KNOWLEDGE, LEADERSHIP, COMPETENCIES, MINDSETS AND THE ROLE OF EDUCATIONAL AND RESEARCH INSTITUTIONS

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ABSTRACT

Professional people face different career paths to those of the past. Each professional person must increasingly see his or her life career as a microbusiness and manage the same professionally. Pursuing a single discipline and aligning oneself with the functions and processes in a particular organisation or branch of industry will put a professional person at considerable disadvantage in the 21st Century networked business environment. The question is whether or not the current model of education and professional development is relevant, effective and efficient, or a new approach is needed. The author undertook research to respond to these questions. A surprising model has emerged: it can be labeled as *holistic* or a *3 dimensional model*. The holistic model has a major emphasis on the development of multiple competencies. The author has presented this model, and cited his University's PM Programme as a case study to show that universities can respond to the challenges of 21st Century provided that they are prepared to break the past century's moulds and embrace the challenges of the emerging world.

KEYWORDS

Knowledge, Leadership, Competencies, Educational Institutions, Project Management

1. INTRODUCTION

"Building sustainable learning communities with complex organisations in an era of rapid change is the challenge of the future. It requires a deep understanding and appreciation of the subtleties of human nature, the challenges of individual and systemic growth, and the processes of lifelong learning, effective teaching, and transformative/moral leadership." (Boyd and Cooper, 2001)

In this paper the author addresses the following: a historical perspective on change and its ramifications for professional people; a survey of perceived critical professional competencies needed versus perceived educational shortcomings; a 3 dimensional model for professional education and preparation; and a case study that shows how the new philosophy can be put into action.

2. A HISTORICAL PERSPECTIVE

Figure 1 shows the author's historical analysis of the revolutions (massive changes) that have swept the world in recent times. The first revolution was that of rapid industrialisation and economic expansion of the world following the second world war, including introduction of national protectionist measures.
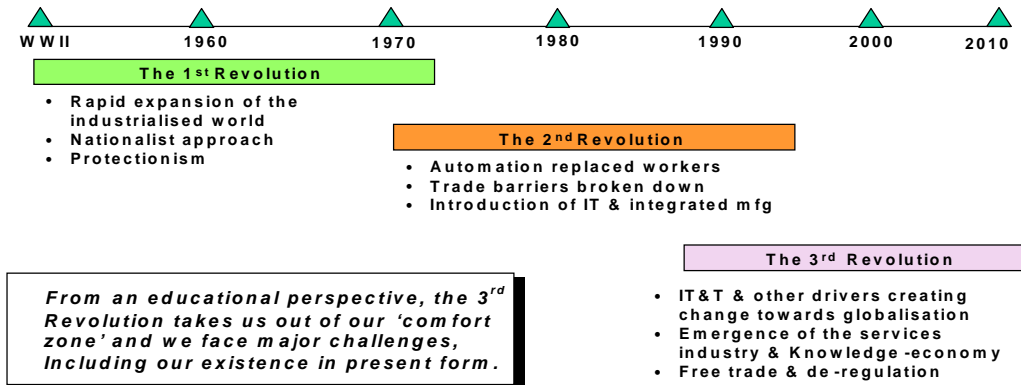
Figure 1: A Historical Perspective of Rapid Changes in Recent Times

The second brought with it automation that replaced large numbers of workers in industrialised world. During this period the trade barriers began to come down and the IT and integrated manufacturing took root.

The 3rd revolution is still in progress; it is characterised by rapid globalisation of the world economy, free flow of capital globally, emergence of services sector and a large number of knowledge workers, who in advanced nations make up for up to one third of the entire workforce.

A major enabler for economic globalisation is the information and telecommunication technology advances. Globalisation is also being fuelled by creativity, innovations in supply chains, liberation of markets, explosion in knowledge, networking & strategic alliances and ruthless efficiency drives. In contrast, during much of the last century economic competitiveness was dependent on cost competitiveness through provision of low cost factors of production, i.e. labour, materials, energy and capital. The cost of goods was often substantially dependent on the cost of the production factors (>80%). In contrast, in a high tech product (e.g. a drug or a bionic device) value contribution is typically <20% raw materials & energy, and > 80% knowledge content (Jaafari, 2001).

In the global economy goods and services are designed, sourced, procured, produced and distributed through global coalitions of small to large organisations. As noted, creation of wealth is emphasised through product tailoring, high value addition, innovation and speed to market. The whole economy is an interlocking system with widespread feeder and receiver nodes. Thanks to the fast and real time communication networks, global economy knows no boundary, or race or government barriers. It is a seamless merger of many separate national economies. It is not just controlled by supernational corporations or by cost-conscious industrialist in search of cheap labour. It is a new model for working together; wealth creation through global value chains and an unprecedented global dynamism fuelled by liberation of markets, free movements of resources and an efficient transport infrastructure (Jaafari, 2001).

3. ORGANISATIONAL TRANSFORMATION

The traditional separation of tasks in organisations was simple within a vertical hierarchy or a pyramid: leadership (or top management) assumed the role of leading, middle managers were in charge of planning and control and workers were engaged in executing the tasks and producing the relevant goods or services. This model suited the industrial economy with its focus on mass production and distribution of standard goods and services. Alvin Toffler (quoted in Riely, 1995) "says we are making a transition from the INDUSTRIAL AGE to the INFORMATION AGE. The machine is a good model for the industrial age. It is a mechanical system with standardized, interchangeable parts. It was built in a factory assembly line where work was simplified as repetitive tasks rigidly controlled by a hierarchical management. Projects were accomplished through a series of sequential processes (the product was designed then manufactured, marketed and sold). The pace was slow with long transitions between new products. Mass output was the norm for everything - mass production, mass markets, mass advertising, mass consumption, mass media, mass education, mass movements and mass religion.

In the emerging information age we are taking a more holistic view in which relationships among parts are important. A web of relationships enhances the flow of information throughout the organization using sophisticated computer systems. Leaders give vision rather than rigid rules, and empowered employees work with customers and suppliers. Speed and flexibility are important to beat the competition. There is compressed product development time as teams of employees from all departments work together. Products are customized to customer requirements, and automated machines can be programmed to make each item unique with near-instantaneous delivery. Success comes from precision, constant innovation and speed." (Riely, 1995)

To operate effectively in the knowledge economy a distributed model in which leadership, management and production tasks are distributed to all employees to varying degrees must be employed. This type of organisation is often referred to as an enabled or empowered organisation.

4. CHANGING NATURE OF WORK

During the first and to a large extent the second revolution life long employment within an organisation (whether public or private) seemed the natural way for most professionals to follow. It was common for them to align their careers with that of industry and employer. Specialist staff were often housed in factories or large offices who communicated directly with production staff to solve the production problems unique to a given employer. So most professionals developed expertise that was necessarily tied to specific operations and processes that their employer organisations employed.

The introduction of quality assurance standards changed the industry landscape and the nature of the work across industry as organisations began to question their age-old way of doing business. Newer tools and concepts were introduced such as business process re-engineering, benchmarking and so on (Jaafari, 2000). However, the nature of work changed dramatically as technology was used to automate many processes and replace many simple white collar tasks. The push to outsourcing and creation of lean organisations was a precedent to project-based organisations and cross functional teamwork. Public sector organisations too followed the trend with downsizing, corporatising and outsourcing in a major way. Many professionals who had joined these organisations for job security reasons above all, soon found themselves out of job.

In the latter part of the second revolution and the third revolution the trend to outsourcing led to the creation of a class of freelance professionals or knowledge workers. Organisations meanwhile went global and established alliances or networks to reduce risks and leverage one another's strength for marketing opportunities and to gain greater resource and capability breadth to respond to global markets. Work practices continue to change today, as these dynamics are played out in full. We are now witnessing the emergence of knowledge workers as a true force in the global economy who, despite their locations, participate in projects globally. They may be classed as gold collar workers in the sense that it is through their input that knowledge is developed and used to create value and meet the stakeholders/customers' needs competitively. The IT advances have also led to the creation of virtual organisations and global teamwork. The advanced IT tools such as visualisation, collaborative software, telepresense and the Internet have made it possible to create and deliver quite complex value chains globally.

For the knowledge worker or the professional person though this means different challenges: he (or she) has to treat his career as a microbusiness to compete for the share of work globally and to ensure that he will continue to develop his capabilities in line with the shifts in the respective field (so lifelong learning and development will be essential). Instead of aligning with a particular employer organisation the professional person must work globally, as part of teams who come together to deliver a specific outcome and or in other modes, and then move on. During a professional's life time he may take on many assignments depending on his networks or alliances formed.

He has to understand his particular industry branch so as to appreciate the relevant dynamics, as creating or adding value is dependent on it. He must also have management competencies to manage self, teams or business units in each assignment and to ensure that the right things are done and the right outcome is delivered to the customer organisation to meet the relevant explicit and implicit strategic and operational needs in a creative manner. In addition, he must possess leadership and socio-cultural competencies to know what are the right things to do and for mental toughness, resilience, cultural sensitivity, ethical and social responsibility and so on.

5. ATTRIBUTES NEEDED IN PROFESSIONALS

Thus, to function successfully professionals increasingly need to:

- Be creative and lateral thinkers
- Possess critical thinking/conceptualisation skills
- Be strategists and integrators
- Be reflective learners
- Possess an ability to optimise/customise solutions across technical, financial, social and environmental angles
- Be proactive to tap opportunities and resolve uncertainties (constant value addition/risk reduction)
- Be innovative and contribute to the evolution of best practice

6. FIELD STUDY

In 2000 a study was undertaken to find out the range of competencies that professional people perceived they should possess to perform optimally (Masters and Jaafari, 2000). Although the focus of this study was project management professionals, the results are taken to be more global due to the fact that project managers were found to have a base discipline, e.g. they are engineers or scientists or accountants or architects in the first place; they also work in a variety of organisations or assignments. In recent times, many organisations have replaced their middle managers with project managers as part of a move to downsizing and outsourcing, integrated service or product delivery approach and so on.

The study entailed both a literature review and a fairly wide survey using the Internet. It embraced over 500 professionals. The response rate was around 18% that is considered satisfactory. A range of competencies were listed and the respondents were asked to assess the criticality of each, in terms of a 5 point scale, viz: Barely Important (1), Minor Importance (2), Average Importance (3), High Importance (4) and Critical Importance (5). Separately, they were asked to comment whether or not the educational institutions were focusing sufficiently on the development of these competencies, using the following scale: Virtually No Focus (1), Minor Focus (2), Average Focus (3), High Focus (4) and Extreme Focus (5). The idea was to highlight any apparent mismatch between the two sets of perceptions. The results were analysed in the form of a weighted score against each competency point. Figure 2 shows the results. As a further step, competency points were divided into 3 broad categories: technical, management and socio-cultural. The results were then summarised in terms of these categories (Figure 3).
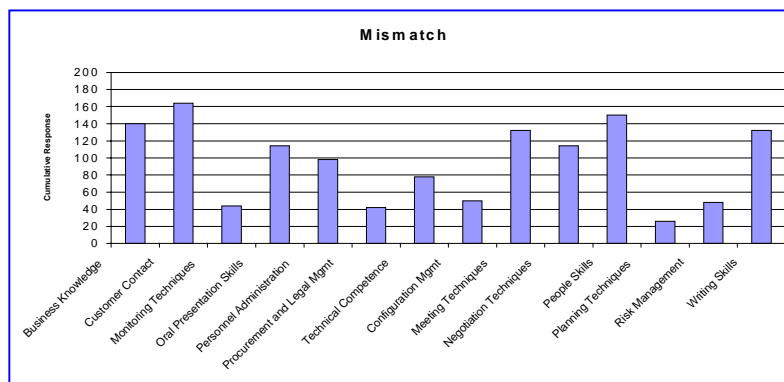

Figure 2: Perceived Deficiencies in Professional Education and Preparation

It must be noted that as with colours, competencies merge and or form a spectrum. What may be considered a technical competency can easily be classed as a management competency and vice versa. The same applies to management and socio-cultural competencies. However, the above classification is still useful as it sharpens the focus in terms of how educational and professional development programmes should be designed and evaluated.

Figure 3 signifies that technical competencies are well dwelled on currently as only 10% of the mismatches can be attributed to this category, which is low and can be associated with the error of estimation. Major mismatches occur

in management and socio-cultural competencies accounting for 50% and 40% of the total mismatches respectively (Figure 3).

One view of the above observation is that most programmes offered by universities are technically driven even though the curricula have been broadened in recent times by adding a few so-called management and humanity subjects.
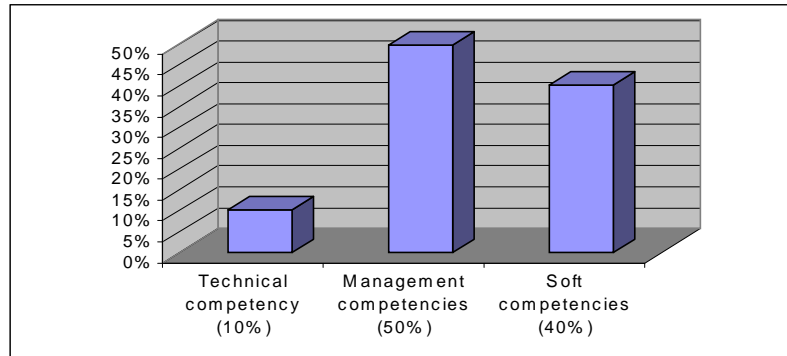

Figure 3: Relative Size of Neglect in Professional Education in Each Category

7. HOLISTIC OR 3-DIMENSIONAL MODEL

The aforementioned discussion and findings from the field study can be generalised in the form of a 3-dimensionmal model, comprising technical, management and socio-cultural competencies. Professionals need to continually develop their competencies along all the 3 dimensions. However, the balance could well vary depending on their stage of career and type of assignments undertaken. Figure 4 shows the changing balance between technical and management competencies typically experienced by most professions.
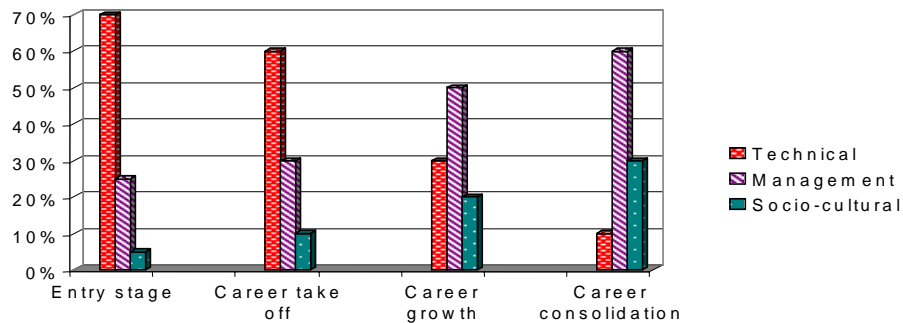

Figure 4: Typical Mix of Competencies at Different Career Stages (total competencies = 100%)

As seen, management competency is needed right from the start of the career and the need for it rises in line with the development of the career. This is because the capability to participate and deliver the required outcomes to client or employer organisation is vital from the start of the career. So it must be a core component of one's professional development concurrent with grounding in a particular discipline.

8. THE CASE FOR SYSTEMIC ACQUISITION OF COMPETENCIES

It is acknowledged that different persons achieve the required multiple competencies through different means. At the one extreme a person is thrown in at the deep end after completing an undergraduate course in a technical field and has to work things out the hard way from daily experience and observations. At the other extreme there are those who undergo substantial preparation every inch of the way. In between, a spectrum of situations can be found in

practice. However, a lot of efforts in self development tend to be a hit and miss affair as learning and development activities are not part of a holistic approach or integrated sufficiently, particularly to develop management and socio-cultural competencies.

Time scale is also another factor. For reaching the same scale of competency a proactive integrated and focused approach might take half or less time compared to a less organised approach. If we treat each individual's career as a microbusiness it is abundantly clear that an accelerated approach is more rewarding and the investment more than pays for itself within a short period of time. The benefits also extend well beyond economic rewards as the competent person enjoys a degree of confidence, a sense of satisfaction from realising goals expeditiously etc.

9. MEASURING COMPETENCIES

The author subscribes to the view that if something cannot be measured it cannot be improved. So competency should be assessed using well-defined criteria and an appropriate scale. For measuring technical competencies the traditional professional bodies have developed measures and criteria, and since these are discipline specific it is best left to the relevant bodies to handle. For management and socio-cultural (or soft) competencies we have developed a 5-point competency scale, and an appropriate set of criteria. In addition to these, we have developed appropriate on-line tools that assist self, peer and employer evaluation of these competencies.

10. PM-OUTREACH CASE STUDY

The PM-Outreach Programme was designed to take students/practitioners from any discipline and assist them to acquire the needed management and socio-cultural competencies in an accelerated and focused manner. Prior to entering the course each practitioner/student is encouraged to undergo the processes of assessment to chart his/her existing competencies; then through a defined process and assisted by mentors, determine his/her targets for both management and socio-cultural competencies. A well-structured workshop over a 2-day, is conducted and the outcome is that each student will end up with a personal Learning & Development (L&D) plan as the basis of the acquisition of the needed competencies. This plan optimises the person's efforts in self-development over the designated period and is the basis for monitoring throughout the same period.
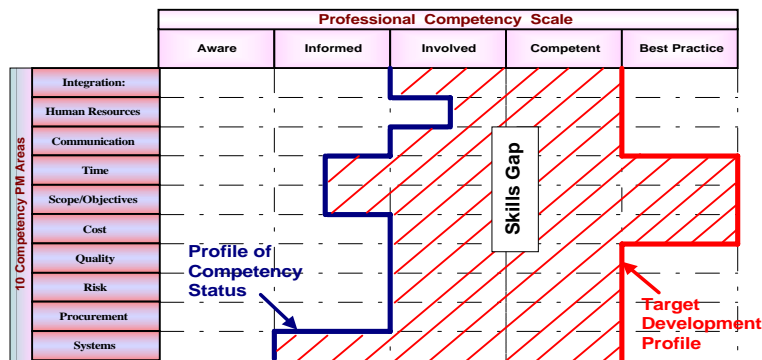

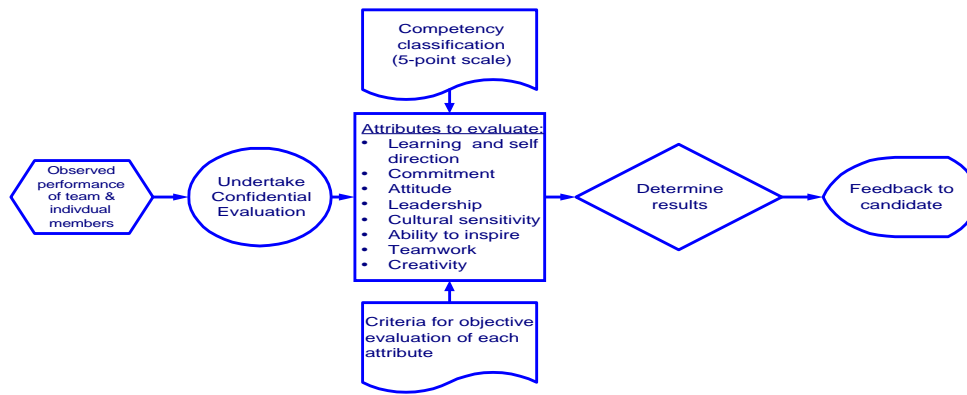**Figure 5: Representation of a Typical PM Competency Gaps Delineation**

Figure 6: The PM-Outreach Approach to Development of Soft Competencies

Soft Competency Variable	*Basic*	*Acceptable*	*Good*	*Superior*	*Best practice*
Learning and self direction	Has a basic knowledge of the influence of these soft variables on performance	Some experience on management of these variables (including use of tools) to positively influence own & team performance)	Has measured the response to own/team/ organisation behaviour in particular contexts & has implemented favourable changes	Has experience in applying different approaches to suit different environments to achieve optimal results	Has applied systems thinking to optimise self & people performance, has uncanny powers of observation & contemplation of individual & group behaviour
Commitment					
Attitude					
Leadership					
Cultural sensitivity					
Ability to inspire					
Teamwork					
Creativity					

Figure 7: Typical Soft Competency Variables for Evaluation

Figure 5 shows an example of how PM competency gaps is delineated in individual cases, and Figures 6 and 7 indicate the approach to development and assessment of soft competencies.

11. ASSESSMENT SCHEME

The PM-Outreach assessment philosophy is based on ascertaining and accrediting the acquisition of specified competencies targeted by each module in the programme. This is achieved by assessing the evidence that is put before the examiners by each student in accordance with the criteria and guidelines specified in the module under consideration. In a sense, the responsibility for acquiring the target competencies over the specified period (normally one academic semester) is passed on to students; the role of the teaching team is to facilitate the same by providing a meaningful learning programme driven by students via the Internet and to furnish the necessary resources where required. Also to provide feedback on performance and outcomes achieved. At the end of each module the evidence is submitted formally to the examiners who validate and accredit the same. A criteria-based assessment system is used. Under this system, a student must first demonstrate that minimum competencies have been attained through self, peer, employer and instructors' assessment; the actual coursework or project work cannot be assessed if the minimum competency has not been achieved.

12. PEER EVALUATION AND REFLECTIVE LEARNING

The emphasis on peer evaluation is deliberate to give each student honest and frequent feedbacks on how his/her peers and colleagues perceive him/her. Upon receiving the peers' feedback he/she will be required to thoroughly

reflect on the same and relate his/her exhibited performance to own profile (natural tendencies). This will then lead to learning more about the relationship between these two and coming up with measures for performance improvement compatible with personal characteristics. A paradigm shift in terms of leadership, a new meaning of the world and development of a professional mindset can be expected during the period of studies provided that the individual remains focused on the goals and motivated to achieve the same.

Expert coaching will be available if needed. However, as a minimum, typical profile tests will be undertaken at the entry and as part of certain modules so as to enable individuals to learn about their own natural tendencies/personal characteristics in a systematic manner. This information is useful in terms of learning the relationship between one's natural tendencies/personal characteristics and one's exhibited behaviour in a given context as perceived by peers, colleagues and employer. Evaluation of the exhibited behaviour does not focus on any psychological testing of individuals. It is concerned with the evaluation of observed competencies as portrayed in the conduct of an activity or a project. In the course, each time an activity is conducted students will be required to undertake peer assessment using the dedicated on-line tools provided. The results of these evaluations are fed back to each to act upon the same, including proper response to the points raised by the peers, proposed activities to raise competency and other relevant points. The underlying assumption is that this continuous peer evaluation and feedback will make an individual aware of his inner strength/tendencies and how these will lead to exhibited competencies, as well as experiments to see what needs to be done to improve one's exhibited performance (competencies) in future activities and projects. Thus, the process attempts to lead to development of higher cognitive abilities through self referential and continuous learning and development.

The reflective learning and self development activities undertaken as part of a given module is captured by each student in the form of a *reflective learning report* that is assessed by examiners as part of the overall assessment in the course module. The examiners will ensure that both project management and socio-cultural competencies will reach the minimum prescribed for each academic award course that the programme offers.

For further information on the PM-Outreach Programme please refer to: www.pmoutreach.usyd.edu.au

13. CONCLUSIONS

Professionals increasingly face a number of challenges and must manage themselves as microbusinesses. Their development requires a paradigm shift in terms of the sets of competencies needed and the nature of learning and development undertaken during their life long careers. Competency-based courses have not been available to assist with the professional development in a holistic manner. The University of Sydney's PM-Outreach Programme heralds a new era in the professional learning and development.

14. REFERENCES

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