Developing Knowledge Sharing Partnerships in the SME Sector: An Action Research Approach

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Abstract: The economic and social prosperity of the UK depends upon a healthy knowledge-based economy. In a globally competitive economic environment what is needed is a talented, enterprising workforce, constant innovation in product and service development, a thriving culture of entrepreneurship, dynamic leading-edge scientific and technological development and world-class research that attracts investment. Lord Dearing in 2002 recognised that in collaboration with business, and with the support of government, the UK university sector has the capability to fulfil this role. This message has been echoed by successive UK Governments who have made it quite clear through reports such as the 2003 Lambert Review and more recently the 2007 Sainsbury Report that businesses and universities should be working together more closely. Wilson (2012) argues that universities are an integral part of the skills and innovation supply chain to business yet this supply chain is not a simple linear supplier-purchaser transaction; it is not the acquisition of a single product or service. This supply chain is multi-dimensional, it has to be sustainable, and it has to have quality, strength and resilience. These attributes can only be secured through close collaboration, partnership and understanding between business and universities. Working in partnership with universities does not come naturally to business organizations particularly to the Small to Medium (SME) sector as there are challenges on both sides.

The aim of this paper is to explore such challenges as it presents the development of a knowledge partnership between academics at Newcastle Business School (NBS) and a manufacturing company, ManCo, in the North West of England which customises vehicles for use by disabled individuals and their carers. The company approached NBS in 2010 when they were experiencing business challenges and entered into a research partnership with the university. The purpose of this partnership was to utilise university skills in business research to inform ManCo's future business strategy.

The methodological approach adopted by the two organisations was action research (Coghlan and Brannick, 2010) which involved a democratic, participative generation of knowledge - something that in business research is highly unusual. Action Research (AR) has its origins in sociology, social psychology, psychology, organisational studies, education and health studies and can be distinguished from applied research. Researchers working on AR projects, such as in organisational or social planning, have realised that the notion of 'expertise', as pre-supposed by applied research, is highly questionable. AR is said to involve generation of situation-specific knowledge, not mere application of some pre-existing knowledge. During the course of twelve months the company and academics worked together and went through three cycles of AR. The outcomes of this project are: better insight into how SME business-university collaboration might work; generation of new customer data; and an improved business for ManCo.

Keywords: Action Research, knowledge partnership, business-university collaboration, Small Medium Enterprise

1. Introduction

The economic and social prosperity of the UK depends upon a healthy knowledge-based economy. In a globally competitive economic environment what is needed is a talented, enterprising workforce, constant innovation in product and service development, a thriving culture of entrepreneurship, dynamic leading-edge scientific and technological development and world-class research that attracts investment. In collaboration with business, and with the support of government, the UK university sector has the capability to fulfil this role (Dearing, 2002). This message has been echoed by successive UK Governments who have made it quite clear through reports such as the Lambert Review (2003) and Sainsbury Report (2007) that businesses and universities should be working together more closely. Wilson (2012) argues that universities are an integral part of the skills and innovation supply chain to business yet this supply chain is not a simple linear supplier-purchaser transaction; it is not the acquisition of a single product or service. This supply chain is multi-dimensional, it has to be sustainable, and it has to have quality, strength and resilience. These attributes can only be secured through close collaboration, partnership and understanding between business and universities.

Working in partnership with universities does not come naturally to the SME sector despite a history of successful initiatives such as Knowledge Transfer Partnerships (KTPs). The UK Government motivation for knowledge transfer partnerships has emerged from the Lambert Review (2003) and points out that much more needs to be done to persuade business of the economic benefits to be gained from innovation and collaboration with university departments/schools. From a business-academic perspective, researchers who work with businesses gain access to new resources, conduct applied research and develop new perspectives on existing problems; businesses get access to new ideas and can improve their chance of better performance. Nevertheless the challenges to these knowledge partnerships are still great and as shown in Table 1 include:

Table 1: The challenges of working on academic-business knowledge transfer partnerships

A Business Perspective	An Academic Perspective
Short termism – not in it for the long term.	The need for academic freedom
Research seen as a cost rather than an investment.	Difficult to calculate economic returns
The capacity within the firm to absorb research and innovation	Different ideas of rigour
Hard to identify potential academic partners	Governance and managing conflict of interest
Difficulties in managing the relationships	Intellectual Property Rights
Need to generate return for shareholders	
Differing perceptions of time	
Speed	
Robustness of the research	

However if universities and in particular business schools are to demonstrate the impact of their research and make a difference within the business community it is essential that they endeavour to overcome these obstacles and consider more innovative ways of doing so.

The aim of this paper is to explore the development of a knowledge partnership between academics at Newcastle Business School (NBS) and a manufacturing company, ManCo, in the North West of England which customises vehicles for use by disabled individuals and their carers. The company approached NBS in 2010 when faced with business challenges and after detailed discussions with one of the authors decided to enter into a research partnership with the university. The purpose of this partnership was to utilise university skills in business research in order to inform ManCo's future business strategy. The methodological approach adopted by the two organisations was action research due to its focus on reflection as the research progressed. The desire to work in a collaborative way and to involve company representatives in all stages of decision making also leant itself to an action research approach. The outcomes of this project are: a better insight into how SME business-university collaboration might work; generation of new customer data; and an improved business for ManCo.

2. Background to the project

ManCo is a manufacturing company based in the north west of England, UK. The company employs one Executive Director and approximately forty-five highly skilled workers including sales professionals, draft engineers, operations staff, designers and fitters. The company converts vehicles for a diverse mobility impaired customer group and acts on the principles of customer 'freedom' and 'choice' in product design. In recent years, ManCo have taken part in a KTP and another small government backed scheme which have enabled it to work in a multi-disciplinary way with university engineers and computer science departments to enhance the company's products and designs. Pre-recession, the company sold 420 vehicles per year. During 2009 and faced with a difficult economic climate and global recession the company's sales figures fell. The ED believed that '*… the company has lost sight of its customer value requirements*'. Customer value he argued '*is created through offering differentiated products and services'.* Faced with the challenges of recession and lack of understanding of his customer values, the ED made a conscious decision to seek out support at a university. The ED of ManCo was clear that he did not want research '*done to the company'* and needed to capture the knowledge embedded within the company.

3. Action Research as a methodology

Action Research has its academic origins in sociology, social psychology, psychology, organisational studies, education and health studies. The term Action Research (AR) has a long history (Lewin, 1948); and has continued to gain credence in management research (Coghlin and Brannick, 2010). Lewin (1948) described Action Research (AR) as an iterative process in which practitioners plan for action, act and then perform reconnaissance. In his model of AR shown in Figure 1 there is a recursive relationship between thought and practice which stands in sharp contrast to standard western educational methods and traditions.
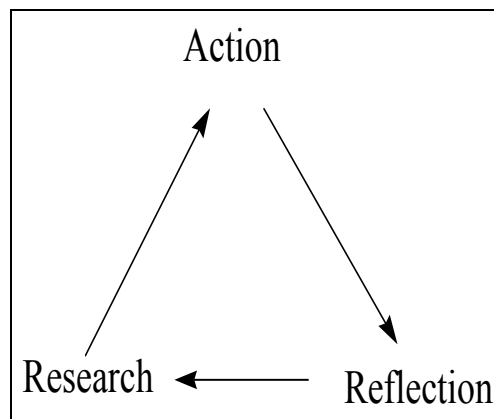
Figure 1: Action Research Model (Lewin, 1948)

Action Research can be distinguished from applied research and practitioners realise that the notion of 'expertise', as pre-supposed by applied research, is highly questionable. Action-oriented research involves the generation of situation-specific knowledge, not mere application of some pre-existing knowledge. Approaches have emerged which include Action Learning, Action Science, Action Inquiry and Participatory Action Research (Coghlin and Brannick, 2010; Moggridge and Reason, 1996). Denscombe (1998) highlights that AR leads to practical outcomes as well as theoretical knowledge, contributing to social practice as well as theory development and bringing theory closer to practice. Achievement of change, not just knowledge acquisition, as well as a rigorous process of data generation and analysis, is essentially what differentiates AR from action learning (Clarke et al., 2006). O'Leary (2005:190) describes action researchers as working on '*real-world problems'* at the '*intersection*' of the production of knowledge and a '*systematic approach to continuous improvement'* which she argues is part of management. AR is grounded in real world problems and real-life situations and this approach sought to satisfy the particular needs and aims of the research situation described here since, as shown in Table 1, there were perceived challenges in integrating work from two different perspectives within the project. Whilst the academic researchers might be seen as sitting outside the company there was a need to work as equal partners with participants inside the business to generate knowledge and facilitate change.

3.1 The methodological process adopted by this study

There are many forms of AR only one of which is participatory AR (PAR). According to McTaggart (1991) for authentic participation to occur participant practitioners must set the agenda of inquiry, participate in collection and analysis of data and have control over the outcome of the research. Udas (1998) believes that PAR must be underpinned by some fundamentals. The first is that PAR questions the nature of knowledge, research and methods. Secondly, the nature of knowledge in PAR is for improvement of practice not for the construction of an abstract theory-base. The PAR assumption of the nature of knowledge is that it is created by local practitioners, environments and historical factors. Thirdly, the findings and value of research are retained locally and the researcher must be prepared to be flexible and creative. Here the research team adopted the model utilised by Coghlan and Brannick (2010) which, like other variants of AR, is distinguished by a pre-step and four stages as shown in Figure 2. The pre-step is an important function in defining the context and purpose of the research. Avison et al. (1999) point to the need for determination of power over the structure of the project and process for renegotiation and/or cancellation. 'Diagnosing' is a collaborative act and seeks to identify provisional issues. 'Planning action' follows on from the diagnosis and is consistent with it. Taking action implements the planned interventions and 'evaluating action' examines outcomes intended or otherwise and links in to the next cycle of action research.
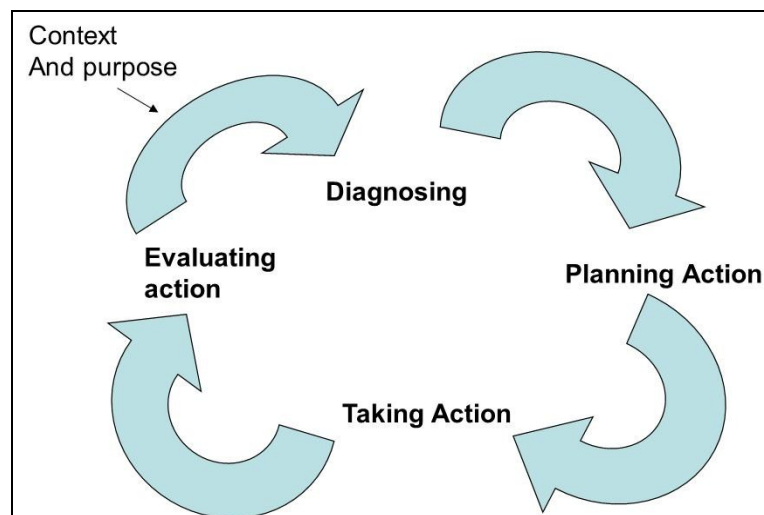
Figure 2: The Action Research Framework used in this research

The research within this paper was designed around three action research cycles, two of which lasted approximately twelve months (Sept 2010-Sept 11) as shown in Figure 3.
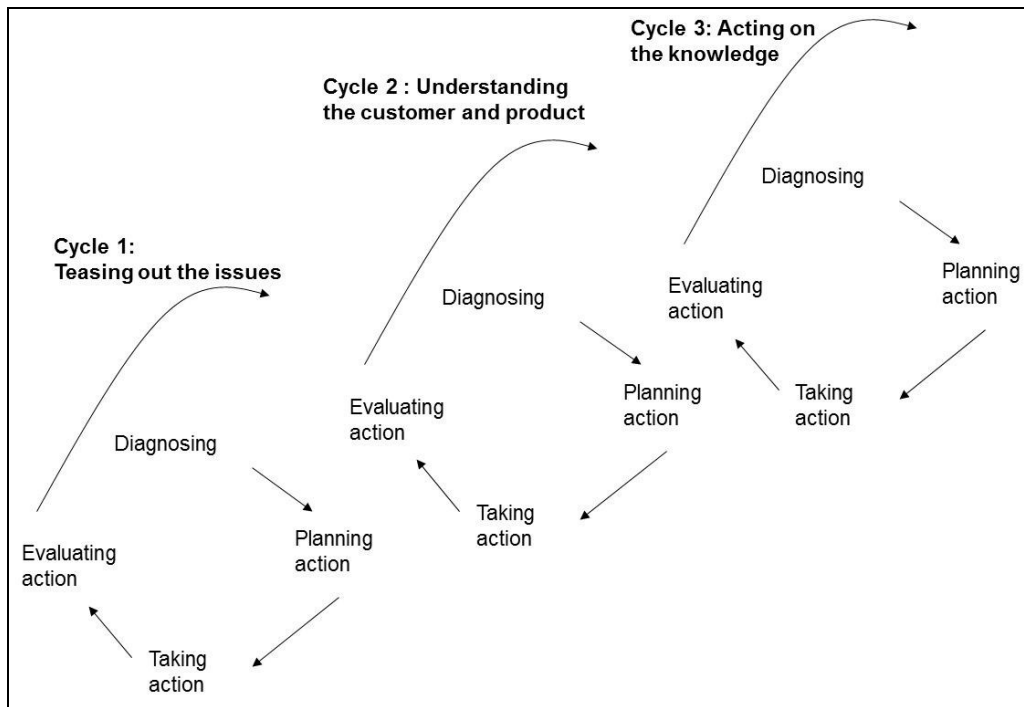
Figure 3: The Three Cycles of Action Research within this project

3.2 Involving the company and generating the data

Stringer (1993:35) suggests that an authentic socially responsive AR methodology must enable participation, acknowledge people's equality of worth and is most effective when it facilitates significant levels of active involvement, provides support for all stakeholders to learn and deals personally with people rather than with their representatives or agents. In adopting a PAR approach the project team actively encouraged the company to be participants in the research. A consistent member was the ED, Robert, and during the research period a number of staff took part in the research at appropriate times. The project team also engaged other stakeholders and this was reflected in the data generating methods as shown in Table 3. Coghlan and Brannock (2010) argue that it is more appropriate to discuss data generation rather than data collection because AR data exists through engagement with others and attempts to collect data are themselves interventions.

Table 2: Data Generation methods within the research study

Cycle	Data Generation Methods
Teasing out the Issues	Diagnose the problem Document analysis Interviews with company staff Observation in the workplace Trade conference observation Fieldwork with customers Phone interviews with clients or their carers Pilot questionnaire data
Understanding the customer and the product	Interviews with company staff Survey plans Survey data: recording, analysis and reporting 'get inside the heads of customers'
Acting on the knowledge	Strategy development meetings Dissemination of research findings Plan - let's do it? Decide course of action to be taken Communicate action/Implement changes to employees Monitor effects of action - Reflectivity of findings and improvements: What worked? What did not work? Future direction – where next? Learning from know-how – Identify new issues Press Release to media

3.3 Survey data: recording, analysis and reporting

At every stage of the research notes were taken. Thus when looking at ManCo's company documentation e.g. strategy, promotional material, website etc., comments and questions were recorded and then explored with company staff for further insight. Where interviews were conducted or observation undertaken the team ensured that recognised good social science research practice was adopted. From an analytical perspective the AR research team constantly engaged in discussions about the data and its interpretations with stakeholders at ManCo ensuring that the principles of participatory AR were observed (Stringer, 1999).

3.4 Quality and rigour in Action Research

Reason and Bradbury (2001) argue that AR should not be judged by the criteria of positivist science and requires its own criteria as shown in Table 3. Rigour in AR refers to how data are generated, gathered, explored and evaluated, how events are questioned and interpreted through multiple AR cycles.

Table 3: Criteria for quality and rigour in action research

Criteria for quality in AR (Reason and Bradbury, 2001)	Rigour in AR (Reason, 2006)
The AR should be explicit in developing a praxis of relational participation – there should be evidence that there was cooperation between the action researcher and members of the organization.	Show how there was engagement in the steps of multiple repetitious AR cycles and how these were recorded to reflect a 'true' representation of what was studied.
The AR should be guided by a reflexive concern for practical outcomes.	Show how assumptions and interpretations were continuously challenged and tested throughout the project to expose them to critique.
The AR should include a plurality of knowing which ensures conceptual-theoretical integrity; extends ways of knowing and has methodological appropriateness.	Show how different views of what was happening were accessed.
The AR should engage in significant work	Show how interpretations and diagnoses are grounded in scholarly theory, rigorously applied and how the project outcomes are challenged, supported or disconfirmed in terms of theories underpinning those interpretations.
The AR should result in sustainable change.	

4. Findings

This section outlines the action research project undertaken at ManCo and answers the three questions posed by Coghlan and Brannick (2010): *What happened*?; *How do you make sense of what happened*?; *So what*?

4.1 Cycle 1: Teasing out the issues

The initial discussions with the ED and sales staff at ManCo were concerned with diagnosing the key research problem: 'What do ManCo really want to know about their customers?'

Diagnosing: First steps included initial desk research of secondary data around the mobility car industry sector. Researchers found this useful to gain background knowledge into the industry and ManCo's customer base. One of the researchers attended a trade fair where she informally met customers and discussed mobility issues with them. This was followed by a company site visit to meet with employees including sales, engineering, administrative and production staff. This initial meeting with employees was important in order to understand the nature of the problem. Researchers then conducted a conference call with the wider AR team and the ManCo employees to ensure that relations on both sides were cementing. This period was also characterised by many email and telephone calls. Thus during the first two months of diagnosis (Sep 2010-Nov 2010) the following issues from the university perspective emerged in cycle 1:

- *How well do ManCo understand their customers and customer needs*?
- *How do ManCo communicate with their customers*?
- *Why do customers remain loyal and come back to ManCo?*

Similar discussions were taking place in ManCo. For example '*what does the business need to do to remain profitable*?'; issues around design – '*what works and what should be discontinued*?'; '*what do customers value in a product*?'; '*What decision making process does a customer go through when making a purchase*?'; '*Why do they choose a ManCo brand over a competitor brand?'* Other research challenges included the currency of the company customer database needed to support the research and the involvement of ManCo staff in the knowledge development and embedding process. This was a sensitive time as the company were facing economic difficulties and the company needed to change some of its business practices in order to remain competitive.

Planning action: In order to tease out these problems further it was clear that more in depth research needed to be done. This would involve conducting a pilot survey and interviewing customers. As many of the customers were disabled interviews with them would need to be done in a sensitive manner recognising that disability comes in many shapes and forms. There were also customers who were not disabled but cared for a disabled person. Discussions were held with the company and a pilot survey was planned by the AR team. Some challenges included the nature of the survey – online, telephone or postal; the questions that would be asked; the size of the survey; who would complete it and how it would be analysed. A telephone pilot study was decided on as it could reach a national clientele and it was agreed that ten disabled customers or carers would be contacted. Once again the integrity of the ManCo customer database gave cause for concern as the AR team wanted to protect customers' right to privacy and confidentiality. ManCo agreed that the database would be cleansed prior to the survey going out.

Taking action: This part of the cycle included developing the questions for the survey, carrying out the pilot study and constructing the questionnaire. This was done with the AR team involving ManCo's ED and employees. A key consideration here was addressing carefully who might complete the questionnaire. The researchers also needed to pilot the survey and began a dialogue with ManCo's customers. At this stage the researchers learnt that customers were wider-ranging and included the disabled customer groups as well as able-bodied carers, guardians and spouses and those who may have been employed as professional workers. Other issues surrounding the interest group were a consideration that the customer may have impairment in motor and sensory functions. Customers may experience reading and literacy difficulties and have mobility issues including mild visual impairments and difficulty walking; they may find it easier to listen to rather than read a survey. If a postal or online survey was to be conducted careful consideration needed to be given to design to acknowledge these issues.

During this period ManCo staff cleaned their customer database. This took about 3-4 weeks. The AR team developed a draft of the questionnaire and at this point the team invited a research specialist in disability studies to comment on the draft questionnaire. This exercise ensured that the questionnaire design was appropriate. The pilot questionnaire was tested with ten customers and explored how customer attitudes had changed buying behaviour. The administration was pre-arranged and agreed in advance with respondents – e.g. time agreed to telephone. One customer could not participate due to personal circumstances and another because of work commitments. The rationale used to identify customers for the pilot came from the ED '*we need to get customers that didn't buy from us which resulted in lost sales'*. Other customers were contacted simply because they had requested product information or had a more general enquiry about a product and '*received valuable advice'*. It was important to gain new insights into changing customer habits and purchasing needs and to find out what these customers wanted from products. Once the pilot survey had been completed the data were analysed using appropriate statistical techniques.

Evaluating the action: The pilot survey provided further insight into ManCo target customers and the questionnaire. For example certain questions were more appropriate than others in terms of their relevance, clarity, length and order. Further insights were gained into the profile of the respondents including classifications of occupation, status and relationship to the customer, age and lifestyle. The participants were highly receptive to telephone interviews and referred to themselves and their condition in non-politically correct terms e.g. '*I'm a spastic'*. This was in contrast to researchers who had been more circumspect when expressing a disability. The ED of ManCo had thought that an incentive might ensure a *'higher response rate'* for completed and returned questionnaires. Yet

respondents' feedback from the telephone survey suggested that a registered charitable donation was preferred. Others preferred 'personal gain' by means of a shop voucher or a bottle of champagne. The final decision was left to ManCo.

A key outcome was that participants were pleased that ManCo was interested in their *'opinions'* and for *'taking the time to communicate that their views on customer value were importan*t'. One argued that '*the research is demonstrating that someone is actually listening to our underrepresented group'*. Another respondent thanked the researcher *'for raising awareness of their needs through the project'*. Additional respondents noted that *'…your research has identified a problem for disabled people like me and that is that companies do not consider our needs and will try to sell you anything. We [disabled] are vulnerable'*. Overall this process elicited a highly positive response.

4.2 Cycle 2: Understanding the customer and the product
During March 2011 a tsunami in Japan halted car and parts production in some Japanese firms. This impacted badly on ManCo whose business relied on this supply chain.

Diagnosing: Going into this Cycle provided an opportunity for ManCo and their employees to provide more comprehensive comments on the draft survey instrument. Answering the company's specific concerns and questions around customer value was paramount. It was important to the company to maintain the inclusive nature of the research as they wanted 'buy in' from their staff. Comments were emailed to the researchers in Newcastle for consideration. Communication with the ED and the AR team continued as the survey instrument was examined for minor errors. At this part of the cycle there was an opportunity for researchers to reflect on the discussions and emails, tighten the focus of the questionnaire and reduce the length to six pages. With final feedback from ManCo some small changes were incorporated to focus the detail of the questionnaire.

Planning the action: At this point in the cycle some survey questions were reconfigured and prioritised against ManCo's strategic plan. The strategic decision was based on company objectives. For example, this generated new questions around: what design aspects customers really value in a vehicle; what type of decision making processes do customers experience when purchasing? ManCo wanted to inform the future marketing and product development and understand what customers may require in future. ManCo requested more information about who customers talk to about products, which magazines they read and how much they are influenced by brands. This had to be balanced by the known theory on survey design if ManCo wanted to get a good response rate to inform their business strategy. In terms of planning for the data collection issues emerged over who would administer the survey ManCo suggested they should log responses and send out a reminder letter. The ED made a decision not to incentivise on the first mailing of the survey, however, they 'might on the second' depending on response rates. The company also decided that they would meet the cost of mailing the survey out to customers but the accompanying personal letter (on ManCo headed paper) would come from university researchers and would explain the purpose. Researcher contact details were made available for further explanation. Ethical considerations were discussed and it was agreed that researchers would not require any personal information but would deal only with coded questionnaires. Freepost envelopes were provided to all customers with clear instructions on how to return completed questionnaires. In this stage ManCo's ED aspired to target the survey towards 1000 randomly selected customers (600 existing and 400 potential customers). The company sought a 50% response rate.

Taking action: The final survey instrument was agreed jointly by the AR team and company with 800 questionnaires sent out in March 2011 to the customer sample identified by ManCo. Completed surveys were returned to the company by 31 March 2011. To minimise error, a ManCo employee was assigned to record the number of surveys returned. Out of 800, 120 completed surveys gave a response rate of 15%. ManCo transported completed surveys in batches of 20-25 to the AR team at the university. Data entry was undertaken by a skilled research assistant who used a pre-designed coding plan for speed and accuracy. This process took two weeks and entries that did not tie in with coding were cross-checked by a senior researcher before data were imported into the Statistical Package for the Social Science (SPSS) software. A report was prepared by the AR team.

Evaluating the action: At this point in the Cycle analysis and reflection was undertaken by the research team. Preliminary findings were discussed with the AR team and a meeting was arranged with the ED. He was initially overwhelmed by the result. Having taken time to consider some of the outcomes the ED sought further clarifications and more analysis. The AR team continued to meet to

discuss these additional findings. In October 2011, these results were presented back to ManCo in a Supplementary Data Analysis report.

4.3 Cycle 3: Acting on the knowledge

Diagnosing: In this phase of the AR cycle, ManCo's ED and his sales team evaluated the report. They then '*discussed and highlighted the results of the report to the management team'*. A ManCo management meeting discussed the key findings emerging from the report and this was then used to guide the strategic decisions of the business moving forward. Discussions ensued around how this might be undertaken, how to remove obstacles and who would be responsible to ensure tasks were carried out. This was challenging.

Planning action: Based on the survey results, the management team considered which business processes needed to change. The ED commented that '*it took 3-4 meetings over a six month period before we began to identify specific actions, customers' communication before we fed into and produced our strategic plan'*. According to the ED the research enabled ManCo to plan key actions.

Taking action: The company maintained an open dialogue with their customers. For example they are convinced that trade events worked and these should be maintained. They have introduced a more tangible communication and reward system to retain high value customers and have made a conscious effort to attract more customers like that. This was implemented through different communication channels i.e. telephone, email and postal. ManCo identified the high value customer group to nurture. They have looked more at potential customers who are in a position to purchase ManCo products and have become more strategic in the use of their resources. This has brought another dimension to the role of the sales professional within ManCo.

Evaluating the action: The collection and analysis of the customer data focused the minds of the senior staff in ManCo. Over the next few years knowledge acquisition about their customers they believe is more fully informed and their strategy is clear. They know the areas where they are going to build innovations into the product design and at what cost to the customer. They reflected on how the research project impacted upon employees and believe that, by sharing the findings of the research with employees, they are better informed about customer needs and the importance of good design to inform the company strategy. At the time of writing in terms of the impact of the research on customers it is too early to evaluate. It is possible that another survey could be undertaken in 12 months' time to see if problems identified by customers within the survey have been resolved. Although the UK is still in recession the fortunes of the company have been reversed. ManCo may not have initially recognised the value of the research. The payback is there yet, according to the ED, there is '*work still to do'*.

5. Conclusion and reflections

The university-ManCo relationship worked extremely well because university researchers were prepared to engage with the company at every level. By using participatory AR (Udas, 1998; Stringer, 1993) everyone not just the ED was included in the project. The research team engaged in a meaningful way with the company and encouraged co-construction of knowledge. From the company perspective the relationship was a great example of a real partnership between academic researchers and business. According to the ED this was a unique contrast to his previous experience of consultancy '*which has a why don't you do this attitude'*. ManCo are going into production with a new model and this has been influenced by the results of the survey. For example sound insulation will be offered after they spent a lot of time looking at sound–deadening materials and vehicles are much quieter. This has been done in–house rather than by the manufacturer and has given the company a competitive advantage. The ED reflected that the company has gone from strength to strength. The findings informed the company's future strategic direction.

Beyond the application to the single company involved in the research project, the findings have implications for policy, academic practice and the SME community. The work described here demonstrates the value of Action Research in developing 'bottom up' models of partnership between universities and SMEs. The findings in relation to the usefulness of the method to promote such partnerships are not peculiar to the sector described, and should be of value to anyone seeking to promote SME engagement with the HE research community.

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