A metamorphosis of university from past to present: a three-stage development trajectory with strategic management perspective

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Abstract: In the past, university is a close system and rarely pays much attention to the environmental challenges. However, over-concentrated universities, decreased birth rate and limited funds of government have imposed great pressures on these traditional higher education institutes (HEIs) and force them to undertake many engineering programs so as to survive. From strategic management (SM) perspective, the fundamental problem is how firms to achieve and sustain their competitive advantage. Most studies so far get used to over-simplification of the relationship among environment, strategy and performance for lack of complete research framework. This study examines a metamorphosis of university in life-long learning society by incorporating organisational development (OD) to continuing education institute (CEI). Therefore, this paper proposes a three-stage development trajectory and a strategic map to outline the core value of SM. Finally, we conclude with some issues in the need of future research.

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1   Introduction

For competitive advantage is regarded as the heart of a firm's performance in competitive markets (Porter, 1980), almost all firms today are eager to search for competitive advantages in fast changing and competitive environment surrounding. Just like an old saying '*Live and Learn*' says, the improved quality of people's lives resulted from their increasing perceptions of knowledge rather than keeping their job well or getting a good job (Thomas, 1995). In current business environment, knowledge is no doubt the key ingredient of competitiveness for individuals and organisations. As Michael et al. (1995, p.22) said:

> The growing number of adults wishing to further their education worldwide has made it necessary for educational institutions to rethink educational delivery and to expand to accommodate non-traditional students' demands.

Since 1998, the Ministry of Education (MOE) in Taiwan has been actively promoting the concept of '*Recurrent Education*' and '*Life-long Education*' whereby the number of continuing education institutes (CEIs) has been on the rise around the island, including universities/colleges, institutions of vocational training, community colleges, life-long education or adult education institutes and corporate consulting companies. As the terms '*extension education*' and '*continuing education*' (CE) in Taiwan are usually used for the spirit of life-long learning, Considering the market concentration, this study rather regards the universities as synonymous term with CEIs in following sections.

According to Liu (in press), 'decentralisation' and 'marketisation' will reshape the provision of CE. Therefore, universities have to find the other ways to raise their money and act in a more market-driven and learning-oriented manner to increase their market share. That is the universities must transform their operating model in contrast to the past to run their new business. As of great interests to help other universities speed up their progress towards sustainability, we will use a case study with strategic map to clearly depict the environment-strategy-performance relationship (ESP), and also present a conceptual framework as an education engineering benchmark for visualising and achieving a well-performed CE system.

It is believed that this study can be used to assist other universities to improve their effectiveness of potential or current sustainability activities through the introduction of organisational development (OD) model and the application of SWOT. The remainder of this paper is organised as follows: Section 2 describes the theoretical background of CE. Section 3 explores the relationship among environment, strategy, and performance with strategic view. In Section 4 we brief introduce the history of our case university. The case's OD trajectory will be presented in Section 5. Finally this paper will end with some conclusions and suggestions.

2 Theoretical background

2.1 The role of university in knowledge society – reviewing the industry-university linkage

The present society has been characterised as a knowledge society (Meyer-Krahmer and Schmoch, 1998) where universities play a crucial role in society as producers and transmitters of knowledge (D'Este and Patel, 2007). Even though most universities appear to be paragons of inertia: bureaucratic, inefficient, and much less flexible organisations than private sector firms (Lehrer et al., in press), there is no denying that the role of universities play in producing the human capital so vital for the functioning and growth of a knowledge-intensive economy (Yusuf, 2008).

After having realised the strategic position of university in today's business environment, many studies recently have begun to focus attentions on issues related to the industry-university linkage: including knowledge transfer (Santoro and Gopalakrishnan, 2000; Siegel et al., 2003; Bekkers and Freitas, 2008; Arvanitis, Kubli and Woerter, 2008), knowledge production (Godin and Gingras, 2000), knowledge exchange (Acworth, 2008; Yusuf, 2008), patenting (Thursby et al., 2009), economic growth (Feller, 1990), entrepreneurship (Dill, 1995; Mansfield and Lee, 1996; Mueller, 2006; Lehrer et al., in press), technology transfer (Welsh et al., 2008) and collaboration/partnership (Santoro and Gopalakrishnan, 2000; Harman, 2001; Balconi and Laboranti, 2006). According to research fields mentioned above, it is true that university today is no more a static and passive role in such dynamic environment. As a result, the term 'modern university' or 'entrepreneurial university' is referred to the new characteristic of university in knowledge-based economy and is also widely used to differentiate today's university from the past.

2.2 Definition of CE

CE is defined as the provision of opportunities for people to continue their learning (Ramaiah and Moorthy, 2002) and should be a continuing process founded on previously acquired professional knowledge, skills and attitudes; along with individuals' experience in the workplace (Alemna, 2001). As Walters (2000) points out, the notion of lifelong learning fits more closely with the market-driven approach to adult education and training that is concerned mainly with developing the economy. Thus, if CE is to facilitate the development of a learning society, then the society must provide a rich educational environment with a wide range of diverse resources and opportunities for learning not only through formal systems but also through informal systems (Ramaiah and Moorthy, 2002).

**Figure 1**   The organisation of CE as an open system
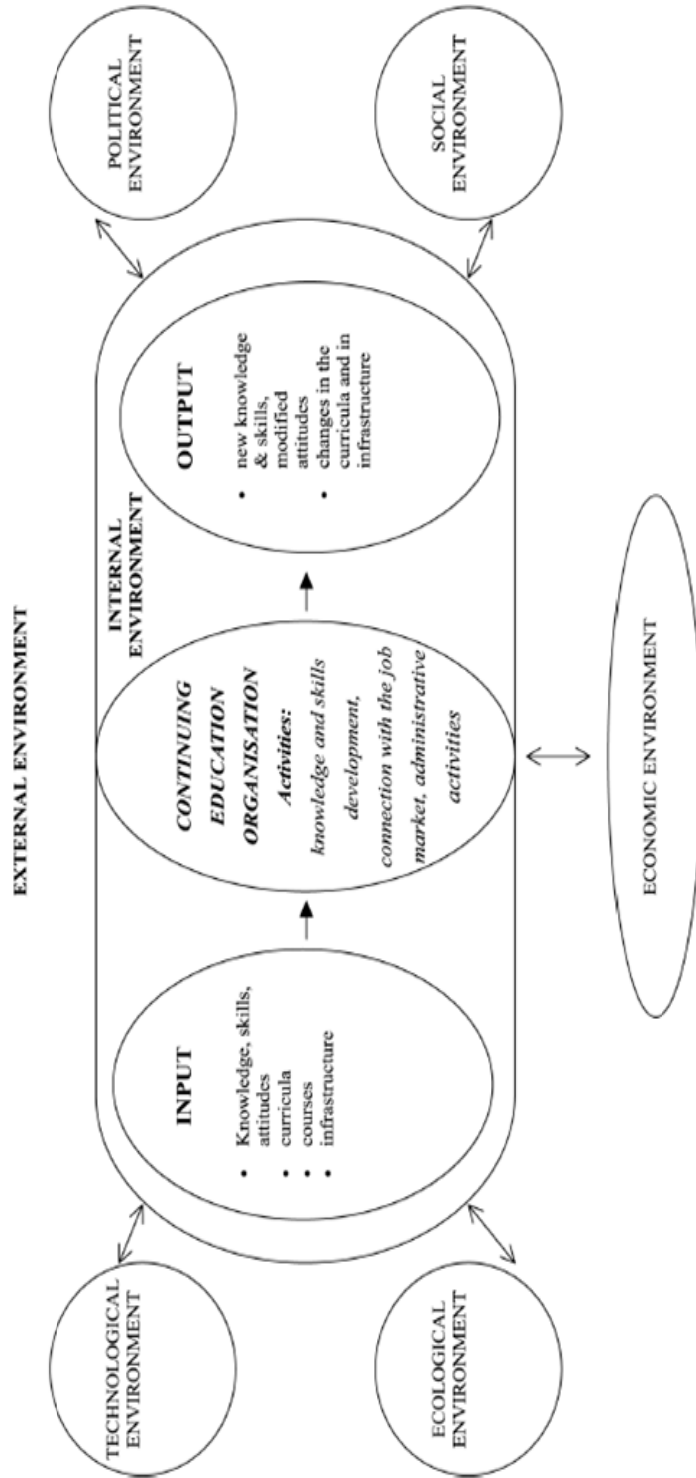
Source: Petridou and Chatzipanagiotou (2004)

Change is the nature of CE market. All educational institutes in response to these changes have embarked on adults and CE to create access for those who had dropped out but wish to re-enter now and for those whose penchant for knowledge extends well into their old ages (Michael et al., 1995). Any organisation running CE business should be a self-contained unit within a country's wider system of CE (Figure 1), and should continuously interact with the other systems and hypersystems in its external environment (Petridou and Chatzipanagiotou, 2004). It is obvious that CE system just like other business units is no longer a close system.

2.2.1 CE – a zoom-in version of triangular relationship with competence-based view

CE can be seen as a major force in human capital development and an integral part of lifelong. It is not surprising that the ultimate objectives of people are to pursue a better life and a stable income whereas the way to improve the quality of people's life is to increase his/her knowledge, appreciate and understand the surrounding instead of keeping and receiving a job. Based on previous research, it is strongly accepted that there not only exists an industry-university relationship, but exists the tri-angular relationship (i.e., industry-university-government) (Sutz, 2000; Inzelt, 2004). However, this paper would add two dimensions: individual and organisation to extend the triangular relationship to the pentagonal (Figure 2) to clearly depict the strategic role of CE in the emerging market. To some degree, CE is kind of zoom-in version of industry-university-government relationship with competence-based view. The interactions among these five would be described as follows:

Figure 2 The diagram of tri-angular relationship with respect to competence-based perspective (see online version for colours)
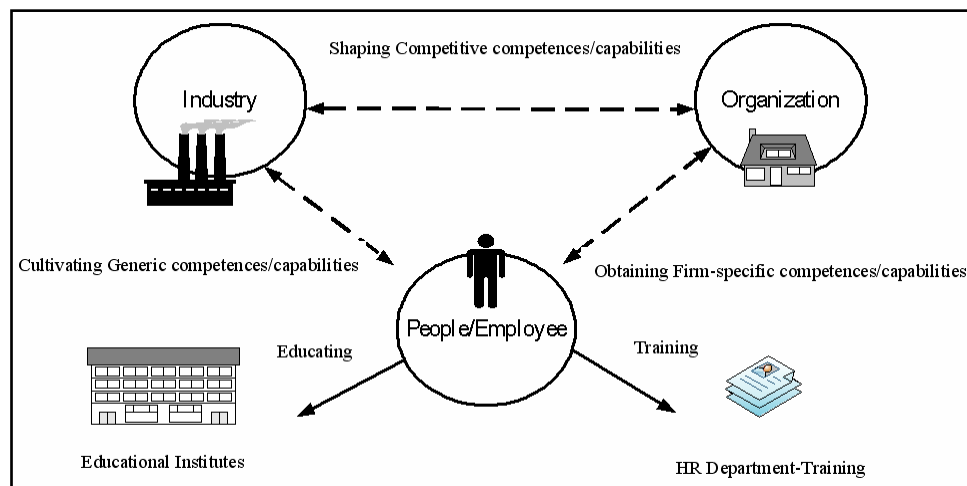
2.2.1.1 Linkage A (organisation-individual-industry): training

Extent literature pinpoints the urgency of building marketing capability to become market-oriented and to achieve a sustained competitive advantage (Berghman et al.,

2006). Lacking these capabilities will lead an organisation to lose its capacity to adapt to market turbulences and to anticipate market changes. Human beings are seekers of truth and knowledge because of their intelligence and emotional superiority over other beings. People, especially those who are traditionally burdened with social and economic responsibilities within the household, often prefer the informal training, which offers flexibility in participation in terms of entry and the period of training (Mehrotra and Sacheti, 2005).

For an organisation, its core competence refers to the organisational attributes that allow it to rapidly change and innovate in response to new and changing market (Chan, 2006). For individual, an employee may build his/her own capability and then contribute competence to entire organisation via learning. Thus, organisations would train their employees under a set of training programs from HR department to promote these employees obtain firm-specific competences/capabilities.

2.2.1.2   Linkage B (industry-individual-university): educating

Apart from the firm-specific competences/capabilities related to job or workplace, people might also go for other generic competences/capabilities from educational institutes (e.g., universities) to meet with their diverse need, including interest of learning, career development and more expertise and skills etc. Therefore, the major function of these educational institutes is to educate people for cultivating generic competences/capabilities in the future in contrast to the short-run training purpose from HR department. The evidence of Figure 2 reveals a close relationship among universities, people and firms. On one hand, people can improve their standard of living and develop their competences/capabilities by taking courses from CEIs or/and taking training programs from firms. On the other hand, CE courses are complementary to training programs to some degree; the more uncertain and diversified the environment, the greater will be opportunities for CE. To sum up, the informal system has an important role in this regard.

2.2.1.3   Linkage C (government-industry-university): monitoring, managing and facilitating

Basically, there are three major challenges for any government in rapid-changing environment. The first is to cautiously monitor all possible variations from the external environment in order to make some appropriate moves advanced to weaken the impacts of market uncertainty on industries. The second is to efficiently manage all economic activities for providing industries with a quality environment in order to support the development of industries. Finally is to offer some incentives for encouraging universities and organisations in the collaboration/partnership and the implementation of training/education programs in order to facilitate the knowledge and technology transfer in university-industry linkage thoroughly.

To some degree, CE is kind of knowledge intensive industry for its large knowledge input, its short product life cycles, its high demand for customised products, and its great quantity of production value (Liao et al., 2007). The main purpose of any university is not only to beat the competition, but also to grow the profit and wealth. Thus, these universities should redesign their business process (Davenport and Stoddard 1994; Hammer and Champy, 1993) for greater flexibility and innovation.

3 Strategic management and OD

3.1 Environment, strategy and performance

The essence of management is coping with change. A manager copes with change in firm's external environment through the choice of an appropriate strategy and the design of a matching structure (Andrews, 1971). The extant strategy literature in general has approached the construct of the environment from many different perspectives. In some cases, strategy is viewed as managerial response to environmental forces driving change. In other instances, it is approached from the perspective of managerial anticipation or to be out front of changes in order to seize opportunity before others. The main theme underlying this construct is the causal relationship the environment has with firm performance (Olsen, 2004).

Strategy is an essential part of any effective business plan. By using an effective competitive strategy, a company may find its industry niche and learn about its customers (Porter, 1980). The fundamental question in strategic management (SM) is how firm achieves and sustain competitive advantage, which is seen as resting on distinctive processes (ways of coordinating and combining), shaped by the firm's (specific) asset positions (such as the firm's portfolio of difficult-to-trade knowledge assets and complementary assets), and the evolution path(s) it has adopted or inherited (Teece et al., 1997). SM is an array of decisions and actions (processes), which lead to the development of an effective approach to achieve the organisation's objectives (Glueck and Jauch, 1984). To some degree, SM is regarded as a bridge building between the perceived present situation and the desired future situation (Wheale, 1991; West-Burnham, 1994).

3.2 Organisational change and OD

Change and development is one of the great themes in the social sciences (Pettigrew et al., 2001). The past traditional researches in various fields of the organisational sciences focus on organisational change (OC) and development (van de Ven and Poole, 1995; Weick and Quinn, 1999; Woodman, 1989). OD is not only an approach to manage change within an organisation (Dubrow et al., 2001), but an application of behavioural science knowledge related to system-wide planned changes, aiming to increase organisational effectiveness and foster employer development (Beckhard, 1969; French, 1969; French and Bell, 1990).

Although OC and OD might have borne little resemblance to the type of programs prescribed in the literature, many change efforts in the business world have been casually labelled OD. As a matter of fact, moving from an old state to an adapted one often requires comprehensive change involving lots of components, including human behaviour, culture, organisational structure, work processes and IT/infrastructure (Pettigrew and Whipp, 1993; Kanter et al., 1992). In contrast to OD, most OC professionals lean more forward to the view that changes in both structure/systems and human process are necessary to effect attitude and behaviour change (Worren et al., 1999). From this, it is reasonably accepted that OC is broader than OD in that it is a strategy-driven action plan that encompasses process consultation, work restructuring, strategic HRM planning, and the design or development of information technology (IT) solutions (Worren et al., 1999).

Figure 3   Strategic map of 'ESP' – SM perspective (see online version for colours)
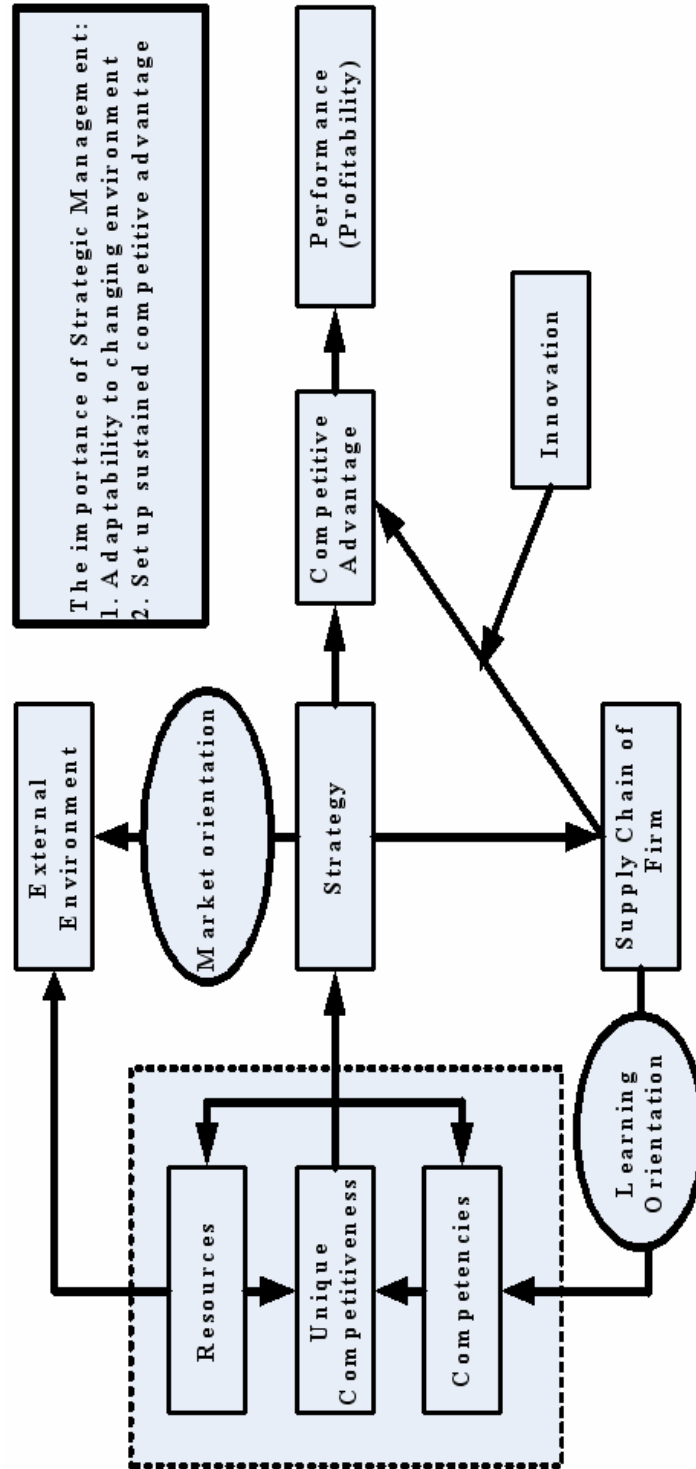
Figure 4 The model of Prajogo and Sohal (2001)
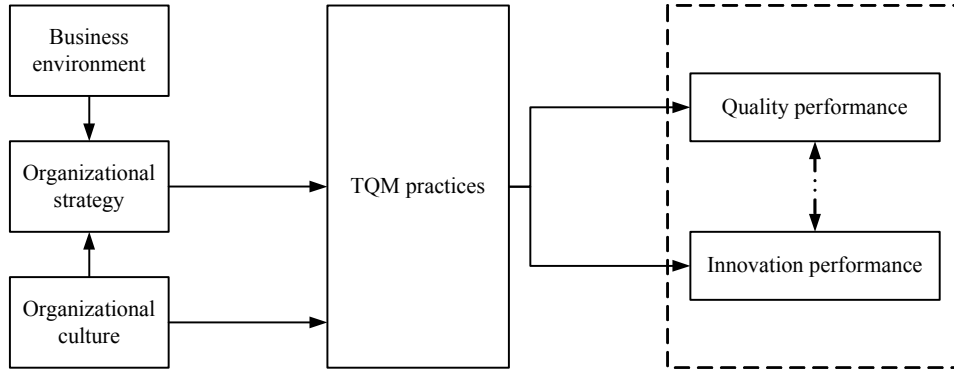
Table 1 The market survey for CE in Taiwan – opportunities and threats

Environment		O	T	Remarks
Population	Students from traditional channel decrease		●	Continuing decline in birth rate
	Students from untraditional channel increase	●		Attracting them back to the recurrent education system via marketing and promotion
Competition	Domestic		●	The increasing number of universities and colleges in Taiwan.
	Domestic		●	The homogeneity of competition.
	Foreign		●	Since the entry to WTO in 2002, the educational industry in Taiwan is under the great pressure for market opening.
	Foreign		●	The university diplomas issued in China is not recognised. (Not authorised)
	Foreign	●		Establishment of CE credit program overseas.
Politics and law	Law/regulation	●		The measures for the implementation of university extension education
	Law/regulation	●		The Legislative Yuan has passed the law for life-long learning in 2002
	Policy	●		The study-abroad for CE program (China included)
	Policy	●		Open recurrent education system.
	Policy	●		The MOE's medium-term plan is to promote Taiwan's Recurrent Education and life-long education.
	Policy	●		To enhance schools' autonomy and publicity through revising the 'University Law' and 'Private School Law'.
Economy	Knowledge economy era	●		By means of innovation and learning to enhance individual and organisation competitiveness.
	Consumer awareness	●		Adopting differentiated marketing strategy to attract students.

Note: *The term 'O' refers to 'opportunities'; the term 'T' refers to 'threats'

3.3   Strategic map

The strategic map (see Figure 3) derived from the concept of Prajogo and Sohal (2001) (Figure 4) is to provide a logical and comprehensive way to describe the organisation and its strategy. It clearly communicates the organisation's desired outcomes and how these outcomes can be achieved (Kettunen, 2006). In order to clearly depict the interrelationships on ESP, we sequentially use a graphical representation and draw the map to describe the causal chains between the objectives within case institute (i.e., SCE). Serves as an analytical instrument, the strategic map is to translate the strategic statements into the strategic objectives. It is evident in Figure 3 that these objectives can be achieved by the innovation, market orientation and learning processes occurred in the internal processes.

In summary, it is important for today's universities to develop their capabilities or competence to maintain the competitive advantage; each university has its own mission and strategic objectives for producing results (e.g., courses and services) and creating value for customers (e.g., satisfaction). This study, taking RBV into account, offers a strategic map linking the OD to SM field to improve and broaden the understandings of ESP process.

3.4   SWOT analysis

An understanding of why some firms fail relative to their competitors is as important as inquiries into why others succeed (Latham and Braun, 2009). Therefore, research on the relationship between environment and organisation has been an attractive issue in SM literature. According to Liu (in press), the reform can be seen to have created new opportunities and benefits for the university and society at large. However, the reform can be also seen to have generated new dangers. Thus, a modern university should focus on future objectives on their strengths and avert the tendencies related to their weakness. On the other hand, they make best use of opportunities to expand their market share and make profit as well as adjust strategies (e.g., positioning, product design etc.) to adapt to the threats resulting from environment. Besides, SWOT analysis aims to identify the strengths and weaknesses of an organisation and the opportunities and threats in the environment (Dyson, 2004). This predictive technology is expected to take the useful information from the environment and separate it into internal issues and external issues. Confronted with environmental uncertainties, good performance within a company comes from close and correct interaction with their environment. Therefore, based on the market survey, we summarise the results in Table 1.

4   Case institute: school of CE of Chinese Culture University (SCE)

This study uses a case study method for two main reasons. First, it is an appropriate method to facilitate an understanding of 'how' and 'why' SCE can successfully become a strategic benchmark in CE market. Second, 'how' and 'why' questions are better addressed by a case study, because such questions deal with operational links that must be traced over time, rather than mere frequencies or incidence (Yin, 1994). SCE was chosen as a case institute in this study because of its interesting profile. First of all, it is one of the famous CEIs in Northern Taiwan. Next, it is not only the CE pioneer, but the first CEI certificated by ISO 9001 in 2000. Finally, its prominent product advantage has promoted SCE to be the market leader for decades. It is no surprising for SCE to be the right case institute of CE and the best practice for benchmarking.

Figure 5   Three-stages OD curve of SCE (see online version for colours)
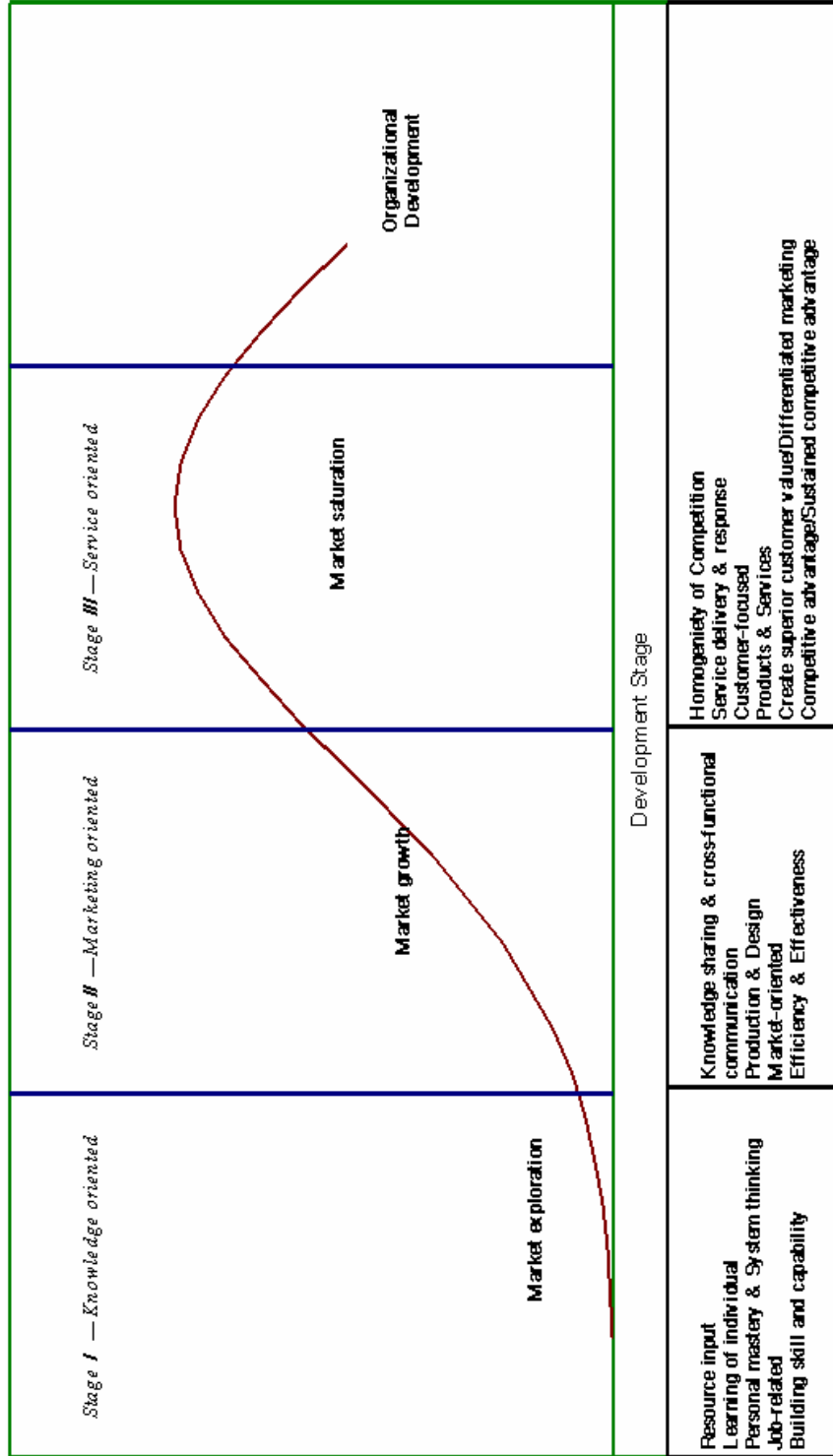
4.1   OD of SCE

4.1.1   The original concept

In fact, prior studies have been oversimplified their interactions between SM and OD. It is widely accepted that SM has a primarily external focus, whereas OD has an internal focus (Buller, 1998). To help researchers and practitioners bridging such theoretical gap, this study is to present a three-stage OD curve (Figure 5) derived from the concept of 'industry life cycle' (ILC) in marketing literature. Basically, every industry and product will have its own life cycle. ILC theory is an augmented theory of 'product life cycle' (PLC). Based on Porter (1980) and Hill and Jones (1998), an ILC is composed of following stages: introduction, growth, maturity and decline. This study will treat the OD model as an analytical method for forecasting the development trajectory of SCE rather than targeting on CE industry. Furthermore, the dual relation between strategy and environment is clearly seen in this OD model; such a relation will completely explain why SCE can be the critical but also these four decades and expected to be a benchmark for other universities to manage their new business.

4.2   OD stages

4.2.1   Stage I (Introduction period of SCE from 1969 to 1989) – knowledge oriented

Limited to customers' unfamiliarity with the CE product/service and the shortage of distributed channels. The major strategies for SCE in Stage I are market exploration and exploitation, including educating customers, developing the critical know-how, expanding the channels, pursuing the economic scale and offering qualified products and services. However, an organisation cannot create knowledge without individuals (Nonaka and Takeuchi, 1995). As a matter of fact, using knowledge management (KM) technologies in CE industry is as important as it is in the other industries. If done effectively, it can lead to better decision-making capabilities, reduced cost and improved service quality. Consistent with SCE's ongoing strategies, all the management activities mentioned above relate to KM processes, which are concerned with individual and organisational levels. To support creative individuals or provides contexts for them to create knowledge, SCE thus devotes herself to cultivate and build up its capability of KM including acquiring, learning, sharing, and dissemination to face the increasing market competition and environmental uncertainties.

4.2.2   Stage II (growth period of SCE from 1989 to 1998) – marketing oriented

Accompanied with customers' familiarity with the CE product/service and increased channels in the island. The major strategies for SCE in Stage II are cross-functional communication and R&D. As staffs or groups once have already equipped with knowledge-oriented, the next challenges for an organisation is how to implement these knowledge to the processes of production and design. From the perspective of product design, firms should commit to developing the quality of their goods and services in accordance with their customer' requirements, ensure the technical reliability of their

products, both inside and outside the firm (Perdomo-Ortiz et al., 2006). Consistent with SCE's ongoing strategies, SCE provides a supervisory mechanism that enables related cross-departmental functions to gather, provide product design input before they are thrown into the marketplace. It acts as a vital checking point where people and resources could gather together and ensure previous feedback from the market and customers are appropriately reflected into new or current product designs. Therefore, all these activities related to decision making within organisation should be more 'marketing oriented' to get closer to the needs of the market and offer the novel product to customers in time.

4.2.3 Stage III (Mature period of SCE since 1998 to date) – service oriented

If we already had the products and services following the previous stages, then how we are going to do next? Yes, 'quality assurance' indeed. Nowadays, the increasing homogeneity of competition in the market has proven quality as a requisite requirement in the services. The major strategies for SCE in Stage III are differentiated marketing and customer-value created. Accordingly, CEIs have to make great efforts to keep all the service delivery processes under control and to react well in time to any responses from customers.

Consistent with SCE's ongoing strategies, we argued that superior value of a product/service represents a significant competitive advantage for the firm in building profits and customer satisfaction (Naumann, 1995). Both of staffs and first-line members thus have to centre their attentions on 'service oriented' while they are serving people. In a word, all the members in SCE should motivate themselves to be knowledge oriented first – to learn and to innovate, then they have to be marketing oriented to communicate and to share with others, especially for cross-functional knowledge sharing, and the ultimate objective for SCE is to be service oriented, to service and to response. The formulation of a strategy is a process for the development of long-term plans, to effectively respond to environmental opportunities and threats in the light of the strengths and weaknesses of the company (Houben et al., 1999). In summary, the three stages above stand for the internal efforts to improve an organisation's problem-solving capability, whereas its capability is expectedly used to cope with the changes in external environment.

4.3 Conceptual framework of SCE

Reed et al. (2000) concluded that TQM has the potential to generate competitive advantage. Sitkin et al. (1994) suggested that organisations would be driven towards innovation (referred to learning-oriented) when they perceive a certain degree of uncertainty in their environment. It is therefore apparent that TQM is a starting engine, which leads organisations to innovation performance and competitive advantage and a catalyser, which creates an open and learning culture that fertilise innovativeness. To explore the TQM-innovation relationship in broader context (i.e., ERP relationship), this study presents a conceptual framework to describe the SCE's business model, which incorporates three theories and management practices such as TQM, value chain, SM, and service management.

Figure 6 The conceptual framework of CE operation (see online version for colours)

Basically, the primary service delivery processes in SCE, in terms of successful key flows (SKF), are comprised of market analysis, courses design, integration, telemarketing, enrolment, and class services (Figure 6). Each workflow here is designed to create and deliver value-added to customers (internal/external) and should be consistent with its organisational objectives. All these on-going strategies, more importantly, should be under the quality evaluation through feedback system (e.g., satisfaction and complaints). As a matter of fact, all theses theories and management practices shown in the model are not mutually exclusive (i.e., complementary). This study further summarised the interrelationship among them in Table 2.

Table 2 The interrelationships among theories and management practices

Working processes/phases	Strategic management phases	Value chain phases	Services delivery phases
Market analysis	Situation analysis	Inbound logistic	Back office
Product design and modification	Strategy planning	Operation	Back office
Marketing	Strategy planning	Outbound logistics	Back office
Tele-marketing	Strategy implementation	Marketing and sales	Back office/front office
Enrolment	Strategy implementation	Services	Front office
Class opening	Strategy implementation	Services	Front office
Class ending	Strategy implementation	Services	Front office
Customer information feedback system	Strategy evaluation	Services	Front office

Day (1994) argued that initiatives to enhance market sensing and customer linking capabilities are integral parts of building a market-oriented organisation. TQM implementation thus appears to be the best way to facilitate such capabilities. Confronted with the increasing homogeneity of competition around the CE market today, CEIs should devote themselves to developing their competence and creating high customer-value products (courses) and service quality to meet the diversified market needs. This study finally suggests that an effective SM model should build not only on the solid theoretical base, but also on its competence development.

5 Discussions and suggestions

5.1 Discussions

Today, 'customers', 'competition', and 'change' have created a New World for Business, such that organisations designed to operate in one environment are inadequately equipped to operate well in another (Hammer and Champy, 1993). Bolwijn and Kumpe (1990) argued that the competitive environment requires organisation to pursue more complex dimensions of performance, most notably quality and innovation. Although universities nowadays are the main sources of life-long learning in knowledge-based society, CE is a brand new business to an old university, thereby forces it to act as more market-driven/learning-oriented to successfully survive. Thus, the university in the present needs to access the requisite knowledge, train its staff, develop its capability, rebuilt its structure, smoothen its cross-functional communications, promote itself, and

service its customer in the CE market. That is why SCE refers these orientations to three-stage OD trajectory.

SM perspective has been regarded as an approach focusing on external environment, whereas OD perspective is that focusing on the internal environment. From innovation point of view, the impact of TQM on innovation is important in contributing to the development of managerial practices, which can be used as a resource for determining innovation performance (Prajogo and Sohal, 2006). Hence, if CEIs want to succeed in the ever-changing marketplace, they must learn to satisfy various levels of customer's needs and to design a CE system that embraces innovation to enhance the operating efficiency and SCA.

However, an oversimplification of TQM-innovation relationship is resulted from the omitted effects of environmental context, thereby leads to biased conclusions. This paper adopts case study methodology to explore TQM-innovation relationship in context of ESP. Next, we propose a strategic map, which derived from the concept of Prajogo and Sohal (2001) with four modifications, is to provide useful information and insights to researchers and practitioners. At present, there are more than 160 universities/colleges around the island and almost of them are running the CE program. In a word, CE market now is in the so-called mature stage, which characterises market saturation and homogeneous competition. The OD curve means the strategic orientation to respond/adapt to external environment. The total length of each stage period will differ from organisation's status, whereas the longer the stage period is, the high risk an organisation may have.

5.2   Limitations and suggestions

Our paper introduces SCE's OD trajectory into ESP context to clearly describe a metamorphosis of university from past to present rather than to explore the influence of transformation on university. Thus, the main limitation of this study is to use case study instead of empirical testing. While such transformation is expected to bring in significant and measurable outcomes, a further quantitative method for validating hypothesis is required. The second limitation is that there has been a lack of official and objective reports on CE performance, the development of acceptable measure scales on competitiveness is required. The third is that the increasing ambiguity in the boundary of ILC and the rapid saturation of CE market have made this three-stage OD pattern more like the traces of SCE's development. For all the concepts and conceptual framework are derived from the practical experiences of SCE. Thus, the final limitation is that the inferences are hardly supposed to be a generalised case. To sum up, after reviewing extant literature on TQM-innovation relationship in relation to SM fields, there are some questions in need of further research:

1   The mediating role of TQM implementation in the context of ESP is required.

2   Owing to higher tendency of customer's awareness today, the term of 'quality' has become the requisite for customers. It is interesting to test the significant effect of TQM on quality performance whether is still consistent with the result of Prajogo and Sohal (2001).

3   A highly successful organisation is one with strong and well-developed culture. TQM is a management system creating an open and creative culture in organisation,

whereas such favourable culture will foster innovativeness. Therefore, the future research on relationship among TQM, organisational culture and innovation performance is desirable.

4   A firm is better to be market-driven and learning-focused through the integration of TQM and BPR to develop an organisational climate to support its innovation. The relationship among MO, TOM-innovation and organisational learning (OL).

5   Elements of Soft TQM are essentially dimensions of HRM (Rahman and Bullock, 2005). Thus, the mediating effect of HRM-related factors on ESP is expected.

6   For market uncertainty and turbulence will change the state of competition and impact the accuracy of market preferences, the moderating role of environmental uncertainty in TQM-innovation relationship is desirable.

6   Conclusions

By contrast to formal education system, the informal education system (i.e., CE) has been the major force of lifelong learning in education and has provided alternative learning source for people in today's knowledge-based economy. From competence-based perspective, CE could be seen as an extension of university-industry-government relationship (i.e., pentagonal relationship or zoom-in version of triangular linkage). All CE courses of universities and training programs of organisations would usefully help people to build and develop their own competences/capabilities to improve the standard of living. Thus, we argue that the CE courses and training programs in these interactions are complementary.

Universities, the key knowledge producers of intellectual capital, are facing the role transformation. In contrast to the traditional close system in the past, today's universities must be more entrepreneurial and more market-oriented. If universities want to succeed in managing their new adventure, they have to convince themselves that they can perform well as other service industries (or profit organisations). Accordingly, they have to radically reshape the business processes and work flows, such as information gathering, process designing, inter-departmental communication, feedback systems and performance appraisal. Finally SCE divides OD trajectory into three separated parts, but it doesn't mean they are exclusive. After all, an organisation must effectively allocate its resources and integrate its capabilities to lessen the complexity of the dynamic environment, otherwise the gap between strategy and capability would probably hinder the organisational competitiveness.

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