Choices and Responsibilities: A Human Centric Approach to University-Industry Knowledge Transfer

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A paper presented at the British Academy of Management Conference 2007 (BAM2007), Warwick Business School, 11th - 13th September 2007.

**CHOICES AND RESPONSIBILITIES
A HUMAN CENTRIC APPROACH TO UNIVERSITY-INDUSTRY
KNOWLEDGE TRANSFER**

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Paper submitted to the **Corporate Social Responsibility Track** of the

British Academy of Management Conference 2007

Word count: 4948

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SUMMARY

The paper reflects on the growing complexities of management education in which business practitioners invite selected academic institutions to develop partnerships for resolving practical challenges and equipping those in the workplace to make more reflective and enlightened choices. European examples from Cambridge and Nottingham illustrate that successful industry and academic collaborations embody long-established themes of mentor-mentee, master-learner relationships. This human centric approach yields personal characteristics for reflective practitioners which enhance innovation, productivity and reputation building. The examples presented in this paper are then placed in a broader university – industry knowledge transfer context, using a so-called 'bow tie' model.

The authors believe that by shifting the attention from processes to people, from productivity to individual and collective growth and maturity, and by starting to apply the best practices of our human heritage we can make a difference. It is the responsibility of all stakeholders of education to support and contribute to this shift.

Key words: university-industry; knowledge transfer; innovation; leadership; educate

ABSTRACT

The paper reflects on the growing complexities of management education in which business practitioners invite selected academic institutions to develop partnerships for resolving practical challenges and equipping those in the workplace to make more reflective and enlightened choices. European examples from Cambridge and Nottingham illustrate that successful industry and academic collaborations embody long-established themes of mentor-mentee, master-learner relationships. This human centric approach yields personal characteristics for reflective practitioners which enhance innovation, productivity and reputation building. The examples presented in this paper are then placed in a broader university – industry knowledge transfer context, using a so-called 'bow tie' model.

INTRODUCTION

Knowledge creation and knowledge transfer are two frequently used expressions both in industry and in management education. In this paper we devote our attention to the latter. Knowledge transfer is defined here as the transference of ideas, research results and skills between universities and businesses to enable innovative new products and services to be developed. Much attention is often given to identifying the various dimensions of knowledge itself, as for example the suggestion by Simmonds et al (2001) that knowledge comprises both 'information' (facts, axioms, symbols) and 'know how' (accumulated practical skills). However our focus is not so much on the typology of knowledge as the mechanisms by which effective transfer can take place.

Ford (2007), drawing on the work of Weisman and Anthony (in Simmonds *et al* 2001) suggests that there are four ways in which knowledge can be transferred:
1. *involvement* – participation in learned organizations;
2. *association* - formal or informal interaction with others;
3. *experience* – knowledge acquired through implicit learning;
4. *direct education* – formal learning pursuits

Survey evidence reported in Simmonds et al (2001) suggested that the primary source of knowledge for practising managers was experience, followed by association, then involvement and, last of all, education. Indeed there has been a long standing and extensive discussion as to the relevance and value of undergraduate degrees to knowledge transfer for the world of work (Veblen 1918, Mullan and Gillin 1998, Lester 1999) and the role of Business Schools in particular (Owen 1970, McCormack 1984, Porter and McKibbin 1988, Segev et al 1999, Piercy 1999, Shipper 1999). This is perhaps unsurprising given the well chronicled antipathy of universities to practice-based education.

Wheatcroft (1970) mentions that universities initially objected to introducing academic qualifications in business, organizations and management because these areas involved subjects that required vocational training. It was argued that a university education existed to give its students a critical and analytical approach to knowledge, rather than a professional one directed explicitly to pecuniary ends. Whilst such perceptions are now largely historical, with Business Schools an integral

part of universities, there is still considerable dissatisfaction as to the interface between academia and the world of work. Indeed, various authors have called for a fundamental review of management education (e.g. Senge, 1990, Mintzberg, 1994, 2005, Hock, 1999, Bennis and O'Toole, 2005). Weick (2001) identifies a significant 'relevant' gap between when business requires and what business academics research (see also Pfeffer and Fong, 2002). Some have argued that our traditional educational approaches are deeply rooted in a mechanistic view of management evoking the illusion of control and predictability (Berends, P. and Glunk. U. 2006), whereas daily experience in the workplace shows that events are not necessarily predictable and controllable. Even the deployment of increasingly sophisticated information and decision support systems cannot take away the need for human judgment in a social context.

Some management educators have therefore started to engage in a more serious debate as to how to prepare individuals and organisations to make sound human judgments as regards decision making. Most of the textbooks treat the subject of management and management development in a highly detached way, focusing on a variety of sophisticated, often quantitative techniques to yield 'optimum' solutions and often prescriptive training programmes to further the attainment of technical competencies by position holders. This suggests that the manager as a person is not of primary importance to managerial effectiveness. Practice, however, suggests the opposite. Success in managerial or leadership roles depends to a great extent on the level of maturity, growth, self-awareness and personal mastery (Covey, S. 1992, Platt, J. 2003) of the individual. Business Schools, arguably, still need to come to terms with these facts, and redesign the curriculum in ways which provide opportunities for self-discovery, personal development, and reflection, questioning and individual growth.

REFLECTIONS ON BUSINESS EDUCATION

Much of the contemporary rhetoric involving business focuses on competition amongst mainly private sector commercial organizations. Various profitability ratios are seen as the yardstick of 'success', with efficiency optimization within existing processes and innovative developments of new processes and products regarded as key contributors to such profit related outcomes. However a more holistic perspective on business activity might provide a more useful context in which to debate the contribution of Business Schools, especially as regards work and leadership. In the pursuit of such a perspective we begin by reviewing the philosophical roots of rather different views of work and leadership in the US, Europe and South East Asia.

Taylorism
A somewhat negative starting point from which to begin our quest to better understand approaches to work and leadership is to review Frederick Taylor's development of Scientific Management (1911) in which he famously defined the kind of person he wanted as an employee:
'Now one of the very first requirements for a man who is fit to handle pig iron as a regular occupation is that he shall be so stupid and so phlegmatic that he more nearly resembles in his mental make-up the ox than any other type'

The account in Frederick Taylor's biography (Kanigel, 1997, p.460) of how the followers of Frederick Taylor viewed workers makes chilling reading. Asked in a House of Representatives Special Committee hearing as to how he saw the role of a male employee, Herbert Stimpson, a well known advocate of Taylorism, said:

'as a little portable power plant …a mighty delicate and complicated machine…the physical body of the man is constructed on the same mechanical principles as the machine is, except it is a very much higher development. Take the human arm; look at the flexibility of motion there…'

Of course Taylorism is but one perspective impacting from North America, as is the so-called 'Austrian School' amongst competing European perspectives, but it does provide a useful counterpoint to scientific management.

Austrian School of Economics
Taylor clearly separates the inner aspect from the outer aspect of work and claims ownership of the inner aspect, and in so doing arguably demeans and enslaves those who are then dependent on that guidance. Some would argue that Taylorism is somewhat representative of neo-classical economics, with knowledge seen as providing only temporary benefits to producers, any resulting additional profit seen only as temporary and competed away by markets inexorably moving from one static equilibrium outcome to another. However authors such as Hayek and Schumpeter, of the Austrian School of Economics, take a different view, focusing on the role of knowledge in markets and exploring the tentative and unfolding nature of continuous economic change. The normal state of markets is seen from this perspective as disequilibrium, not equilibrium. This dynamic continuously evolving state, markets signal much more than whether particular prices or levels of profitability are sustainable – rather they are seen as dynamic systems intrinsically capable of providing signals which reflect values and context-specific knowledge.

In such a dynamic, continuously evolving economy, entrepreneurship becomes an important concept. The very unpredictability and chaotic state of affairs which is hidden away in the neo-classical world now becomes the means by which mainstream market processes are established. Entrepreneurship involves grasping an opportunity, through alertness and the recognition of situations in which unvalued resources or unsuspected value occur at which point, the opportunity presents itself and attempts to grasp such opportunities are mediated through a framework of goals, values and expectations. Thus competition is now seen as more than a mechanism for yielding temporary profit advantages but as the process through which knowledge in its widest sense is discovered.

In the Austrian School, the act of noticing becomes central to business and economics with human conduct considered to be intrinsically meaningful and to be understood in ways which have no counterpart in nature and certainly not in mathematical laws. Business suddenly must be seen in the context of the historical development of a culture as a whole, with knowledge now viewed in a human, context-specific sense. Eraut (1994, p.104) remarks:

'The 'act of attention' brings experiences, which would otherwise simply be lived through, into the area of conscious thought; where treatment may vary from actual comprehending to merely noting or hardly noticing.'

Business and Procedural Justice
The Austrian School also views business activities as inextricably linked to the attainment of procedural justice, defined as the extent to which the dynamics of a decision are judged to be fair by the participants in that decision. Following the seminal work of Thibaut and Walker (1975), procedural justice in the work setting requires knowledge sharing and a commitment to learn taking the form of essentially voluntary activities in which individuals choose to participate. As Hayek 1945, p.521-2) comments:
'....practically every individual has some advantage over all others in that he possesses unique information of which beneficial use might be made, but of which use can only be made if the decisions depending on it are...made with his active co-operation.'
Kim and Mauborgne (1997) review much of the literature and suggest that in business, three criteria, consistently applied, will lead to procedural justice.

- *Engagement* – The opportunity for individuals to input into a decision, and allowing them to refute the merits of one another's ideas and assumptions.
- *Clarity of expectation* – A shared understanding amongst the involved group of each others' responsibilities and what is individually expected of them.
- *Explanation* – Where everyone involved ultimately understands why a certain decision has been taken.

Business and Zen Learning
This Austrian School perspective in which individuals matter within competitive processes and can influence their outcomes, is also reflected in various Asian-Pacific approaches to learning, such as that in Japan. In his introduction to Herrigel's book *Zen in the Art of Archery* (1985) Suzuki says:
'One of the most significant features we find in the practice of archery, and in fact of all the arts as they are studied in Japan and probability also in other Far Eastern countries, is that they are not intended for utilitarian purposes only or for purely aesthetic enjoyments, but are meant to train the mind; indeed to bring it into contact with the ultimate reality. Archery is, therefore, not practiced solely for hitting the target; the swordsman does not wield the sword just for the sake of outdoing his opponent; the dancer does not dance just to perform certain rhythmical movements of the body. The mind has first to be attuned to the unconscious. If one really wishes to be master of an art, technical knowledge of it is not enough. One has to transcend technique so that the art becomes an 'artless art' growing out of the unconscious.'

Having reviewed various approaches to 'business', we briefly turn to 'education'. The origin of words sometimes gives an insight into their meaning. The English verb 'to educate' comes from the Latin verb *educo, educare* – 'to lead forth, to bring out' (the Latin verb *duco* means 'to lead'). Thus education involves leadership and leadership implies a responsibility for education. However, also implicit in 'to lead forth, to bring out' is the understanding that what the leader takes responsibility for

and brings into the light is not something he created or implanted, but rather something that is already there, if as yet unrealized.

Reflections on Leadership
Looking further into Japan's view of life as a learning process of growth towards aware maturity, Zen learning (Digenti, 1996) emphasizes the closeness and subtlety of the student/leader relationship and its longevity, through repeating cycles of action and reflection over thirty to fifty years, in a three-fold learning process traditionally known as *shu ha ri*. The ancients describe *shu ha ri* as a learning process which goes from 'shallow to deep to shallow', so that there is firstly a superficial understanding based upon learning rules by rote; the second stage involves expanding the learning to various applications and situations, in order to deepen; and the final stage is shallow again, as 'upon reaching the final stage all bonds are broken and one is completely free. This freedom, however, is none other than to observe the rules, but now the rules can be understood from a perspective of freedom, in that they are now applied not through slavish imitation but through an understanding of their inherent wisdom.

In this context, the responsibility carried by the leader for formative guidance – for care and respect for the person being guided – and the responsibility of the student to try to give life to the guidance of the leader – a reciprocal caring and respect – is tangible. This stands in stark contrast to the scientific management approach outlined above, which can be clearly seen as a formidable and deliberate limiting of liability – a resolute avoidance of any relationship.

In contrast to Frederick Taylor's demeaning approach, here is a British contemporary, Sir Robert Hadfield, in Sheffield, talking about his workmen (Tweedale, 1994):
'Until I introduced my scheme at our Works, the work people had to start at 6am and without breakfast. We first tried 52 hours and then in 1894 …went straight to the 48 hours a week, the men coming in after having had their breakfasts at home. This too without any reduction in wages for the shorter time worked.'

Sir Robert Hadfield's empathic feelings for his men and his human centric approach to leadership, are clear from his words and it seems that his refusal to see the competitive process as inevitably involving a slavish adherence to the longer working hours of his rivals, in no way impaired the productivity of his employees and thereby his profitability, in fact quite the contrary.

This 'enlightenment' aspect of leadership has been long advocated, as in the writings of Plato who said 'work is effort applied to difficulty. It always has internal and external results.' Here, Plato is pointing to work as part of that enlightenment process. This definition instantly includes as 'work' the inner struggle involved in coming to understand something and sets this alongside the outer effort involved in making something, regarding both as being of equal value. Indeed Plato arguably regards the former as of greater value, because the development of the understanding has to be complete before the outer product can be made, which becomes the embodiment of that understanding.

This is work being taught as an end in itself, as a way of life in which the meaning of all things is seen in the context of the whole and thus each thing is done for its intrinsic value, a process in which all parties to any engagement express themselves, listen, absorb and respond, and find themselves incrementally enlightened through their relationship. The Protestant work ethic honoured work-based activities as a process of personal growth.

The core task of leadership in the management of technology, the subject matter of our first case study presented below, is seen in terms of establishing techniques for the more efficient combination of resources in production, but in making work-based relationships more transparent since human growth, motivation and ultimately even productivity is seen as directly related to human-centric approaches to leadership.

It is with this sense of a leader needing a deep understanding of humanity, and of needing to find what manufacturing and technology means to humanity, that we can begin to look at the Cambridge Manufacturing Leaders' Programme. It will be apparent from the above that whilst we are concerned with the Profession of manufacturing, and the 'how' is continuously important for management, leadership has to be constantly concerned with the 'what', and 'when' and 'where' and above all, why.

THE CAMBRIDGE MANUFACTURING LEADERS' PROGRAMME

Perhaps the most striking feature of all Cambridge teaching is that it is rooted in relationships. No teaching is ever abstract. This is visible in the one-to-one tuition on real problems, in context, in their companies, which is at the core of the Manufacturing Leaders' Programme (MLP), but it is also visible in two important aspects of the programme which make it different from a typical MBA programme, with which it might be compared.

Firstly, as one wit said, 'the MLP is an MBA without the engineering taken out'. It is not possible to be a leader in manufacturing without maintaining a leading edge understanding of the technology by continuous engagement with it. This is thus one essential relationship which is maintained within the course and it immediately leads to the other, which is that, while there is much understanding in manufacturing that is common across fields and can be translated from one area to another, it is also true that each application is unique, and sustained engagement with that application in that location is essential to really develop a deep understanding.

Thus the MLP does the opposite to what most MBA programmes do. Many MBA programmes represent a personal career path in which an individual breaks all ties with their existing company, spends a year removed from industry and then moves elsewhere for a far higher salary. In contrast, you cannot apply personally to join the Cambridge Manufacturing Leaders' Programme. A company, however, recognizing that it has someone typically in their early thirties who is of a caliber such that by their early forties they will clearly be carrying serious leadership responsibilities, may apply for a place on the course and will pay that person's fees, wishing to broaden that person's outlook.

The programme is then spread over two years and the person engages with it in addition to, and without a break from, continuing to carry the responsibilities they already shoulder in the company. Indeed as a major part of the programme, they will initiate and follow through a major strategic development project within their company, and will be assessed on the quality of their approach to that project and its relevance to the company's development and its success, as well as being assessed on their learning about the leadership process in that live engagement.

The programme moves through four stages, each beginning with a three week intensive module in Cambridge, involving study of the experience of others, including contact with exponents of world best practice, but also involving much peer group time with their programme colleagues (a group of ten to twenty people a year). Each module is then followed by several months of project effort in their company with their company colleagues. This first involves auditing the current state of manufacturing processes to define strategic development needs, secondly developing a plan and thirdly implementing that plan. (Cambridge considers manufacturing to include everything from perceiving a market need and developing a market position, through research, design and development of both the products and the manufacturing processes, to full production and following support, including at all stages full understanding of the human issues involved and all the financial aspects, etc.)

The reports required at each stage, plus the periods back in Cambridge, provide reflective time absorbing and internalizing the understanding that emerges from the engagement in the process, the aim being to develop what Schön (1983, 1987) calls 'a reflective practitioner'. Each year group is already an international mix and the study periods in Cambridge include international visits and the consideration of manufacturing internationally, so that the programme participants, while never disengaging from their own company's needs, are stretched to consider manufacturing world-wide. The final thesis is then a reflective review of what they have understood about the process of leadership themselves, through their two years of guided engagement and study.

What might be evident from this description is that the programme not only honours and preserves but actually points to the programme member's existing relationship in this company with the people he or she is responsible for, and makes it the central feature of his/her programme. The tutor does not simply give guidance from afar but spends time in the company, with guidance in leadership given to both the leader and his/her team, in their own work-based context.

This approach has been at the core of Cambridge's teaching of manufacturing for thirty years. Sensitivity to the detail of circumstances has to be combined with the observations of others captured from their experience and passed on as advice. Out of the struggle of this combination process comes enlightenment – real understanding – the real ability to make a difference. In all of this the experience of leadership engagement is primary, as much of what the tutor is passing on can only be passed on in context. Leadership competences cannot be developed in abstract, cannot be taught in a 'handing over information in a classroom' sense, because they cannot be reduced

to packages of abstract information. Rather leadership competences are a set of dynamic skills, alert sensitivities and well honed responses to circumstances that have to be developed in guided practice, just as a football team acquires its skills by practicing them under the eye of a coach. It has to be demonstrated by a competent practitioner. In other words it requires proper professional mentoring. Schön (1987, p. 93) captures the process very effectively in his description of the 'master class' approach to passing on the skill of design in architecture:

'It is as though the studio master had said to him, 'I can tell you there is something you need to know, and with my help you may be able to learn it. But I cannot tell you what it is in a way you can now understand. I can only arrange for you to have the right sorts of experience for yourself. You must be willing, therefore, to have these experiences. Then you will be able to make an informed choice about whether you wish to continue. If you are unwilling to step into this new experience without knowing ahead of time what it will be like, I cannot help you. You must trust me.'

MANAGEMENT AND LEADERSHIP UNDERGRADUATE PROGRAMMES: NOTTINGHAM AND CAMBRIDGE

Strong echoes of this human-centric approach to the development of work-based leadership skills can be found in the undergraduate leadership programmes in Nottingham and Cambridge. The emphasis in both is on the role and contribution of mentoring within the respective programmes, which perhaps best exemplifies the underpinning human-centric philosophies.

The need for personal support in developing leadership skills has been widely recognised in recent studies (Gregson 1994, Megginson and Clutterbuck 1995, billet 2000, Sullivan 2000, Kleinman et al 2001, DTI 2003), with the mentor/mentee relationship seen as a cornerstone in leadership being regarded as a 'transferable skill'. Stewart and Knowles (2003) take the discourse further by using the BA (Hons) in Business Management (BABM) programme at Nottingham Business School (NBS) as an exemplar.

Whilst there is vigorous debate as to any precise definition of mentoring, Sullivan (2000) captures the reflective practitioner perspective adopted in the earlier part of this paper. *'The role of mentoring is to enable the mentee to reflect on actions and, perhaps, to modify future actions as a result; it is about enabling behavioural and attitudinal changes'* (Sullivan, 2000, p.163).

Stewart and Knowles (2003) support this approach to mentoring because of its
        '…emphasis on the ownership of learning and decision making as resting with the mentee, and in highlighting the importance of reflection in those processes' (Stewart and Knowles 2003 *op cit*, p.150).

Both these features are seen as key elements of the mentoring concept adopted by the BABM programme within this programme. Each student is allocated two mentors: the academic mentor is a member of staff in NBS who is assigned to the student at the beginning of the second year; the work-based mentor is a member of staff in the placement organisation. The student normally keeps the same person as a work-based

mentor throughout their placement, who may be an HR practitioner or a senior line or operational manager. For others, the work-based mentor changes during the placement, often because students move around the organisation, functionally and/or geographically, during their two years with the employer.

The programme design does not specify a model that has to be adopted by employers, although it does specify the expected role and support to be provided by both academic and work-based mentors. In summary Stewart and Knowles identify the following key roles in mentoring:

- *Coaching* – where the mentors help and encourage the student to understand both work and course related issues and to develop their skills and capabilities
- *Facilitating* – where students' mentors are familiar with the aims and objectives of the course and are in a position to help the student 'make things happen'
- *Networking* – where mentors provide an important framework for communication within the course, by supporting the students in developing their own network, in addition to adding value through existing formal and informal channels of communication.
- *Counselling and supporting* – where mentors advise and support the students over issues such as stress management, motivation, work relationships, performance problems and moral support.
- *Assessing* – where both mentors are required to assess and grade skills development reports and plans that are produced at the end of each in-company work period, providing both written and verbal feedback on the reports

The findings of two pieces of research are identified by Stewart and Knowles as of particular importance to the role of work-based mentors in the programme. Kleinmann et al (2001) found that role-modelling is significant in achieving learning outcomes associated with skills development. Billett (2000) agrees and reports that mentees rated the value of coaching and role-modelling provided by mentors very highly. Such studies suggest that the BABM programme is wise to utilise work-based as well as academic mentors. Kleinman et al (2001) also identify the importance of organisational socialisation and personal learning as significant mediating factors in achieving positive or beneficial outcomes from mentoring relationships.

The recently validated BA Management and Leadership (BAML) degree in the Ashcroft International Business School of Anglia Ruskin University takes a similar view as to the key role of mentoring in a work based context for developing the reflective practitioner and leader. Indeed the Anglia Ruskin variant of NBS provides for all three undergraduate years to be undertaken with a single employer, blended learning throughout being interspersed with two block release periods on intensive study of, normally, two weeks duration in each year.

As with the BABM, the BAML programme draws on research (Watts 2006, Yorke and Knight 2006) to emphasise the contribution of academic and work-based mentors and experiences to the development of:

- Understanding (related to the wider application of knowledge in context).
- Skills (including skilful practice and the deployment of such skills)
- Efficacy skills (including students personal views/insights and qualities)
- Meta-cognition (including self-awareness and the capacity to reflect and learn)

UNIVERSITY-INDUSTRY KNOWLEDGE TRANSFER MODEL

It may be useful to conclude by seeking to place this human-centric approach to work-based learning in a broader context of university – industry knowledge transfer.

Ford (2007) notes that evidence from Germany and the USA (Acworth and Ghose 2004, Steinbeis 2004) and the UK (Simmonds et al 2001, DTI 2005, Lambeth 2003) suggest that human centric models are the most effective for university – industry knowledge transfer. Ford (2007) also reports on a number of industry surveys and case studies amongst small manufacturing firms (SMMs) as highlighting the value of mentoring, coaching and listening to knowledge transfer between universities and SMMs, as opposed to an excessive reliance on the communication of technical approaches and solutions.

Ford develops the knowledge transfer model presented in Fig.1 to capture key features of this human centric approach, with the resulting 'bow tie' concept usefully
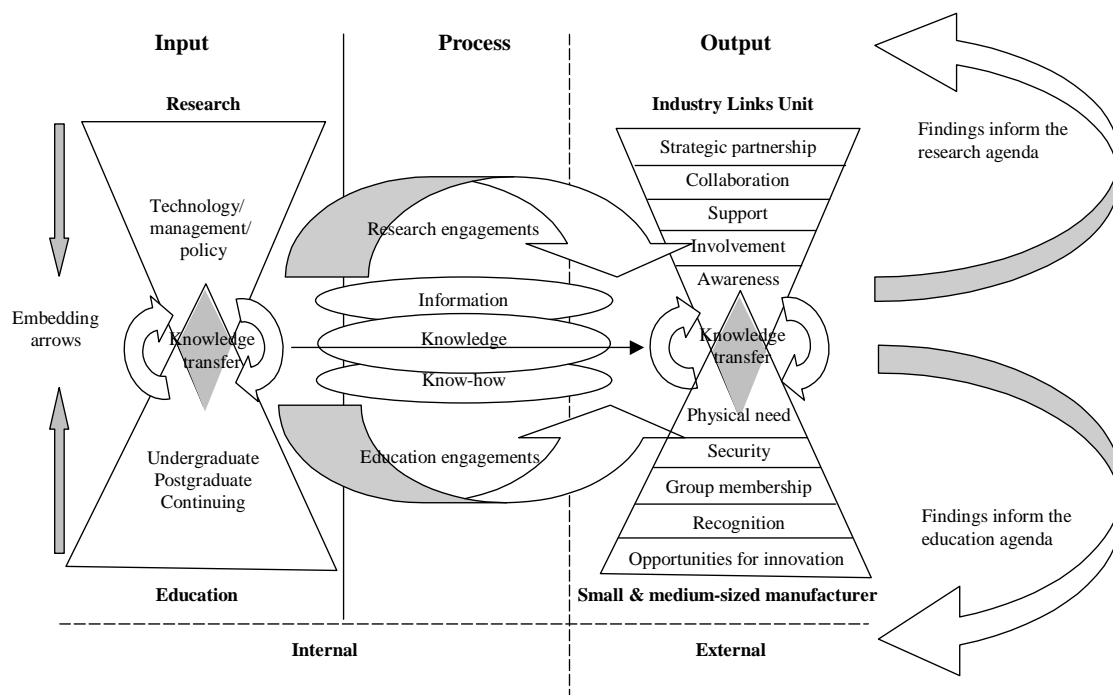
highlighting a number of key features of the model.
Figure 1 'Bow tie' model for university-industry knowledge transfer

The suggestion here is that a human centric model based on researchers', academics' and industrial fellows' know-how is an effective method of university-industry knowledge transfer. The new model includes elements specifically relating to knowledge transfer partnerships, consultancy/problem solving services and student

projects. A four-stage university-industry knowledge transfer is identified and presented using a bow tie structure which has two wings or zones which are held together and intersect at the knot. The 'bow tie' concept is typically used to provide a visual representation of the organisational structure of the world-wide web using a three-stage input, process and output model which is divided into internal and external process elements. The knot of the bow tie represents the knowledge transfer arena in which Maslow's Hierarchy has been inverted to add clarity. The embedding arrows are used to indicate that as the wings of the bow tie move towards each other, the area of knowledge transfer is increased as the knot of the bow tie increases in size. The area of knowledge transfer represented by the knot is the open arena presented in the Johari Window [2006]. This open arena is frequently described as the "known-to-self" and "known-to-others" window. Initially there is limited opportunity for knowledge transfer as the open arena is small. However, as the open arena enlarges in size the area of knowledge transfer increases and the other quadrants in the Johari Window decrease in size.

CONCLUSION

In this paper we set out to reflect on the challenges of management education and identified two areas where change is particularly necessary. These two areas are: individual care, mentoring and personal development as an integral part of growth and nurturing the full development of individual talents. The second area is the development of close partnerships between industry and universities and creating an open channel for knowledge creation and knowledge transfer among the participants.
We outlined the successful examples form Cambridge and Nottingham where students, industry representatives and academics have been growing from strength to strength for many years. We suggest that these cases can serve as an example and inspire academics and business practitioners all around the world to join forces and explore meaningful ways of sharing knowledge and developing talent.

Even though individual circumstances are different, we believe that by shifting the attention from processes to people, from productivity to individual and collective growth and maturity, and by starting to apply the best practices of our human heritage we can make a difference. It is the responsibility of all stakeholders of education to support and contribute to this shift in society. After all it is not our skills, it is our *choices* that define us as human beings.

Choices and Responsibilities
A Human Centric Approach to University-Industry Knowledge Transfer

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