

# Strategies of Entrepreneurs to Collaborate with Alliances for Commercializing Technology and New Product Innovation: A Practical Learning in Thailand

Kusumaphorn Sompong, Helen Lawton Smith and Barbara Igel

**Abstract**—This paper provides a key driver-based conceptual framework that can be used to improve a firm's success in commercializing technology and in new product innovation resulting from collaboration with other organizations through strategic alliances. Based on a qualitative study using an interview approach, strategic alliances of entrepreneurs in the food processing industry in Thailand are explored. This paper describes factors affecting decisions to collaborate through alliances. It identifies four issues: maintaining the efficiency of the value chain for production capability, adapting to present and future competition, careful assessment of value of outcomes, and management of innovation. We consider five driving factors: resource orientation, assessment of risk, business opportunity, sharing of benefits and confidence in alliance partners. These factors will be of interest to entrepreneurs and policy makers with regard to further understanding of the direction of business strategies.

**Keywords**—Managing collaboration, Strategic alliance, Technology commercialization, Innovation

## I. INTRODUCTION

THE strategic alliance is a crucial mechanism for entrepreneurs in commercializing technology. It has a major role in supporting innovative product development. In emerging economies, entrepreneurs may overcome obstacles and problems that individual organization faces. This strategy has emerged as one of the most important organizational forms that provide competitive advantages [1] particularly for technology-based companies [2]. As for the formation of alliances, previous studies have extensively discussed factors which influence firms decisions for entering into strategic alliances for the purpose of technological development [3,4]. Especially important are factors related to the internal need for self-improvement and those related to external challenges in business environments [5]. It has also been shown that specific alliances depend on the type of complementary resources and matching new technology capability between partners [6,7]. All of these are vital to firms' success in today's business environment.

K.S. is with the School of Management, Asian Institute of Technology and the National Science and Technology Development Agency, Ministry of Science and Technology, Thailand (e-mail: kusumaphorn@yahoo.com).

H.L.S. is now with the Department of School of Business, Economics and Informatics, Birkbeck: University of London, United Kingdom (e-mail: ubtm188@mail.bbk.ac.uk).

B.I. is with the School of Management, Asian Institute of Technology, Pathumthani, Thailand (e-mail: Igel@ait.asia).

Hence, entrepreneurs and policy makers must understand the challenges which businesses face and the timing of their strategic adjustment i.e. at what stage the decision to enter an alliance is made.

However, literature on strategic alliances based on emerging economies is still much let alone and even rarer from practical perspectives. To address this limitation this paper provides evidence on strategic alliances in the food processing industry in Thailand. It positions this within an overview of the state of information on factors which influence the decision-making process of entrepreneurs as they choose to collaborate with other organizations through strategic alliances.

## II. THE FORMATION OF PARTNER ORGANIZATIONS BASED ON STRATEGIC ALLIANCES

A strategic alliance can be defined as any attempt by firms to realize their objectives through cooperation with other organizations rather compete with them. Collaboration is therefore defined as the union of two or more parties, institutions or individuals, who pursue a distinct assignment together [8,9]. This strategy focuses on the benefits that can be gained through cooperating and on the mechanisms needed to manage the cooperation to realize common goals. Strategic alliances can offer significant advantages for companies that are lacking in particular competencies or resources through establishing links with organizations possessing complementary skills or assets. Moreover, alliances may offer easier access to new markets and opportunities for mutual synergy and learning.

Several possible motives exist for the establishment of cooperation through strategic alliances between entrepreneurs and their partner organizations. For example, Child *et al.* and Wheelwright [5,10] find that decision-making for achieving the targets of firms comprises both internal and external motives [11]. An internal motive is to improve competences. External stimuli are competitive conditions. Both are significant in strategies adopted for commercializing technology and innovative product development. In some cases internal drivers are more important, in others it is external factors which provide sufficient enough motivation for entering a strategic alliance. In particular, competitive rivalry between global enterprises has intensified with a consequence that customers demand, lower costs, higher quality, shorter delivery times, more value-adding services and radical innovations [12]. Therefore, motives are linked to the goals of collaboration.

A number of different theoretical perspectives have been used to examine motivations. Under certain circumstances, one perspective may be better than others, but none of them is the best at all times [13]. Generally, firms decide to acquire complementary assets through external partnering designed to support innovation activities in a global business environment [14]. Because firms are operating within an acceptable level of risk in order to provide good returns to their shareholders and to protect their competitive edge, they operate under strong business strategies, management and technical skill to attract customers under intense pressure for high efficiency and optimal resource deployment. Mostly, the objectives of firms to establish a relationship and collaboration with alliance partners come from two positions. The first is an opportunity for competitiveness and the business growth of their organization. The second is resource complementation: partnerships are driven by the logic of strategic resource needs, especially the issues of expert exchange [15,16] because this can become a source of innovative inspiration [17, 18]. This approach is well suited for simultaneously studying the motivations of cooperation and the characteristics of partners [19-20].

Moreover, to enhance the process of developing a business, firms need to ensure that their capabilities are matched to the competitive market environment in which they operate not just today, but into the foreseeable future [21]. Technology businesses in the new economy face globalization challenges. The changing marketing environment is critically important in developing a market orientation and market strategies (e.g. economics, politics, social and culture, technology, marketing changes etc.). The challenge of assessing future markets for new technologies is a key demand determinant for product positioning. There are a variety of approaches that can be used to better understand market potential [22]. With flattening world markets, innovating enterprises are forced to improve their operations through enlarged networks enabling entry into virtual partnerships.

### III. METHODS

#### A. Sample and data collection

The design of this study is based on defining the statement of intent in order to give clarity to the alliance collaboration practices of firms. The food processing industry in Thailand is employed as an example because alliance relationships in this industry are very complex. Firms in this industry are very active in improving production technology. Moreover, this industry is one of Thailand's globally industries. In order to understand the strategies of entrepreneurs, it is necessary to identify how entrepreneurs decide to collaborate with their partners. To do this, it was decided to collect data using qualitative research traditions through fourteen in-depth interviews. It is common to rely on the deep understanding of some key informants in order to achieve saturation of understanding [23]. Here the focus was on the entrepreneur-centric viewpoint and concentrated on commercializing technology and new product development projects for food production systems in Thailand. All fourteen participants were high profile. These respondents were practitioners involved in collaboration with external

organizations for new product development, business development, R&D and commercializing technology activities. They were assured of confidentiality. The details of individual identities are not presented here as a condition of their participation in this exploration. The profession of the respondents varies, but most of them are administrators. Six respondents had more than twenty years experience and the rest had more than ten years of experience in inter-organizational collaboration and product and business development. And all of them were working as key person responsible for alliance engagement, including joint new product innovation and commercializing technology projects such as technology and business development for the food production system.

#### B. Data analysis

Esterburge's method of interview and analysis is used for shaping interview questions and for coding used to analyze the interview results [24]. Interview question guidelines were sent to all respondents in advance in order to providing some initial direction to the interview and to provide focus for the phenomenon of interest. All participants were given the freedom to openly discuss topics and take the interviews in any reasonable direction. They were asked to answer semi-structured and open-ended questions about the collaboration between firms and their alliances, on existing issues of alliance collaboration in practice, and on the strategic alliance for commercializing technology and new product innovation. They expressed their views based on their overall experience of alliance collaboration in Thailand and not on their experience of serving in a specific organization. Responses were based on their personal view of drivers of strategic alliances in Thailand in general rather than on their personal view of those of a specific organization. Relevant information was extracted from the interview, and then the results were examined. In this study, transcribed information was analyzed based on the principles of grounded theory approach [23,25]. All dominant paragraphs and sentences were coded for conceptual categories. The comparative process was then utilized, the researchers moved back and forth between transcripts to compare and contrast these codes. The validity of finding by incorporating measures from different angles was achieved by triangulation. To improve validity, principles of triangulation were used, as was respondent validation, clear detailing of methods of data collection and analysis, reflexivity and fair dealing with respondents. This approach provided a rich and potentially valid and reliable interpretation of the collected information [26,27].

### IV. KEY ISSUES ABOUT ALLIANCE COLLABORATION OF ENTREPRENEURS

In this study, intense discussions with all respondents enabled open sharing of information and the introduction of fresh perspectives. Each comment relating to collaboration approach between entrepreneur and its alliance partners was categorized. Below is a description of the associations that respondents had for these alliance interactions. On the basis of these the findings are presented along the following statements.

#### *A. Maintaining the efficiency of the value chain for production capability*

The Thai food processing industry has been facing high costs of investment for a long time. Firms try to overcome this problem by adjusting their production structures and adding value to their products. These operations need expertise, large investment and various resources so much so that a firm is often unable to keep track of its efforts along all of the necessary input resources. Therefore these firms need some shared investment for the linkages between up-stream raw material and their products. These reasons attract them to cooperate with their alliance partners for developing their internal processes and taking products to market. Mostly, the firms collaborate with public research institutes and universities in order to acquire some essential technology and other resources as a means of increasing their performance (e.g. using well proven or technologies transferred).

Moreover, the production capability of these firms not only depends on investments in tangible resources which can be purchased or replicated, but also on the use of alliance networks to acquire new knowledge, skills and capabilities for innovative processes in order to increase their performance. Such expertise in a certain area is the driver of relationships and interactions for knowledge transfer both within and across organizational boundaries of firms and alliance partners. It means that people are also the basis of success, not just equipment. These firms focus on trusted staff, experts and researchers. Firms are confident that these people will help them to create new applications of technology. Staff of firms may learn very specialized operations when they work with experts in other firms.

#### *B. Adapting to present and future competition*

At present, firms in Thai food processing industry face increasing competition from new entrants. These companies depend on their commercial market to produce innovative products. Therefore, they have to create some innovative products in order to penetrate a new business area in which they have never operated before. They perceive that benefits derive from the increased market share so that an enlarged network of potential consumers entails a better understanding of the wants and needs of the consumers which they serve. They have to invest in innovative goods and service development for their target customers. Key issues shape their decisions, particularly in high quality of product, price, changing trends in consumption, low entry brands and new comers. For this mission, they sometimes need sudden and immediate results from collaboration, or they expect a long-term network within which they may work. Firms hope that some new ideas and business channels will emerge from their collaborations. In some cases it leads to higher competitiveness than others in the market. For example, at present, firms try to increase the standard of food safety in order to maintain the customer's confidence in their products and to increase market share. However, for this operating, they often face risks of investment because many of their customers are interested in lowest price with high quality of products, especially in the domestic market.

Therefore they try to share these risks of investment and uncertain market for survival of their business by collaboration with alliance partners.

#### *C. Careful assessment of value of outcomes*

Firms in Thai food processing industry will form alliances with well defined benefits. Firms will be selective about their partners, particularly when they are not clear about the ownership of shared outcomes of collaboration. To ensure the benefits to collaboration, signed agreements are signed before starting cooperation which make clear the roles of stakeholders and the later management of outcomes. However, firms in the Thai food processing industry still face problems of negotiation with their partners about the estimation of value of outcomes in practice. These problems may arise if targets cannot be fully met. Without an exact strategy, management may turn into an impossible task leading to collaboration failure. For example, on a particular concern about value of outcomes of collaborating with public research institute and university for social benefits, social linkages and trends are dealt with by business because of the importance of the interconnection between social and economic purposes. Firms cannot avoid the risks and constraints which rely on a mature and responsible society and business sector. In practice, not many firms are well prepared for this new management challenge. The reason is when firms associated with addressing social benefits; there are certainly increasing financial costs, but without confirmed value of beneficial outcomes. These firms may be seen as socially responsible or as a green company by customers and other stakeholders, but they are still having regulatory approvals delayed and failing to win bids to develop resources in their organizations. Thus, discussion and negotiation at this stage are necessary to identify some rewards in their operations. Firms also expect increased efficiency and some visible benefits to be produced quickly. These arguments stress the role of public research institute and university in creating the suitable incentives to encourage relationships with business partners.

#### *D. Management of innovation*

Firms in the Thai food processing industry are very confident that good in outcomes will emerge from their cooperation through professional alliances. It is their strategy to find synergies and to overcome the weaknesses of their partners. Firms expect to work together with these types of partners with the same focus on trends and production in manufacturing scales, not just only laboratory based activity. In this strategy, firms often consider the performance and image of that organization first. In Thailand, image of the governmental agency or the public research institute and university is seemed more professional and confidential alliance than other private organizations. However, at present, some objectives and management style of each organization may conflict with that of their partners and be sensitive to issues of collaboration. Management style represents a significant challenge of the ineffective networks engagement at large scale. As a result, most of these firms still have little connection and less need to keep up the developments in sophisticated basic science with local universities and research

institutions. In Thailand, opportunistic behaviour is absent. Firms lack effective communication within partner networks for sharing common arrangements on the respective contributions which is necessary for their respective institutional frameworks. These often lead to the weather of unanticipated problems in future.

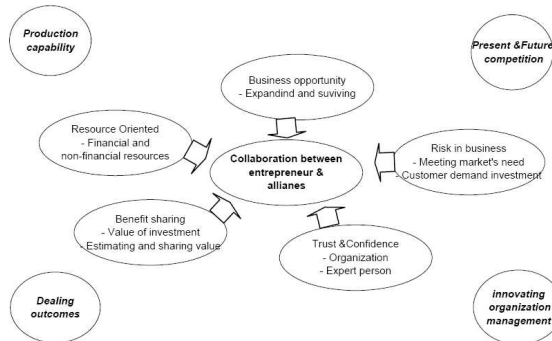


Fig. 1 Model of the affecting decision making of entrepreneur to collaborate with alliances

#### V. DRIVERS AFFECTING DECISION MAKING TO COLLABORATE WITH ALLIANCES

Here evidence is provided on critical elements in business partnerships. In particular, some robust guidance within which to manage alliance collaboration is proposed, suggesting a way to manage conflict of interest when they arise. Thus key drivers are gained from the various aspects and information is presented along the following themes

##### A. Resource oriented

Decision-making for collaboration with other organizations is related companies own needs for taking technology applications to feasible commercial production. Firms wish to acquire whatever resources are needed from their alliance partners. These operations require both financial and non financial investment. Mostly, firms perceive that they agreed to collaborate with public research institutes and universities because of both the financial costs and the expertise of these partners in support the development of application of knowledge. They may decide to collaborate with other partners because of reasons such as the exchange of information in business, acquiring raw material used for developing unique and quality products.

##### B. Assessment of risk

Firms are aware that they sometimes disappoint the market unexpectedly by poorly meeting the market's needs. So, they have to heavily invest in their product development for customer demands and market leadership. Technology application development is also included because the basic drivers of food industry products are related to science and technology, especially biotechnology and chemistry. There are various and complex technologies for developing products and processes. Most firms have to adjust the trial prototype from laboratory scale to production line in the manufacturing of their products. Sometimes, they cannot achieve the sales

targets of high priced product or cannot succeed in uncertain markets. Therefore, they try to collaborate with alliance partners in order to share the risks of these operations and uncertainty of business.

##### C. Assessment of business opportunity

Firms are aware that they always have to upgrade themselves for business survival in both present and future challenges. Under this pressure, companies are trying to increase their market power, market share and competitiveness to outdo their competitors. The imposition of extending networks has an impact on the decision-making process of companies. They may decide to collaborate with external organizations for long-term benefit. Although some companies do not have any financial problems, they still want joint investments in project collaboration with their alliance partners for increasing product distribution channels or finding an opportunity of new business areas. Moreover, some entrepreneurs work with their alliances for joint R&D activity while they have their own laboratory, core technology and staff because of the chance of new applications. It is a strategy supported to achieve the expanding capability, especially in new business area within a high competitive environment.

##### D. Sharing of benefits

Entrepreneurs are very careful about secrecy and sharing the benefits of collaboration. Mostly companies have already signed contracts or a memorandum of understanding with their alliance partners for initial-resource-shared investment and cleared ownership involvement. Both companies and partners have to improve agreement for details of intellectual property management, especially estimating value and sharing benefit. Firms are working harder than before to negotiate with their partners. The factors about sharing benefit and keeping secrecy of outcomes still affects the collaboration between companies and their alliance partners.

##### E. Confidence in alliance partners

Although firms hope to work with any alliance partners or organizations, they still want to choose their alliance partners based on potential confidence. In the aspect of interviewers, the firm's confidence dimension can be divided into two levels.

- *Organizational reputation and performance*; firms start to collaborate with their alliance organizations for two reasons. First, they trust in those organization's performances in the past. Most companies collaborate with public agencies both research center and university for developing technology for their target products. Firms feel that the performance of these organizations is better than private organizations. The second reason is that firms trust in the reputation of those organizations, especially public research institute and university. The companies start to collaborate with those organizations because they believe that those organizations are professional partners. For these organizational potentials, as a result of both a well-known reputation in a specialist field and the good performance of these organizations; firms may gain confidence of customers in products.

• *Individual relationship to an expert*; the entrepreneurs perceive that a reason for most collaborating with their alliance comes from experts in their alliance organization. The expert is an important element of their organization's capability. Companies have to work with these persons for projects of collaboration. These experts must match their needs both in the field of excellence and working style. Firms need to work with these specialists in a certain field because of the quality of outcomes of collaborating project and because they can trust them to keep secrecy of the commercial outcome. Moreover, their staff can also learn skills from these experts.

## VI. CONCLUSION

This paper sheds light on the key issues and drivers of entrepreneurs' strategies from practical evidence in the context of alliance collaboration for commercializing technology and new product innovation in Thailand. It should be noted that all actual opportunities and goals of each collaborating activity determined the nature of suitable alliance relationships. The alliances also needed to be recognized in their different values and cultures. They require careful management which is responsive to facing the challenges of engagement.

To facilitate better understanding, the results of this study have been developed to give some tools to help more successful strategic alliances and to highlight some of the conditions needed to do so. It proposes an insight into repositioning drivers and existing relationships between entrepreneurs and alliance partners. The findings can lead to better interpretation of complex conditions, and identifies areas where partnerships can have the greatest benefits for changes in practices. These findings may be used as prescriptions for improving alliance partnerships practices. Further, this study may also serve for future quantitative research studies constructed to generalize this finding.

## REFERENCES

- [1] Das T.K. and Teng B.S. (2000). A resource-based theory of strategic alliances. *Journal of Management*, 2(1), 31–61.
- [2] Ball D. (1999). Conference report: The R&D management conference 1998. *Technology strategy and strategic alliances*. R&D Management, 29(3), 303–311.
- [3] Verspagen B. and Duysters G. (2004). The small worlds of strategic technology alliances. *Technovation*, 24 (7), 563–571.
- [4] Garette B. and Dussauge P. (2000). Alliance versus acquisitions: choosing the right option. *European Management Journal*, 18 (1), 63–69.
- [5] Child J., Faulkner D. and Tallman S. (2005). *Cooperative Strategy : Managing Alliances, Networks and Joint ventures*. 2 nd. Edition. Oxford University Press Inc., New York.
- [6] Arranz N. and Carlos Fdez de Arroyabe J. (2008) The choice of partners in R&D cooperation: An empirical analysis of Spanish firms. *Technovation*, 28, 88-100.
- [7] Lavie, D. (2006). The competitive advantage of interconnected firms: an extension of the resource-based view. *Academy of Management Review*, 31 (3), 638–658.
- [8] Balachandra, R., Friar, J.H., 1997. Factors for success in R&D projects and new product innovation: a contextual framework. *IEEE Transactions on Engineering Management*, 44 (3), 276–287.
- [9] Aronson Z.H., Lechler T., Reilly R.R. and Shenhar A.J. (2001). Project spirit. A strategic concept. *Portland International Conference on the Management of Engineering and Technology*, Portland, 539–544.
- [10] Wheelwright, S., Clark, K. (1992). *Revolutionizing product development: quantum leaps in speed, efficiency, and quality*. The Free Press, New York.
- [11] Peters L. Groenewegen P. and Fiebelkorn N. (1998). A comparison of networks between industry and public sector research in materials technology and biotechnology. *Research Policy*, 27, 255–271.
- [12] Osterloh M., Frost J. and Rota S. (2002). Solving social dilemmas: the dynamics of motivation in theory of the firm. *University of Zurich. Institute for research in Business Administration*.
- [13] Bayona C., Garcia-Macro T. and Huerta E. (2001). Firms' motivations for cooperative R&D: an empirical analysis of Spanish firms. *Research Policy*, 30, 1289–1307.
- [14] Greis, N.P., Dibner, M.D. and Bean, A.S. (1995), "External partnering as a response to innovation barriers and global competition in biotechnology" *Research policy*, Vol.24, pp. 609-30.
- [15] Miotti, L. and Sachwald, F. (2003), "Co-operative R&D: why and with whom? An integrated framework of analysis", *Research Policy*, Vol.32, pp.1481–99.
- [16] Barnes A.P. (1999). Commercial R&D linkage with public agro-food institutions. *Food policy*, 24, 349-355.
- [17] Hall, J. and Vredenburg, H. (2003), "The challenges of innovating for sustainable development", *MIT Sloan Management Review*, Vol. 45 No. 1, pp. 61-8.
- [18] Ayuso, S., Rodríguez, M.A. and Ricart, J.E. (2006). "Responsible competitiveness at the "micro" level of the firm Using stakeholder dialogue as a source for new ideas: a dynamic capability underlying sustainable innovation ", *Corporate Governance*, Vol. 6 No.4, pp.475-490.
- [19] Park, N.K., Mezas J.M. and Song J.A. (2004). Resource-based view of strategic alliances and firm value in the electronic marketplace. *Journal of Management*, 30 (1), 7–27.
- [20] Vuola O. and Hameri A. (2006). Mutually benefiting joint innovation process between industry and big-science. *Technovation*, 26 (1), 3–12.
- [21] Hooley G.J. Saunders J.A. and Piercy N.F. (1998). *Marketing Strategy & Competitive Positioning*. Prentice Hall Europe. Great Britain.
- [22] Zahra S.A. and Garvis D.M. (2000). International corporate entrepreneurship and firm performance: the moderating effect of international environmental hostility. *Journal of Business Venturing*, 15, 469–492.
- [23] Strauss, A.L. and Corbin, J. (1998), *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, Sage, Thousand Oaks, CA.
- [24] Esterburge, K. (2001), *Qualitative Methods in Social Research*, McGraw-Hill.
- [25] Strauss, A.L. and Corbin, J. (1990), *Grounded Theory Procedures and Techniques*, Sage, Newbury Park, CA.
- [26] Dubois, A. and Gadde, L.E. (2002), "Systematic Combining : An Abductive Approach to Case Research", *Journal of Business Research*, Vol.55, pp. 553-560.
- [27] Janesick, V.J. (1998), "The Dance of Qualitative Research Design: Metaphor, Methodology, and Meaning", in Denzin, N. and Lincoln, Y. (Eds), *Strategies of Qualitative Inquiry*: Sage Publication, CA.

**Kusumaphorn Sompong** is a doctoral candidate at the Asian Institute of Technology (AIT). Prior to returning to graduate school, Kusumaphorn has been a project analyst at National Science and Technology Development Agency (NSTDA), Ministry of science and technology of Thailand, specializing in project management and policy planning. She also has previous work experiences with the Office of the Natural Resources and Environmental Policy and Planning of Thailand. Her research interests focus on entrepreneurship and innovation, cross-sector collaboration, strategic alliance and technology management.

**Helen Lawton Smith** is Professor of Entrepreneurship in the Department of Management in the School of Business, Economics and Informatics, Birkbeck University of London. She is the Director of the Centre for Innovation Management Research at Birkbeck. She specialises in studies of innovation and entrepreneurship in both high-tech and traditional sectors in the UK, Canada, France and Belgium, with a particular interest in university-industry interaction. Her work has been funded by the European Commission, the ESRC, regional development agencies and the CNRS. In recognition of her expertise in regional development, Helen was elected as Academician of the Learned Society for the Social Sciences, having been nominated by the Regional Studies Association. She is also founder and Director of Research of

the Oxfordshire Economic Observatory (OEO), School of Geography, Oxford University, from where she was awarded a DPhil. OEO is a practitioner-focused research centre focusing on understanding the South East knowledge-economy. It is a joint venture between Birkbeck, Oxford University and Oxford Brookes University. Under her leadership, OEO has conducted a series of studies including a study of the performance of spin-offs from Oxfordshire's universities and public research laboratories and has produced high-profile reports such as *Enterprising Oxford: The Oxfordshire Model*.

**Barbara Igel** is presently an Associate Professor of Management and dean in the School of Management at the Asian Institute of Technology (AIT). She is also coordinator of the Technology Ventures specialization in the Management of Technology program at AIT, has been Visiting Professor at the Helsinki University of Technology, Finland several times. She received her Dr rerpol from the Freie University Berlin (West) and Master of Economics degree from the Technical University Berlin (West). While a Lecturer and Research Associate at the Freie University Berlin, she worked as a consultant to the World Bank in the IDA credit program for small-scale export industries in Pakistan. Her research projects and publications deal with the management of innovation in complex technology systems, technology-based companies in Asia and entrepreneurship development.