't tend to jump disciplines quite so much. You might combine disciplines in order to reduce the manpower, that process or production technician with an electrician but there's no campaign, no definitive programme to make people do that.

Our interviews suggest that the industry's experience of multi-skilling has been patchy. There was significant uncertainty among many interviewees as to whether true multi-skilling was feasible and desirable within an oil and gas setting. Although they did not rule out the possibility altogether, they were firm in their assertion that there was currently too little evidence of multi-skilling in the industry and as such, adopting it was too risky to contemplate. However, a small number of companies do claim to have used multi-skilling, and, furthermore, claim to have derived significant business benefits from this.

5.2.4 Liaison with HEIs / FEIs to Ensure Graduate Suitability

As outlined above, many interviewees argued that there are inherent difficulties in relying upon colleges and universities to provide them with the skills they require. In the first instance, identifying and articulating industry needs were seen as difficult at the aggregate level, whilst the lead-in time required to provide people with the educational skills was also seen as a barrier to reliance upon FEIs / HEIs. Rather, the preference is to rely upon contractors or to recruit employees with the requisite combination of skills and experience.

However, contractors and skilled and experienced staff do not simply 'emerge' into the workforce. Although many of them were long-standing employees who entered the industry during its early days – when it is argued that there was less emphasis upon skills and experience – it is also the case that many employees enter the industry from further / higher education, and subsequently gain the experience which so many employers find attractive when looking for a 'ready-made' solution to a skills gap.

> Everybody knows we need to do something, but nobody really knows <u>what</u> we need to do. My experience is that we cannot communicate clearly enough as a collective to say: "this is what we need as an industry". Because we don't know! We don't do that collective work.

Interviewees were therefore asked to identify and expand upon any efforts made to improve the lines of communication between them and colleges and universities. A very small number of companies had links with colleges and universities, although typically the relationship was simply one of access rather than influence. As such, companies were allowed access to the students in order to look for the most able future graduates, rather than being given any sense of influence in being able to make course content requests or recommendations to colleges and / or universities.

> We have a very close dialogue, certainly with the engineering department in Aberdeen University. I think two years ago in total we took on something in the order of 40 graduates, of which purely in the UK there was probably just under ten

> or something like that […] There'd be two or three from the States, four or five from Singapore and that sort of split. Last year we didn't take on any because of the downturn in the industry […] [The] tone has been to maintain close contact with the universities to try and identify as early as possible and certainly to start our graduate interviews before the rest of the industry would do it […] This year, [we will be] taking on some commercial graduates as well; some financial graduates in addition to just purely engineering ones.
>
> Universities we work with all the time. We're permanently talking […] We have all kinds of discussions as well with secondary schools, councils and accreditation bodies […] We also work with local colleges, so we have fingers in a lot of different pies in lots of different areas […] If we can get into these educational establishments at an early stage, you can start making people aware of <*company name removed*> then hopefully become an employer of choice, rather than somebody who's picking up those who have perhaps been unsuccessful elsewhere.

Around half of the companies we interviewed regularly took on student placements, most often through the Robert Gordon University. Again, this was seen as a valuable service which provided benefit to all parties concerned: the student was able to build up valuable pre-graduation workplace experience and – in some cases – a valuable 'foot in the door' to employment after graduation. Employers benefitted from this due to the additional labour this provided, plus also being given the opportunity to sell their company to students.

> We take student placements here […] We take HR people; we take in engineering people. We take in schools: y'know, you get the week from school into engineering […] We do all that good stuff but does it do any good? I don't know, I honestly don't know […] I don't think it does any harm and I think it opens a few people's eyes.

Beyond this level of relationship, many interviewees made little effort to increase their level of dialogue with colleges and universities. This was based upon their belief that similar efforts made in the past had met with little success. Previous experience – either direct or reported by others – had dissuade them from engaging directly with colleges and

universities, or entering into any form of liaison body. The common theme was one of lip service: whilst employers saw a benefit in principle to participating in a dialogue, their experiences of doing so in the past had not been positive, partly because of a lack of wider buy-in from industry, a lack of leadership from colleges and universities, and a perceived lack of action on their part when employers provided advice or recommendations.

> Should we liaise more? […] It's nice words but people don't listen.

> The universities should be taking a lead, and bloody well make those things happen every six months, and get a far wider audience of MDs interested.

> [Dialogue with HEIs] is perceived as lip service. There's a thing called the Industrial Board […] it was meant to be [i.e. meet] every six months, and I reckon if there's one every two years, that's not exaggerating […] I just felt this was a complete waste of time […] There should be a top level industrial board with principles and goals and aims set out but then beneath that, there should be active working groups of what sort of products and projects are relevant to your companies and then directing that back into your engineering school so you've got certain third year or PhD students doing that sort of work.

The result of this was that degrees were seen by a number of interviewees as being poorly calibrated, tending to be either far too general or far too specific, as this interviewee – with a specific interest in engineering – explained:

> We're getting general degrees which are too low a level to be much good, we're getting specific degrees which are too specific. I'd like to see something in between where there was a better balance of different engineering skills for particular sorts of industry sector or something. At the moment, it's either very general or very specific and I think that's where we always have problems.

Most interviewees raising this type of concern felt that the onus for facilitating a dialogue and redressing the balance lay in the first instance with universities, as it was the 'product'

they were marketing which did not meet with the industry's needs. However, this proactive approach on the part of colleges and universities was not thought to be taking place at the moment. As one interviewee with previous experience of the Offshore Contractors Association's Employment Practices Committee explained:

> Nobody's ever said: 'Oh, I had Aberdeen University knocking on my door saying what do you need for mechanical engineers'. […] It's like all academic things, it's hand me down, we'll have what they think that we should have.

However, NE Scotland was not thought to be unique in this respect. Indeed, a number of interviewees with wider experience of dialogue between employers and academia argued that the problem of poor relationships between employers and their local education providers existed across the UK and not simply in Aberdeen. One interviewee argued that very few companies had any sort of links with their local universities, and that this should be addressed.

> That figure [i.e. of companies with links to local universities] should go to 50% and then you might start getting things moving. It would be better for the universities, better for the students, better for the skills and better for the country. If you want to get the right skillsets out of university, you need to know who your customer base is. I'm your customer base and we're not talking to each other […] I'm running a high tech industrial company [and] need your people but they don't fit because we haven't been talking.

Problems were also thought to exist as a result of the different industry bodies, Sector Skills Councils and individual companies pulling in different directions. Furthermore, the focus upon bodies like SSCs was thought by some interviewees to have resulted in too much of a focus upon the purely technical side of the industry (whether offshore or onshore) and not enough upon some of the non-technical skills which were required.

> The bottom line is that we have a skills sector council setup in the UK that doesn't make sense […] You've got too many chief executives driving too many different

> skills agendas […] We don't have an aligned approach; we don't have a clear approach on what these guys [i.e. skills bodies] are delivering to us. They don't work in any shape or form in a collaborative manner.
>
> We don't speak about our real skills needs in the right way […] There's too much focus on technical skill. It's a big issue. Yes, we're a technical industry, but we don't just run on technical people.

On the basis of these comments, there is clearly a need for better dialogue between industry and providers of education, although this need is not exclusive to Aberdeen. The dependence of the oil and gas industry upon skilled and semi-skilled graduates and tradespeople from universities and colleges mean that this was seen as a priority by a number of our interviewees. However, it must be borne in mind that fundamental difficulties exist in terms of needs identification and articulation, as well as the time required by education providers to deliver skills. Whilst there appears to be no straightforward solution to this problem, there appeared to be genuine enthusiasm among employers for an industry-academia forum – or perhaps several, reflecting the different industry sectors – in order to discuss avenues for improvement.

5.2.5 Mentoring

A further individual-level means of improving skills utilisation identified in the literature review is the use of mentoring to improve knowledge and skills transfer. Interviewees were asked whether they used mentoring programmes in their company and, if so, how well they worked. If not, interviewees were asked to elaborate on why this was the case.

Virtually every interviewee said that their company had in place some form of mentoring scheme, whether formal or informal. Indeed, most placed an extremely high value upon the need to mentor new recruits to the interview; particularly younger recruits.

> Every new employee that we take in, we identify a mentor to see them through the first few months of their introduction to the company. For our graduates it's a bit longer-term than that.

Based upon the 'demographic time-bomb' discussed in an earlier section, many interviewees saw mentoring as the only way to address issues of inter-generational skills transfer. As outlined above, there exists significant skewing in the industry age demographic, with the largest proportion of employees believed to belong to either the very oldest or very youngest age brackets. The generation gap between the two meant that the imminent retirement of many of the 'Generation Xers' would leave the industry facing enormous skills shortages.

> There's a slightly skewed demographic in *<oilfield name removed>* because people have stayed with the same platform all their lives. So they're all getting a bit old, but we are doing something about it: we are bringing new technicians in to make up for that. And they're being mentored by the older guys.

However, as identified earlier, many interviewees claimed that whilst mentoring schemes were commonplace, effective mentoring schemes were few and far between. There was thought to be a huge lack of rigour in approaches to mentoring. Many of the industry's current Generation X mentors acquired their skills in a very different environment to the one in which the current crop of Generation Z recruits acquire theirs. As few mentors had ever received any formal training in mentoring, it was felt that they often passed on bad habits to new recruits.

> We're really pushing very strongly this process of getting the older, more experienced people to mentor and coach the younger people, but by the same token we have to make sure that they're teaching them the right things.

There was also a concern that untrained mentors tend to use the same mentoring style which was applied to them when they were new recruits. In other words, without some form of intervention to provide some degree of rigour to mentoring, many of the same mistakes (in terms of the message communicated and the method used to communicate it) were perpetuated across age groups.

> Yes, we have a mentors' programme. We do a mentoring right through the piece. So if you're a graduate coming in, you have a mentor. We don't just say: 'You're a mentor; go and mentor'. We actually train people to be mentors. You're just expected to have someone that's skilled; it makes you a good mentor.

Again, there was a clear enthusiasm among interviewees for assistance with mentoring. It is the approach of choice for companies seeking to address problems of inter-generational skills transfer and succession planning. However, there is a clear lack of rigour within the industry in terms of approaches to mentoring, with many companies keen to obtain assistance in relation to the efforts they are making.

5.2.6 Learning Transfer

The idea of ensuring that the results of learning and / or development are implemented into an employee's work is another key individual-level practice identified by the literature review. In short, this approach is intended to ensure that skills culture moves away from a 'tick box' culture towards one in which training is constructive and effective.

Most interviewees recognised the ideas underlying learning transfer, although very few recognised the concept using that name. Many believed that the name was simply a fancy label for a common-sense approach to training methods. A large majority of our interviewees claimed that their company took steps to ensure that training was not simply a tick-box exercise and that any tangible results of training were incorporated into employees' regular working patterns.

This commitment was thought to be the result of two general points. Firstly, the cost of training within the oil and gas industry was seen to be particularly expensive, meaning that companies were not keen on sending employees for training which might be construed as frivolous.

> Typically, if we send somebody away on a course or they do attend a conference, then we would look for feedback. They get the standard feedback form and all that type of thing but we would expect their line managers to debrief them and find out

> what happened, what they got out of it and what they didn't get out of it because it will give us an indicator for the future as well: would you send somebody else on it? […] These courses are not cheap!

Indeed, a number of interviewees explained that in an effort to break away from any possibility of inconsequential training, they had developed their own extremely focussed and targeted internal training courses.

> We've developed our own internal learning and development programmes […] What we've actually found is that external courses don't generally provide us with what we were expecting to get from them in that they are too general, they're not specific to our needs […] Say they're going on a three-day course, the consistent feedback was: "Yeah, fine. That was a very interesting course, but at the end of the day it was probably a day's work that was applicable to me and where I could see a use". We decided about three to four years ago that we would try and concentrate on developing internal courses […] The company would actually look into: "Okay, what's the content of that course? These things are not relevant to us so we won't do that. We'll do these and we'll add in this". […] We target that to various disciplines from engineering to finance to supply chain, project management. All these guys have got their own thing.

The second reason for the apparent commitment to learning transfer was the reactive nature of training in the industry. Training is typically driven by a specific need, which ensures that the results of training are a central part of employees' work, whether an explicit commitment has been made to this or not. Two needs were typically thought to drive training in the industry. Firstly, there was often a need to achieve certification or accreditation to use some form of new equipment or suchlike. Interviewees explained that this type of training would only be required if the employee in question was likely to be using that equipment on a regular basis. As such, it was inevitable that some degree of learning transfer would take place organically. Secondly, the prominence of legislative and / or regulatory frameworks in the oil and gas industry meant that much of the training was focussed upon achieving compliance. Whilst it is expected that some of this training (e.g.

helicopter escape training) is unlikely to form a regular part of everyday work, other types of training of this nature (e.g. compliance with Good Laboratory Practice or ISO 9000) would be expected to inform employees' actions.

> A significant proportion of our training is legislatively driven: for example, survival training, emergency response, fire fighting, things like that. That is checked on a regular basis from exercises. With regard to technical or developmental training then again we can tie that back into the whole assessment process, the competence process that we have. As I say, we work for training on the competence assurance system very closely together, so that the one can identify deficiencies or strengths in the other.

On this basis, learning transfer was another practice which was already thought to be widely used in the oil and gas industry. Furthermore, the drivers of training within the industry ensured that learning transfer not only took place, but did so effectively.

5.2.7 Induction

Putting in place some form of induction process was seen to be a useful practice in helping to introduce employees to a new organisation and – particularly in the case of organisations already understood to be High Performance Workplaces – to ensure that new recruits understand the different demands placed upon them in their new environment.

The overwhelming majority of our interviewees already have in place some form of induction process for new employees. These processes varied widely in terms of their formality, whilst induction processes could even vary within companies depending upon the grade of staff being recruited. For example, most companies hiring graduates direct from universities or taking on trainees directly from colleges would put in place a formal, structured induction process which would often take place over the course of six months to a year. For higher grade technical staff, inductions tended to be more informal as new recruits at this level were generally expected to be seasoned professionals within their particular niche already.

> At the moment we have a very brief one [i.e. induction process] but we're in the process of developing a more extended one, and we're also just in the process of finalising an induction programme for apprentice trainees.

In addition to inductions, a number of interviewees also mentioned that similar attention was also paid to those employees who had chosen to leave their company. In particular, exit interviews were used to determine the reason for their departure and what action the company could take in future to prevent similar losses in future.

> We were losing quite a lot of people at one stage - was to start doing exit interviews so that we can try and establish why are you leaving? Is it purely money? Is it because the offices are crap? Is it because you don't like the people that you're working with? You don't see a career progression?

Overall, inductions were seen as a common and relatively low-cost practice to implement. Although they required a small degree of investment in terms of time and money, this was believed to be greatly outweighed by the potential costs involved in providing new recruits with a process of 'grounding' with their new employer. However, interviewees tended to believe that induction was not in itself a significant contribution to skills utilisation, but rather a process which greatly facilitates skills utilisation. In this respect, no interviewees believed that they would benefit significantly from a pilot or intervention based around induction processes.

5.2.8 Use of Personal Development Plans

The use of personal development plans was also identified earlier as an individual-level practice which can contribute to better skills utilisation. Our interviews suggested that in practice, there is little distinction between the process used to capture employees' personal development aspirations and the review of any training needs they may have (see above). As such, personal development plans were seen in the same generally benevolent terms as the review of employee's training needs.

However, a very small number of interviewees felt that there was often a tension between the idea of boundless personal development and the realities of working in the oil and gas industry.

> While it's nice to engage employees and to have them on a nice career path and progressing and all that type of thing, we've also got to a) achieve a profit or we go under, b) achieve returns for the shareholders and plc, and c) we have to deliver to our clients. If we don't deliver to our clients, then somebody else will, so we're a very competitive environment […] What people's aspirations are and what we can actually give can be two entirely different things.

This tension again served to emphasise the crucial role played by motivation, regardless of the source of this motivation. Ensuring that employees remain motivated even when they realise that there are limits to the extent to which they can develop within the industry was seen as vital, whether emanating from proficient supervisors, leaders and managers or from greater empowerment of employees.

> People will be given jobs to do that they don't particularly find very exciting, fulfilling etc. However, they have to get over that because this is the real world of work and you're not always going to get to do what you want, when you want […] Does that tie into productivity? Yes, it can, because it can demotivate people […] That is the intractable problem we have then of managers and supervisors doing what they should do and actually, how do they lift that level.

Furthermore, the prevalence of contractors throughout the industry again meant that personal development reviews or places were not seen as being a sensible use of time and / or money for many employees. As a result, the companies which <u>do</u> engage in personal development reviews or plans tend to restrict them to permanent staff, whether in exploration and production or supply chain roles.

> We do PDRs (Personal Development Reviews) for every member of staff every year […] It goes right through onshore, offshore. If we have short term employees that

> maybe do a trip offshore, […] they'll get what's called a first trip assessment. But you're not going to identify training needs for somebody that's going to be with you for two weeks.

Despite this, a majority of interviewees had positive experience of personal development reviews and plans. However, as with the review of employees' training needs, interviewees did not feel that this was an area in which any significant assistance was required.

5.2.9 Other Approaches Relating to Confidence / Motivation etc.

A small number of interviewees also identified one particular additional practice, which they felt contributed towards greater levels of individual confidence and motivation. They mentioned employee surveys as a means to identifying employee concerns. It is not covered in depth here because it is not strictly speaking a skills utilisation practice. Whilst it may be a High Performance Working Practice (see literature review), the survey in and of itself is not a Skills Utilisation Practice. Rather, it is any actions taken as a result of the survey – not the survey itself – which may be thought of as contributing to better use of skills.

> What we've done a couple of times now, probably averaging out every two to three years, is that we've done an employee survey to try and establish the big ticket items that people are concerned about. Is having a decent onsite canteen important? Is having the ability to buy newspapers important? Does it matter if we're stuck in the middle of nowhere rather than the centre of town? […] We've done that a couple of times now and we've taken results from that survey and we've sat down at a management level and considered that and tried to address as much of that as we can.

5.3 Ensuring Workplace Opportunities Exist for Effective Skills Use

After considering individual-level interventions, interviewees were asked to provide further details on specific skills utilisation practices which focus upon improving skills utilisation from a workplace perspective. To quote once more the Scottish Government's definition of skills utilisation, these practices aim to put in place 'workplaces that provide meaningful and

appropriate encouragement, opportunity and support for employees to use their skills effectively' (Scottish Government, 2010).

The literature review identified a number of Skills Utilisation Practices (SUPs) which relate to the workforce dimension of skills utilisation. These practices were:

- Job rotation
- Flexible job descriptions
- Cross-function teams
- Self-managed or self-directed (team)working
- "Open Doors" policy
- Rewards for innovation

Again, each of these was discussed with interviewees, with in-depth discussion taking place in relation to those of which interviewees had direct experience. This section therefore aims to provide an overview of the current levels of usage of workplace-level Skills Utilisation Practices in the way that the previous section did for individual-level practices. However, this section adopts a slightly different approach. Whereas the previous section dealt with each of the different SUPs individually, this section treats three SUPs under one heading. Thus, flexible job descriptions, cross-function teams and self-managed or self-directed (team)working are dealt with under a collective heading of 'more autonomous working'. This is due to the fact that arguments for and against adopting these SUPs tended to derive strongly from interviewees' experiences of and opinions on devolving greater levels of autonomy to employees. With a view to avoiding repetition of the same arguments in three separate sections, the arguments for and against the use of these three SUPs is dealt with in one coherent section.

In accordance with the previous section, each of the remaining three workplace-level SUPs is dealt with individually.

5.3.1 Job Rotation

The first workplace-level skills utilisation practice discussed with interviewees was the availability of a job rotation policy in their organisations. This practice aims to provide employees with the opportunity of 'branching out' into another job role or discipline, with the ability to return to their original post at a later date.

Generally, there was very little experience within the industry of job rotation. Where interviewees did have experience of this SUP, it was generally in relation to office-based roles. In this respect, some interviewees spoke of the effects of job rotation in positive terms, arguing that it helped to maintain motivation and employee engagement.

> It's something that we can do and we have done. It has some positive and negative benefits, I think. There's certain jobs you can't rotate: my issue would be about dilution of skills – certainly the technical piece – you are what you are. Maybe in some services like planning and cost or HR and training and things like that; you could retrain a bit more easily.

> We have had some success, particularly in the commercial side where we have taken on commercial graduates that go on a general introductory scheme for the first year that takes them through planning, cost control and also the contracts side.

This was primarily due to the problem (identified above) of dilution of skills and the danger inherent in spreading skills too thinly in an offshore environment, where the stakes are usually far higher than would be the case in an office onshore.

> When you look from a worst case scenario, what happens if that bit goes wrong or that bit goes wrong or that bit goes wrong, all at the same time? […] There is always that risk.

> They [i.e. office staff] are not so hard-edged against the coalface. If they do something wrong, okay, they've done it wrong; it might cost us a bit of money, but they're not going to blow something up. That is a <u>big</u> difference.

As such, there was a general reluctance among employers to endorse the idea of job rotation, arguing that it was appropriate only under certain circumstances. However, it is worth noting that a number of interviewees also identified a degree of scepticism among workers themselves in relation to participating in a job rotation scheme. Generally, it was felt that people in the industry were broadly happy with their lot, and few had any desire to try something new and different when they possibly risked loss of job security and satisfaction, income etc. This conservative approach to job rotation was thought to be particularly pronounced among UK workers.

> I've seen more evidence [of enthusiasm for job rotation] in our Norway office, where people are more comfortable doing fairly radical career changes and I've seen people going from project management into HR. Pigs will fly before somebody would do that in the Aberdeen office. It would be completely unheard of.

This lack of willingness on the part of both employers and employees to consider job rotation initiatives in the UK was thought to result in a 'pigeonholing' of employees, particularly in the technical side of the oil and gas industry, whether onshore or offshore. As a result, both the demand for opportunities to rotate jobs and the supply of opportunities to do so were seen to be of a low magnitude.

> People in the UK seem to have a much more pigeonholed approach in their mind and they say: "I'm an engineer, so the progression should be in engineering and not outside it". […] I think it's a workplace thing in the UK. It's almost a cultural thing.

> It's the same guys from 20 years ago who are still doing it now that said 20 years ago: "'I'm only doing this for another five years and then I'm going to go and do something different". But they find it very, very difficult to change from the path.

Some companies who had tried to implement job rotation policies argued that it had not worked particularly successfully, although there was some lack of clarity in terms of determining whether they were referring to multi-skilling or job rotation.

> We've had fairly limited success, I would say. It's been very, very difficult to get multi-disciplined people […] I think there's a shortage [of people with that level of skills]. I also think a lot of people are fairly negative in entertaining that thought in the first place. We run with a fairly small workforce offshore and they already feel that they're busy enough without being saddled with additional responsibilities.

Despite this, a number of interviewees remained keen on the idea of job rotation in principle, suggesting that job rotation could serve as the next logical step up from multi-skilling. Given the potential for multi-skilling to potentially reduce the number of people required in an operational capacity, many companies were interested to find out more about experiences of job rotation in the oil and gas industry. Many were under the impression that the approach has already been tried unsuccessfully in the field, but were unable to provide details of where exactly this had been seen to be unsuccessful.

> Where we have made a hard effort in order to try and do that is actually offshore where we would like to be in a position that the surveyor that's offshore can mend the ROV and he can also do some work on the deck of the ship and do some painting at the same time […] If we can reduce the number of people that are on board a ship from 100 to 90 by just doing that, for us we'd probably be saving several thousand pounds a day. And if we could do that, I think we would hunt it down, but it's not been very successful so far.

As such, similar to the experience with multi-skilling in the previous section, there was little evidence of successful implementation of job rotation, along with a considerable degree of scepticism in relation to its feasibility in an oil and gas context. Although the 'pigeonholing' effect appears to exert a profound influence on both employers and employees, many interviewees said that they remained open to persuasion if suitable evidence of successful job rotation in the industry could be provided.

5.3.2 More Autonomous Working

By far the most contentious of all the Skills Utilisation Practices that we discussed with interviewees – both individual- and workplace-level practices – was that of self-managed or self-directed working. This practice provoked an extraordinary polarisation of opinions among interviewees, with most arguing that the very notion of autonomous working was entirely incompatible with the oil and gas industry, and others taking the stance that employee autonomy was absolutely central to their (alleged) above-average levels of performance, productivity and motivation.

Most interviewees were very clear from the outset that they were strongly opposed to the idea of increased worker autonomy, in practice if not always in principle. Indeed, the very suggestion provoked a degree of incredulity among some interviewees.

> It's a non starter; let's get real.

> You can quote various things (i.e. examples) about car makers and all that, [but] I've seen the realities of work […] No, I don't buy it.

> You come into the workplace and you've just got freedom to do whatever you want… it doesn't work like that!

> I know the modern philosophy is to rail against command and control and I'm not saying that's right, but people need clear direction. They need to know what they're doing. They need certainty.

Indeed, rather than working towards providing a greater degree of autonomy, many interviewees explained that their companies were moving in the opposite direction and 'proceduralising' all aspects of the work they do. This was particularly true of interviewees with experience of offshore industry sectors, but was also true of onshore supply chain or service companies.

> We engineer and proceduralise the job. We go offshore to do that job. We expect and almost demand that the guys execute the work in accordance with that. If they need to change for whatever reason then they need to go through a process, a management of change process, in order to document and satisfy ourselves that that change is manageable and appropriate.
>
> Where you're in a relatively large organisation, there is a wide variety of people there and there's a place for having a discipline in process to be followed or else people would absolutely be doing their own thing […] I would say that we probably have more of a push to enforce the discipline as to how to do things rather than the other way.

The reason behind this was that past experience was thought to have shown that a lack of procedures or failure to adhere to protocol had led to accidents. In addition, the need for accountability and responsibility in a potentially dangerous and isolated environment meant that the need to have a clear chain of command dominated by a single authority figure often necessitated a hierarchical, top-down approach to managing the industry. In such a scenario, only someone with a wealth of knowledge and experience should be trusted to make the crucial decisions.

> What we've been trying to instil to a certain extent is the importance of following a process […] There's a logic behind why we've been trying to enforce that discipline. Every time we have a screw-up and we look into why it's gone that way, it's invariably because somebody's trying to do a short-cut rather than follow the process.
>
> (The Offshore Installation Manager) looks after that platform and all its activities […] If that thing looks like it's going to blow up, he's in control; he is the man. So they have to go through a very rigorous training programme. If you're in the middle of the North Sea, it's blowing a force 10 and you've got a well that's just blown out and you've got a fire in the production area, what are you going to do? Because it's your

> call; you're the man. So they go through a hell of a lot of training. It's a bit like an airline pilot I think: it's 20 years of boredom and five seconds of sheer terror.

On this basis, a clear majority – around three quarters – of our interviewees made it clear that they did not believe that greater worker autonomy could ever operate safely and effectively in the oil and gas industry. However, the remaining quarter of the companies we interviewed claimed that the objections voiced by companies opposing such initiatives was based upon 'straw man' arguments. Rather than deriving from genuine concern, this opposition was often thought to derive from a fundamental unwillingness to make the investment (in terms of time, money and uncertainty) in a different way of working.

> [Safety] is an excuse. That's not giving people responsibility. That's not delegating; that's protection. It's arrogance as well […] It's all sort of not very subtle things, all mixed up into a clever excuse: it's bollocks. Empower people and you'll be amazed at the results. It spreads like wildfire; a good infection runs through the company: "We're allowed to do things here; we can make our own decisions".

To this end, these interviewees provided examples of the way in which greater worker autonomy had benefited them as a company. In the first instance, each of these interviewees argued strongly that the introduction of greater autonomy had yielded considerable benefits in terms of tapping into people's under-utilised skillsets in general.

> We have a very low level of bureaucracy here, with a high degree of autonomy for people to make decisions in the their own right without having to bounce things up through several layers, which people here certainly find very useful. It makes people's jobs far simpler in that respect.

> There's a massive skill base out there; incredible competence in the North Sea, and yet it's massively under-utilised, because of the decision making processes.

> Empower people, they're far more talented than they appear. Engineers often appear dumb, dozy, mentally retarded but there are skills and talents there which are surprising.

One of the principal ways in which this approach delivered better use of skills was through employees being given the opportunity to draw upon their own skills and knowledge to make decisions which might otherwise have been (unnecessarily) passed up the chain of command, only to be passed back down again in due course. By giving employees a greater stake in the decisions which shape their work, not only was the speed of decision-making though to be greatly improved, but the quality of decisions was also thought to have improved.

> You learn as a manager [at other companies] that if you find a risky decision, rather than take it yourself, you pass it up the chain […] [But] if you pass it on, it becomes a small enough part of that person's portfolio of decision-making that if he got it wrong, it wouldn't affect his job or his boss. So he'd make the decision and it would come all the way back down again, which meant the people at the lowest level weren't used to making decisions. The people who were taking decisions were so far removed from it, that it didn't have any consequences for them

> The decision-making cycle is so much improved by the fact that people take their own decisions, they use their competence and skills, and they're allowed to get on and manage. The worst people ever to tell people what to do are people above you who don't actually fully understand your job, or are less competent than you.

> [Our] OIMs have far more autonomy; far more responsibility. Rather than effectively operating as a mouthpiece, they now have management decisions to make, which means that they can react quicker to situations. It means also that whole decision-making hierarchical process is reduced and speeded up […] That's not to say that we don't have our systems and processes in place. We just empower people to take decisions and work off their own initiative. People know what the parameters are […] So long as they know that and work within that, there's not an issue.

Similarly, the empowerment of employees in this respect was thought to have significant developmental benefits for the employees involved. In short, by giving employees responsibility, they tended to act accordingly, making responsible decisions and surprising a number of people higher up in the chain of command.

> People come and say: "Such-and-such has happened: what the hell am I going to do?" I'd say: "Well, I don't know. What do you think you should do? You go and decide". You'd go away and I'd think: "I hope he gets this one right". Most times, you do it yourself, you solve the problem, you solve it in the best interest of the company, you felt empowered and you felt grown up, because I told you to go away and you solve it.

Similar developmental benefits were thought to emerge in relation to employee motivation. It is worth noting that the organisations advocating greater employee autonomy were also less likely elsewhere in the interview to express concerns over productivity, performance and motivation. Indeed, the perceived impact of autonomy on employee engagement and motivation was spelled out extremely clearly by its advocates. Rather than focussing on gurus or leadership training for supervisors and managers, greater employee autonomy was thought to be the most effective means by far of motivating workers, regardless of the grade or sector of employment.

> If you're in *<company name removed>* working as a project manager, then because the decisions go up and down the chain, you feel no personal responsibility for delivery. If I can make a difference to the bottom line, if I can save half a million pounds on a £20 million project in <company name removed> nobody would recognise that as being of any great benefit, but in *<current employer's name removed>*, you'd get rewarded for that, and you'll take personal benefit from that saving, as will the company. We're no better trained than anybody else; we're just allowed to make decisions.

> It's all very well saying: “we've got this problem, that problem, what shall I do, boss?” I don't know; I've just been out in the garden playing with my kids on a Saturday afternoon. How can I be focused on this idea that we've got an ROV problem? You make the decision, unless there's a massive commercial or safety impact which I need to know about, but otherwise you just make the decisions, you get it sorted out. And they love it, they love it; rather than sitting there playing video games all day, […] they're actually out there managing the organisation.
>
> [Other operators working to a more hierarchical business model] have all been schooled into this culture of risk: pass risk up the chain and they'll make decisions. The idea of passing risk downwards is just abhorrent [to them] […] It's perfectly feasible; it's what we do all the time. It's how we make a difference. It's the thing that encourages our workforce to stay where they are. If you look at our operational efficiency, if you look at our staff turnover, if you look at the reward that we give our guys, if you look at everything, we will beat them hands down on all areas because this is the approach we take. This is the key. It's fundamental to what we do.

However, the benefits mentioned were not restricted to individuals or to the decision-making process. Rather, those companies who have vested a greater degree of autonomy in their workers claimed that they had also reaped considerable benefits in terms of overall company productivity.

> Some organisations do have very rigid structures that you have to work within, and woe betide anybody who steps outside those, whereas we like to encourage people to use their initiative. When we took over the platforms, […] production went up somewhere in the order of about 15% almost overnight, through allowing people to actually use their initiative and put in place programmes that they saw as potentially benefiting the operation.

The health and safety argument was also dismissed by these interviewees as a straw man and as a potential slight on their own safety records. Arguing that their own safety records were testament to the fact that autonomy need not lead to a fall in safety standards or

compliance, they claimed that in many cases, their safety records were better than many organisations that operate according to a strictly hierarchical command and control structure.

> We will never compromise safety. We don't cut corners […] If you speak to the HSE or DEF, they're over the moon about how much we've done.

> In the past seven years I've had one LTI accident in operations and that's out of thousands of man hours. And that's because the people out there are really focused on safety: their safety; everybody else's safety.

> We work within those same health and safety constraints as everyone else. But we'll make it work. They still have risk assessments to fulfil, they still have health and safety guidelines that they have to follow, they still have to satisfy the requirements of the Health and Safety Executive. We work with a typed set of guidelines, rules if you like, that were set out in our safety case, which obviously we can't go outwith. We have normal health and safety practice that you have to comply with to have our own systems and procedures which have all been vetted by the Health and Safety Executive. So you still have those parameters to work within.

The differences between these approaches lay in the belief among interviewees advocating greater autonomy that letting people make decisions as and when a problem arises represents a far more effective means of decision-making than referring a decision upwards in a chain of command. Rather than increasing the likelihood of danger, this approach was argued by its proponents to be a far more sensible approach, as well as being far more precautionary in nature than its critics would have you believe.

> They're at the coalface. In fact they're the best placed people to make that decision […] That's why the people we look for, yes, they've got the technical skills, but you can teach anybody technical skills as long as they're intelligent and enthusiastic, but it's that aptitude and wish for decision making.

> I hear: “people make horrendous decisions that normally you’d expect to come up the tree”. They don’t. Most of them are right, and the company’s gone from strength to strength. It works. I’ve seen it so many times in so many industries.
>
> The person who is most at risk makes the best decision […] *<Company names removed>* have got so driven down this route of occupational safety – lids on coffee cups and holding the handrail and all that sort of rubbish – that the bigger safety risks pass them by […] The guys on the ground will turn round on a regular basis and say: “We need to change out this piece of plant because it's old and rusty and it's got a problem”. In *<company name removed>*, that request would then be filed and sent off and it would be reviewed and it would go through this big process until it came to somebody who said: “I can't afford the budget this year for that; no, we won't do that”. Whereas in our organisation, you think it's not safe? There's the money, go and change it. So they know that their safety is in their own hands, and they have the confidence and the capability to say: “This is what we need to make it safe”.

The idea of autonomous working clearly remains an extremely divisive one. The issue is compounded by the strength of feeling in the two camps, with one claiming greater autonomy to be a practice which yields greater motivation, productivity and safety compliance, and the other claiming that it is ultimately unworkable within the oil and gas industry. It should be said that even among those interviewees expressing staunch scepticism in relation to the feasibility of greater employee autonomy in the oil and gas industry, many were prepared to accept evidence to the contrary. However, it was felt that the move from a traditional hierarchical structure to a looser, more autonomous structure involved such profound disruption to a business model that it would require a significant body of evidence to convince them that the transition would be worth making.

5.3.3 ‘Open Doors’ Policy

Where greater autonomy provoked polarisation of opinion, so the use of an ‘open doors’ policy gained virtually unanimous support. Recommended by the literature as a means of engendering greater team spirit and accessibility of personnel and ideas, this practice was endorsed by every interviewee we spoke with. In this respect, interviewees made it clear

that our interviewee sample was not unrepresentative of the general population. Rather, the practice was widespread within the industry, although the extent to which different doors are open may vary between companies. Even within our sample, we found this to be the case. In some instances, there were literally no physical barriers whatsoever between those at administrative level and the Managing Director or Chief Executive.

> Here it's totally open plan […] We have meeting rooms; we have a board room, but there isn't a single office in the building. The MD actually sits just over a small glass table from where I sit. That's how open it is!

In other cases, some senior staff had offices, but interviewees stated that their employees knew only too well that doors were only ever closed if a private meeting was taking place. Other than that, there may have been partition walls, but the doors themselves would always be open.

> We have an open door policy here. So anybody that wants to come and talk to anybody, round that corner there, you've got the technical director, the commercial director, one of the managing directors, chief exec, finance director, another managing director […] That's critical I think if you're looking at delivery of HSE as well […] When you see the OIM's door closed, you know it's closed for a reason but generally speaking, it's open.

At the furthest end of the spectrum lay companies who have an open door policy but would generally encourage staff to raise any issues with their immediate supervisors or managers rather than approaching staff at executive level, for example. It should be stated that doing so was not impossible should an employee wish to do so, but generally, the chain of command should be used in the first instance.

> I would say pretty much it's an open door policy. It's generally open plan in the office. There are some offices; it's mostly managerial people that are in the offices. My door is always open if anybody wants to come in […] We would encourage them to try and go through a line manager, but if there is an issue that they feel

> uncomfortable about going to their line manager directly above them, then absolutely they should go in and speak to someone else.

As such, given the widespread existence of open doors policies throughout the industry, interviewees felt that there was little to be gained by attempting to put in place a pilot or intervention focussed upon this area.

5.3.4 Rewards for Innovation

The final workplace-level practice identified by the literature was that of rewarding innovation. This contrasts with reward mechanisms for performance and / or productivity alone, and is intended to encourage employees to think creatively about the way in which they use their skills (or those of their fellow employees).

In general, rewards for innovation were far less prevalent than those awarded for impressive performance. Indeed, when asked to discuss rewards for innovation, most interviewees proceeded to discuss their performance reward structure. However, when probed further, interviewees stated that where it had made a significant contribution to productivity and / or performance, innovation would be rewarded in the same way as effort or long hours. The rewards could be both financial and non-financial, and could be issed at an individual or a team level.

> Spot awards typically are for a good piece of work done offshore, maybe an excellent health and safety performance […] A lot of us are involved in management incentive programmes as well, which is based on company performance, on your personal performance and on how the company performs financially as well.

> Line managers have the power to make spot bonus payments and so on for somebody who has worked beyond the bounds of what would normally be expected.

As identified above though, some interviewees argued that although bonuses were never unwelcome, it was misguided to think that simply offering bonuses would in itself increase

people's motivation, whether the issue was motivating people to work harder or more innovatively.

> The other thing is the reward mechanism. Reward is never the ultimate motivator or driving force for these people, it's because they want to do a good job.

Again, interviewees did not believe that there existed any significant problems in relation to the way the industry rewards innovation. However, whilst there may be no issue in rewarding innovation this way, it does not automatically follow that this is the best way to engender innovation. Again, issues of workforce autonomy and empowering employees to play a more formative role in their working were seen by a small number of interviewees to be the most effective means of stimulating innovation, and rather than focussing upon a pilot or intervention aimed at rewarding innovation, this innovation would emerge organically in situations where employees have a greater say over the way they work.

5.4 Barriers to Pilot Formation

Interviewees were asked to consider whether there might be any barriers faced in trying to put in place skills utilisation practices at either individual or workplace level.

The general impression given by interviewees was that many companies would resist any suggestion to change. However, several interviewees recognised that although many of the skills utilisation practices may seem like pandering to workers, in actual fact it was entirely in a company's best interests to make this kind of investment.

> Everything I said about how I think a company should be run and how we should develop and train people and give them a nice working environment and making them have fun and make them happy, is actually utterly selfish. It's to make me richer; it's to make the bosses richer. It's going to be more successful. It's not altruism; it's not sacrificing the bottom line for the sake of being nice to people. It's totally the reverse […] Everything I'm talking about is aimed at making the company

> more successful, and the serendipity effect, if you like, is that people are happier and enjoying themselves and having fun.

As a result, it was felt by these interviewees that although there may be barriers, this shouldn't necessarily be the case.

> At the end of the day, this isn't rocket science. This is what a responsible employer should be looking for. They would want a confident, motivated, skilled workforce, they'd want a competent workforce and workplaces that they're happy to work in, because at the end of the day they're going to be more productive.

Many interviewees also mentioned that they would consider participating, but they would want to know more about the content of any pilots beforehand, and would need to be fairly convinced of any intervention's likely success beforehand. Similarly, the potential cost of any intervention was also a potentially troublesome barrier.

> It depends how much resource they've got, how much they're willing to devote to it and what the outcome's going to be. I think you need to go back to the Scottish Government and ask what the outcome of this is going to be. What is it, is it going to raise the skills level and productivity of the Scottish workforce? You know, it doesn't mean anything, and that is the problem with government: it doesn't articulate what people need. That won't be very popular but that is the reality.

However, although it was likely to be the larger, better resources firms who were most able to divert the necessary resources to support skills utilisation, working with these larger companies was also thought to be inherently difficult within the context of changing workplace practices in particular. Given the 'monolithic' nature of larger firms, the culture change required to change their working practices was thought in many cases to be insurmountably large. Whilst smaller companies may have the willingness to change but lack the up-front financial clout to support the capital investment, so larger companies may have access to those financial resources but are likely to lack the willingness to do so.

> We're not a <*company name removed*>, which has been running many, many years: a monolith, which is actually very hard to stop, change direction and get going. I suppose the comparison would be an oil tanker and a sailing boat. It's far easier to turn the sailing boat into a different direction, and that I suspect is one of the advantages that we hold.

In a similar vein, a number of interviewees argued that the 'command and control' instinct of many companies within the industry – particularly larger ones – was likely to stifle any prospect of innovative practice emerging. In order to ensure risk compliance, any interventions directed at changing individual or workplace practices would be sterilised to the extent that they may become entirely pointless. Although the project would be keen to ensure that interventions did actually address the issue they were expected to, this was necessarily in tension with companies' desire to be in control or individuals and workplaces.

> It imports risk. You will not get a true understanding. It would be so sterile, so managed, to ensure that there's no risk. Because of reputation, cost, the technical safety; all that sort of risk is just so big for them that they will sterilise it in such a way that it's not real.

A number of the companies who had succeeded in devolving a degree of autonomy to their employees made it clear that they were only too happy for the project to attempt to learn from them further with a view to identifying best practice. Their view harks back to the idea explored at the outset of the chapter whereby companies often feel a sense of industry solidarity. As such, disseminating this type of practice is in everybody's best interests over the longer term. However, despite this willingness to share best practice, there remained a perception that the remainder of the industry simply wasn't interested in this, despite the potential benefits of doings so. This was thought to be a considerable barrier to the possibility of changing practices in the industry.

> You could quite clearly go into <company name removed> and use it as a role model or as an example of how you <u>can</u> actually do it; how you <u>can</u> have a flat organisation, […] how self motivated people can achieve much greater results. They've got that

> skills competence base and then they're given the freedom to actually use those things because they understand risk, they understand responsibility and they're rewarded for that. And people will see how it works.
>
> I want to see the industry as a whole develop and do better. And I've given presentations on it; I'm giving a presentation at the SUT on fast track project management […] We are fully invested into UK Oil and Gas and all these other organisations. We're quite happy to deal with them and explain where we think things can change. But they just don't listen. They teeter round the edge of it, talk about it, and all this sort of stuff […] They know what they have to do; they just don't do it […] If the CEO and whole culture isn't there it's never going to work, you can't do it from the ground up. You can't just do it in a part of the organisation, it has to be from the top down.

Finally, the willingness of individual workers to change their working methods was also highlighted as a potential barrier. Whilst changes to workplace practices were seen as being in the gift of employers, it was thought that successful implementation of Individual-level skills utilisation practices would require far greater support from employees. As has been demonstrated throughout this report, the problems of low motivation and lack of initiative are such that some interviewees felt they could jeopardise the prospect of success of any skills utilisation interventions at this level.

> The workplace thing in theory should be relatively straightforward to resolve. I think getting confident, motivated personnel and retaining them as confident, motivated personnel is much more difficult […] With people, you're dealing with individuals and it's much more difficult to do that. You have everything from people that – as I mentioned before – are absolutely happy to be stuck in doing what they're doing, to others who absolutely like to go up the tree as fast as they can to others that want to see that structured approach.

Interviewees also made it clear that different areas of their company may need considerably different types of pilot or intervention. Attempting to impose a 'one size fits all' pilot or

intervention to multiple companies or even to multiple different parts of one company was likely to result in less meaningful results. Although it was seen as necessary to develop general pilots on the basis of themes emerging from these interviews, it was also recognised as being essential for the project to developed the detail of the pilots in conjunction with those companies interested in participating.

5.5 Impact Measures

The final short section of the topic guide focussed upon the way in which interviewees were able to measure productivity and performance of employees, and whether any data collected in support of this might be used to evidence success (or otherwise) of the pilots and interventions developed as then next stage of this project.

When asked how they would expect to measure the success of any pilots developed to help skills utilisation in oil and gas companies, some companies made it clear that the project should not be looking to them to answer such questions.

> I was hoping you were going to tell me! That's why I signed up for it; I thought: "Great; this is a good idea; they're going to come and tell me how to do this".

As interviews progressed, it became clear that standard industry measures of productivity and performance do not provide the kind of data which will allow the research team to quantify the impact of any pilots or interventions. Generally, performance and productivity are rarely measured at individual level, with most measures of productivity and performance gathered at team or division level. For supply chain companies, this was typically gathered in relation to the ability to produce a standard product or to meet clients' deadlines.

> Our productivity is really the ability of people to deliver the deliverables as required in an efficient manner and effectively box them off. What we find in our line of business, and I'm reasonably sure it will be same of our competitors, is that if we have a large project, we would dedicate a project team to that project and they

> would see that project through […] For us the key thing is to try and ensure that people recognise what they have to deliver, and deliver it within the timescale that's needed.

Similarly, performance and productivity in exploration and production companies is typically measured in barrels of oil produced by a given installation, although some companies do make use of individual key performance indicators for their staff.

> Our productivity is measured by the number of barrels we're producing […] That at the end of the day is our key performance indicator, with lots underlying that: downtime, injuries, and all the other associated performance indicators that would follow on behind that […] [Individual KPIs include] health and safety issues, innovation, team working, operating in the workplace, safe working practices, compliance with processes and procedures, there's a raft of them.

Again, this simply serves to reinforce the point made earlier in the report: namely, that any pilot or intervention will have to be developed in detail in conjunction with the companies involved. Our data suggests that qualitative data (in the form of a Kirkpatrick evaluation, for example) would be best placed to deliver an evaluation of a given pilot. However, the importance of team-based working in supply chain work may mean that the type of productivity and performance data outlined above could be harnessed to show the impact of an intervention focussed upon one particular team within a workplace, rather than focussing upon providing the intervention for the whole workforce.

6: SUMMARY OF KEY FINDINGS AND NEXT STEPS

This report has provided an overview of results of the research process followed thus far. Due to the volume of data involved, this short chapter will aim to provide a summary of the key points emerging from our analysis of the interviews undertaken.

6.1 General Background

In general, interviewees did not believe there to be significant under-utilisation of skills across the industry, with a small number of exceptions who believed that the hierarchical nature of some companies frustrated creativity and skills use.

Rather than focussing upon skills utilisation as a problem, interviewees focussed upon specific key enablers (or lack thereof) as problematic. In particular, a lack of employee motivation, deficiencies in leadership and management, and gaps in the skills base available to the industry were highlighted as issues which gave greater cause for concern than any apparent under-utilisation of skills. In terms of the skills base, interviewees further specified that issues included a general shortage of skilled people coming in to the industry and a shortage of core aptitudes such as literacy and numeracy, decision-making and inter-personal communication. In addition, an urgent need to address the problem of inter-generational skills transfer was seen as a key need. Although many companies had sought to address this using mentoring schemes, their experiences were generally negative due to the lack of training, rigour and proficiency of many mentors in the industry.

As such, rather than focussing upon specific Skills Utilisation Practices as the basis of pilots or interventions, most interviewees pointed out that assistance with these more fundamental areas would have a far greater impact upon their ability to use skills than would be the case with isolated SUPs (or bundles thereof).

6.2 Skills Utilisation Practices - Individual

The evidence from the more detailed exploration of skills utilisation with our interviewees appears to generally support their initial assertion that under-utilisation of skills is not a particular problem within the oil and gas industry. Many of the individual-level SUPs we identified at the outset of the project are already widely used in the industry. In particular, very few interviewees believed that an intervention or pilot in the areas of induction, personal development plans, learning transfer or training needs reviews would contribute to a significantly better level of skills utilisation in their company.

On the other hand, interviewees made it clear that there were some areas in which practices focussed on delivering confident, competent and motivated individuals might benefit from an intervention or innovative pilot. In particular, interviewees highlighted the mentoring process as an area which requires urgent attention if the demographic time-bomb facing the industry is to be addressed. Similarly, there was felt to be a clear need for greater dialogue between industry and academia, as current provisions for this dialogue work poorly and suffer from low levels of buy-in from industry and academia. Finally, a need for greater evidence of successful multi-skilling was identified by a number of companies in order to convince them that the process was feasible and worthwhile.

6.3 Skills Utilisation Practices – Workplace

Although 'open doors' policies and reward schemes are both widely used throughout the industry, the evidence from our interviewees suggest that there has been far less attention paid by companies to the workforce element of skills utilisation. As a result, other than the two exceptions already identified, workplace-level SUPs were far less prevalent than individual-level SUPs. In particular, there was very little evidence of companies introducing greater autonomy for their employees, despite those who have done this claiming that it is an extremely successful approach which offers them considerably higher levels of performance, productivity, motivation, engagement, safety and staff retention.

Despite these stated benefits, there existed significant resistance to the idea of devolving greater autonomy to employees. Although companies who had done so claimed that critics

refused to do so due to a general lack of willingness to change and a lack of trust in their employees, the critics of this approach claimed that issues of accountability, safety and responsibility gave them significant cause for concern. It was made clear that pilots offering greater autonomy would be likely to receive very little interest, with critics and sceptics saying that there was too little documentary evidence of autonomy working effectively and safely within the oil and gas industry. However, many refused to completely dismiss the idea, arguing that if sufficiently convincing evidence were available, they may be forced to review their opposition.

6.4 Pilot Development

A number of key themes have emerged as possible pilots. Prior to producing the final draft of this report, discussions about the focus and delivery of pilots have taken place with the project's Steering Group and External Advisory Group, resulting in the identification of a number of key topics and suggestions as to how these might be taken forward. A brief recap on the key themes we identified and suggested as possible pilots is now provided.

Deficiencies in relation to the key enablers identified above were highlighted as the areas in which most interviewees were keen to see some form of assistance given to them (i.e. an active intervention or pilot scheme). Specifically, the issues of leadership and management, employee motivation, mentoring and core skills (including both behavioural and educational aptitudes) were highlighted by interviewees. In relation to Skills Utilisation Practices themselves, interviewees felt that they had little to learn in relation to individual-level practices, although we have identified the need for greater dialogue between industry and academia as an important exception to this.

However, the fact that interviewees did not want to see an active intervention in relation to the other areas does not mean that they were altogether dismissive of their importance or potential impact. Rather, it was felt that the project might deliver considerable greater value in providing sceptics or critics of particular Skills Utilisation Practices with more analytic evidence of the way in which these practices operate in the industry. In this respect, autonomous working is by far the most prominent candidate, given the benefits described

by its practitioners and the extent of scepticism among those reliant upon more conventional hierarchical decision-making structures (although job rotation, competence frameworks and multi-skilling are other areas of contention which might well be considered). The stated need for convincing evidence if sceptics are to be won over suggests that studying those organisations who have already adopted these practices may represent a particularly useful research output, both for the project and for the industry more broadly. In addition, there is potential for innovative action research methodologies to be used to bring together practitioners of a particular practice and its sceptics with a view to better understanding the transferability of such practices to the rest of the industry.

However, the literature review and interviewees both highlighted to the research team that quantitative evaluation of pilots is likely to be frustrated by a lack of individual-level data held by companies. Productivity and performance figures very often do not exist at the individual level, with data typically held at company or divisional level. As a result, evaluative criteria will necessarily vary from organisation to organisation, and it will be extremely important to establish criteria at the outset of pilots or interventions. In addition, many organisations may need to be entirely convinced of the prospective success of any pilot prior to signing up.

6.5 Next Steps

The findings of this research have already been discussed by the Steering Group and External Advisory Group with a view to developing workable pilots. This process is ongoing, and the research team will continue to contribute to the development of the pilots in conjunction with the Steering Group and External Advisory Group.

In the meantime, the research team would be happy to provide any clarification or elaboration on any of the points contained within this report. If you should have any queries, please do not hesitate to contact David Gibbons-Wood (d.gibbons-wood@rgu.ac.uk) or Iain MacLeod (i.macleod1@rgu.ac.uk).

7: REFERENCES

Abdel-Wahab, M; Dainty, A; Ison, S; Bowen, P & Hazlehurst, G (2008) 'Trends of Skills and Productivity in the UK Construction Industry' in *Journal of Engineering, Construction, and Architecture Management*, 15 (4) pp.372-382.

ACSEF (2009) *The Importance of the Energy Sector*. Aberdeen: Aberdeen City and Shire Economic Forum.

AGCC (2009) *Oil and Gas Survey: 11th Survey*. Aberdeen: Aberdeen & Grampian Chamber of Commerce.

Armitage, A & Keeble-Allen, D (2007) *Using the Past to improve our Future: Can High Performance Working learn from TQM?* CIPD Professional Standards Conference: University of Keele.

Ashton, D & Sung, J (2002) *Supporting Workplace Learning for High Performance Working.* Geneva: International Labour Organisation.

Belt, V & Giles, L (2009) *High Performance Working: a Synthesis of Key Literature*. London: UK Commission on Employment and Skills.

Bloom, N; Conway, N; Mole, K; Moslein, K; Neely, A & Frost, C (2004) *Solving the Skills Gap: Summary report from a CIHE/AIM Management Research Forum*. London: Advanced Institute of Management Research.

Boxall, P & Purcell, J (2000) 'Strategic Human Resource Management: Where Have We Come From and Where Should We Be Going?' in *International Journal of Management Reviews*, 2 (2) pp. 183-203.

Brynjolfsson, E & Hitt, L (1998) 'Beyond the Productivity Paradox' in *Communications of the ACM*, 41 (8) pp.49-55.

Cappelli, P & Neumark, D (2001) 'Do 'High-Performance' Work Practices Improve Establishment-Level Outcomes?' in *Industrial and Labor Relations Review*, 54 (4) pp.737-775.

Cheng-Hua, T; Shyh-Jer, C & Shih-Chien, F (2009) 'Employment Modes, High-Performance Work Practices, and Organizational Performance in the Hospitality Industry' in *Cornell Hospitality Quarterly*, 50 (4) pp.413-431.

CIPD (2010) *High Performance Working Factsheet*. London: Chartered Institute of Personnel and Development.

Combs, J; Liu, Y; Hall, A & Ketchen, D (2006) 'How Much Do High-Performance Work Practices Matter? A Meta-Analysis of Their Effects on Organizational Performance' in *Personnel Psychology*, 59, pp. 501-528.

Cutcher-Gershenfeld, J (1991) 'The Impact on Economic Performance of a Transformation in Industrial Relations' in *Industrial and Labor Relations Review*, 44 (2), pp.241-260.

Dannyame, T (1999) *Building and Implementing a Balance Scorecard*. London: Business Intelligence.

De Menezes, L & Wood, S (2006) 'The Reality of Flexible Work Systems in Britain' in *International Journal of Human Resource Management*, 17 (1), pp.1-33.

Diaye M; Greenan N, & Urdanivia, M (2007) 'Subjective Evaluation of Performance through Individual Evaluation Interview: Empirical Evidence from France'. *National Bureau of Economic Research Working Paper 2979*. Cambridge, MA: NBER.

Easton, G & Jarrell, S (1994) 'The Effects of Total Quality Management on Corporate Performance: an Empirical Investigation' in *Journal of Business*, 71 (2) pp. 253-307.

Edwards, P (2007) *The HPWS and the Small Firm*. London: Involvement and Participation Association.

Futureskills Scotland (2007) *Skills in Context*. Glasgow: Centre for Enterprise.

Futureskills Scotland (2009) *Product Market Strategies and Workforce Skills*. Edinburgh: the Scottish Government.

Godard, J (2001) 'High Performance and the Transformation of Work? The Implications of Alternative Work Practices for the Experience and Outcomes of Work' in *Industrial and Labor Relations Review*, 54 (4), pp.776-805.

Guest, D (2000) 'HR and the Bottom Line: Has the Penny Dropped?' in *People Management*, 20, pp.26-31.

Guest, D (2006) *Smarter Ways of Working*. Wath upon Dearne: Sector Skills Development Agency.

Harley, B; Allen, B & Sargent, L (2007) 'High Performance Work Systems and Employee Experience of Work in the Service Sector: The Case of Aged Care' in *British Journal of Industrial Relations*, 45 (3) pp. 607-633

Haskel, J & Hawkes, D (2003) *How Much of the Productivity Spread is Explained by Skills? UK Evidence using Matched Establishment / Workforce Survey Data*. CeRIBA Discussion Paper.

Ichniowski, C & Shaw, K (1995) 'Old Dogs and New Tricks: Determinants of the Adoption of Productivity-Enhancing Work Practices. Brookings Papers on Economic Activity, 1995, pp.1-65.

James, G (2006) *Working Paper on Skills Utilisation*. Exeter: South West Observatory & Skills & Learning Intelligence Module.

Kalleberg, A (2006) 'Beyond Profit? Sectoral Differences in High-Performance Work Practices' in *Work and Occupations*, 33 (1), pp. 271-302.

Keep, E & Payne, J (2002) *What Can the UK Learn from the Norwegian and Finnish Experience of Attempts at Work Re-Organisation?* SKOPE Research Paper 41. Warwick: University of Warwick.

Keep, E; Mayhew, K & Payne, J (2006) 'From Skills Revolution to Productivity Miracle – Not as Easy as It Sounds?' in Oxford Review of Economic Policy, 22 (4) pp.539-559.

Kumar, P (2000) *Rethinking High-Performance Work Systems*. Kingston: Queen's University.

Levie, J & Hart, M (2008) *The Global Entrepreneurship Monitor United Kingdom 2008 Executive Report*. Aston Business School and the University of Strathclyde.

Lloyd, C (2000) *High Involvement Work Systems: The Only Option for UK High Skill Sectors?* SKOPE Research Paper 11. Warwick: University of Warwick.

Lloyd, C & Payne, J (2006) 'Goodbye to All That? A Critical Re-Evaluation of the Role of the High Performance Work Organisation within the UK Skills Debate' in *Work Employment and Society*, 20, pp.151-165.

Macy, B & Izumi, H (1993) 'Organizational Change, Design, and Work Innovation: a Meta-Analysis of 131 North American Field Studies, 1961-1991' in R Woodman & W Pasmore (Eds) *Research in Organizational Change and Development*. Greenwich: JAI Press.

Mason, G. (1999) 'Product Strategies, Work Force Skills, and 'High-Involvement' Work Practices' in P Cappelli (Ed.) *Employment Practices and Business Strategies*. New York: Oxford.

Mayhew, K & Neely, A (2006) 'Improving Productivity – Opening the Black Box' in *Oxford Review of Economic Policy*, 22 (4) pp.445-456.

Muldrow, T; Buckley, T & Schay, B (2002) 'Creating High Performance Organisations in the Public Sector' in *Human Resources Management*, 41 (3) pp.341-354.

Neely, A; Mills, J; Platts, K; Richards, H; Gregory, M; Bourne, M & Kennerley, M (2000) 'Performance Measurement System Design: Developing and Testing a Process-Based Approach' in *International Journal of Operations & Production Management*, 20 (10) pp.1119-1145.

OECD (2001) *The New Economy: Beyond the Hype*. Paris: Organisation for Economic Cooperation and Development.

Oil and Gas UK (2009) *2009 Oil & Gas UK Activity Survey*. London: Oil and Gas UK.

Oil and Gas UK (2010) *2010 Oil & Gas UK Activity Survey*. London: Oil and Gas UK.

Patterson, M; West, M; Lawthorn, R & Nickells, S (1997) *The Impact of People Management Practices on Business Performance in People Management, No. 22*. London: IPD.

Patton, D; Marlow, S & Hannon, P (2000) 'The Relationship between Training and Small Firm Performance: Research Frameworks and Lost Questions' in *International Small Business Journal*, 19 (1) pp.11-27.

Payne, J (2008) *Skills in Context: What Can the UK Learn from Australia's Skill Ecosystem Projects?* Bristol: Policy Press.

Philpott, J (2007) 'Section 3 High Performance Working: The Utilisation of Skills' in *Skills and Economic Performance*. Wath upon Dearne: Sector Skills Development Agency.

Reynolds, P; Bosma, N & Autio, E (2005) 'Global Entrepreneurship Monitor: Data Collection, Design and Implementation 1998–2003' in *Small Business Economics*, 24, pp. 205-31.

Scottish Funding Council (2004) *Learning to Work: Enhancing Employability and Enterprise in Scottish Further and Higher Education*. Edinburgh: Scottish Funding Council for Further and Higher Education.

Scottish Government (2007a) *Skills for Scotland: a Lifelong Skills Strategy*. Edinburgh: the Scottish Government.

Scottish Government (2007b) *The Government Economic Strategy*. Edinburgh: the Scottish Government.

Scottish Government (2010) *Advice on Making Better Use of Skills*. Edinburgh: the Scottish Government. Available online at: http://www.scotland.gov.uk/Topics/Education/skills-strategy/Employeradvice.

Skyrme, D (1998) 'Effective Knowledge-Sharing Teams' in *Journal of High-Performance Teams*, 3 (3) pp. 15-20.

Sparham, E & Sung, J (2007) *High Performance Work Practices: Work Intensification or 'Win-Win'?* Leicester: Centre for Labour Market Studies.

SQW Consulting (2010) *Best Strategies in Skills Utilisation*. Edinburgh: SQW Consulting.

Strassman, P (2005) *How Much Is Knowledge Worth?* New York: Baseline.

Sung, J & Ashton, D (2005) *High Performance Work Practices: Linking Strategy and Skills to Performance Outcomes*. London: Department of Trade and Industry.

Sung, J; Ashton, D & Raddon, A (2009) *Product Market Strategies and Workforce Skills.* Edinburgh: Futureskills Scotland.

Sveiby, K (1997) *The New Organizational Wealth: Managing and Measuring Knowledge-Based Assets*. San Francisco: Berrett-Koehler.

Tamkin P; Hirsh, W & Tyers, C (2003) *Chore to Champions: the Making of Better People Managers*. Brighton: Institute for Employment Studies.

Tamkin, P (2004) *High Performance Work Practices*. Brighton: Institute for Employment Studies.

Tamkin, P (2005) *The Contribution of Skills to Business Performance*. Brighton: Institute for Employment Studies.

Tamkin, P; Giles, L; Campbell, M & Hillage, J (2004) *Skills Pay: the Contribution of Skills to Business Success.* Brighton: Institute for Employment Studies.

Tamkin, P; Cowling, M & Hunt, W (2008) *People and the Bottom Line*. Brighton: Institute for Employment Studies.

Tamkin, P & Denvir, A (2009) *Strengthening the UK Evidence Base on Management and Leadership Capability*. Brighton: Institute for Employment Studies.

Terlaak, A & King, A (2006) 'The Effect of Certification with the ISO 9000 Quality Management Standard: a Signaling Approach' in *Journal of Economic Behaviour and Organization*, 60 (4): pp.579-602.

Udall, S & Szaroleta, S (2010) 'Are You Wasting or Using Talent? How to Survive and Thrive by Becoming a Talent Rich Organisation' in *Business Leadership Review*, 7 (2).

UK CES (2008) *Skills Utilisation Literature Review*. London: UK Commission for Employment and Skills.

Way, S (2002) 'High Performance Work Systems and Intermediate Indicators of Firm Performance within the US Small Business Sector' in *Journal of Management*, 28 (6) pp.765-785.