



INTERNETISATION MANAGEMENT UTILIZATION IN ENTREPRENEURIAL START UPS: A CASE REPORT

Adli Abouzeedan,¹ Karl Maack² and Thomas Hedner³

University of Gothenburg, Sweden

Abstract: Entrepreneurial start ups require an optimal utilization of limited resources and their managerial practices when they are launched. They have to be able to respond to an environment with constraints and demands for flexibility and agility in response to market needs. This also requires an open and dynamic way of management practices. The current traditional management paradigms are not suited to achieve that level of dynamism and flexibility. One management paradigm which can be adapted to handle such situation is the “internetisation management” paradigm. Internetisation management is a new form of management which emphasizes the full usage of the internet to perform the managerial and operational activities of the firm in the virtual sphere. Such management practice enables the firm to reach the global market immediately, with a minimum requirement of resources. In this paper, we present a case report where the internetisation management is practiced in an entrepreneurial start up firm. We analyze and discuss how the internetisation management would be used to enhance firm operation. A framework is presented to deal with various aspects of firm practices in relation to internetisation management.

Keywords: *Internetisation Management, Eglobalization, Internet, Information Communications and Technologies, ITCs, Entrepreneurial Start Ups, Small and Medium-Sized Enterprises, SMEs*

¹Innovation and Entrepreneurship, Sahlgrenska Academy, University of Gothenburg Medicin-aregatan 8B P O Box 418, SE 405 30 Gothenburg, Sweden.

E-mail: adli.abouzeedan@gu.se

²Innovation and Entrepreneurship Sahlgrenska Academy, University of Gothenburg Medicin-aregatan 8BP O Box 418, SE 405 30 Gothenburg, Sweden.

E-mail: karl.maack@gu.se

³Director of Innovation and Entrepreneurship, Sahlgrenska Academy, University of Gothen- burg Medicinaregatan 8BP O Box 418, SE 405 30 Gothenburg, Sweden.

E-mail: thomas.hedner@pharm.gu.se

INTRODUCTION

Advancements in information and communication technologies (ICTS) after the second world war and specially starting from 1980s (due to the introduction of personal computers to the markets) and 1990s (as a result of launching the world wide web) has left its deep impact on the nature of the modern economy. The management paradigm has changed from the localized management style to networking management style and then to internetisation management (Abouzeedan and Busler 2006, 2007). Abouzeedan et al. (2003) were the first to propose the new term “internetisation management”. The classical approach to technology entrepreneurship is the Schumpeterian alternatives were new products or processes are introduced into the system (Schumpeter, 1934). However, entrepreneurship ca built around imitation and arbitrage technology opportunity recognition (Anokhin et al., 2009a, b). The concept of internetisation management presents more of a management entrepreneurship that technology entrepreneurship framework, The nature of online firms’ interaction with customers is also shifting from traditional communication channels such as

telephone and mail to electronic mail and web-based forms, from full-service to self-service, and from mass marketing to personalized marketing (Bhattacharjee, 2001). Ngai and Wat (2002) identified several application areas within e-commerce. This business-to-business commerce represents the oldest and largest model of electronic commerce activity (Albarran and Goff, 2000; Kalakota and Whinston, 1997

In the age of instant globalization via the Internet, or e-globalization, the prospect of the “*born-international*” firm becomes apparent (Kundu and Katz, 2003). Internet has brought about a new form of business organizations (Warner and Witzel, 2004), such *Virtual Instant Global Enterprise* (Katz, 2002). Dana et al. (2002) stated that the stages of “*Internetisation*” are six ones: non-adoption, trial Internet use, reactive Internet trading, active exploration of Internet, integration of operations with the Internet and finally Internet portal development. Theories deal with organizations either as open systems or closed systems (Scott, 2003). One new works in this area is the Actor-Networks Theory (ANT) (Czarniawska and Hernes 2005). The theory postulates that the

actions taking place in organization are themselves are the important element and should be focus of the analysis. IT tools facilitate cost reduction in areas like: *purchasing*, market efficiency, market intelligence, and inventory and improved control (Corbitt, 2002).

UTILIZATION OF ELECTRONIC COMMERCE

Information Technology (IT) has become the major facilitator of business activities in the world today (Turban et al., 1999). Innovative IT applications include: *production/operation, logistics, marketing, and sales, channel systems, accounting and finance systems, and human resources systems* (ibid). The internet is the platform used to run e-commerce activities. The internet as we know it today is tied with the year 1993 when the first popular web browser, NCSA Mosaic was introduced (Zwass, 1996). Before that the Internet was possible to use only by professional people (Spector, 2000). It was hard for the typical person to use the platform being only text-based (ibid). In mid-1990s NSFnet officials, recognizing the shift from academic to commercial use, closed NSFnet the pre-runner of the commercialized internet. ARPAnet, which is what

the military created as the first attempt to connect computers has been shut down a couple of years earlier (ibid). As thus, year 1993 is to be considered the start of the e-commerce (Ngai and Wat, 2002). There are four technical elements to any business-to business EC system, Communications data storage and retrieval; message conversation and application interface (Keen et al (2000). Beside the World Wide Web, several kinds of electronic commerce are worthy of consideration among them: *Electronic Data Interchange (EDI)* and *Continuous Acquisition and Lifecycle System (CALIS)* (Norton, 1996).

MANAGING FIRMS IN THE E-GLOBALIZED ERA

Today's environment is very competitive and small and medium-sized enterprises (SMEs) have to face the challenges coupled to such environment (Saarenketo, 2002). Oviatt and McDougall (1994) suggested that the new small or medium-sized enterprise would plan from inception to export. Enabled by, and driven by, new information and communications technologies, most importantly the Internet, the virtual organization model offers businesses a chance to reduce

costs (Warner and Witzel 2004). Abouzeedan et al. (2003) identified three forms of management styles corresponding to the historical stages in the development of the communication technology and means across the globe. The “Localized” management style was the dominant form of management in the older non IT-based economy. Abouzeedan et al. (2003) postulated that the “Localized Management” style is giving away to another form of management, which the researchers have called “Networking Management”. Abouzeedan et al. (2003) argued that the “Networking Management” style started from roughly the middle of the eighties and is taking over the older management styles and paradigms. Although Abouzeedan et al. (2003) have included the *Internet* component in the “Networking Management”, the three researchers were still unwilling to assume a full usage of the Internet at global scale. In the context of this internetisation management style, Abouzeedan et al. (2003) borrowed the terminology “Internetisation”, proposed first by Dana et al. (2002), to define an anticipated future type of firm management, which Abouzeedan et al. (2003) have called “Internetisation Management”. The

“Internetisation Management” means, as proposed in Abouzeedan et al (2003), the full usage of the Internet in running the operational and managerial functions of the firm.

ISSUES RELATED TO INTERNETISATION MANAGEMENT

In dealing with internetisation management, we need to discuss three major issues: aspects of internetisation management, components of internetisation management and performance indicators of internetisation management.

Aspects of internetisation management

Abouzeedan et al. (2003) discussed specific eight aspects of management including: tools, time factor, administrative costs, practices, technology costs, time-savings, IT knowledge and localities. The writers compared between the three types of management and emphasized the superiority of the internetisation management to their management paradigm. Their analysis is shown in Table 1.

Components of internetisation management

Table 1: Various Aspects of “Localized”, “Networking” and “Internetisation” Management

Management Aspect	Localized	Networking	Internetisation
Tools	Primitive	Semi-advanced	Advanced
Time-factor	Time-consuming	Reasonable time	Almost instantaneous
Administrative costs	High	Moderate	Low
Practices	Traditional	Semi-modern	Modern
Technology costs	Low	Moderate	High
Time-savings	No savings	Reasonable savings	Very high savings
IT knowledge	Low	Medium	High
Localities	Large space required	Less space required	Limited space required

As any management paradigm, internetisation management has a number of components which confirm its utilization by the firm leadership (Abouzeedan and Busler, 2006). These include: application level of IT, cultural environment of the organization (or organizational culture), operational mindset, physical fraction of organization activity and the ANT factor (ibid). The ANT factor is related to the Actor Net Theory (Czarniawaska, 2005) and this components seeks to see how firm management see the functions of the individual in the organization and whether they can be replaced by none-human operators. Abouzeedan and Busler (2006) argued that the degree to which these components do exist in the organization does judge the level of internetisation management utilization in it.

Performance indicators of internetisation management

Abouzeedan and Bulser (2007) defined five basic characteristics or *performance indicators*, to judge the ability of a management style, among the ones proposed by Abouzeedan et al. (2003), to full the needs of the firm or organization who seeks to obtain expansion capacities. These indicators are stated in Table 2. They include: speed of communication, speed of action, intensity of action, integrated capacity and global competitive advantage. I argue in this paper that the same performance indicator can be used also to judge the managerial capacity of the organization. The analysis by Abouzeedan and Busler (2007) showed the ability of internetisation management to

Table 2 The Managerial performance indicators of the “Localized Management”, “Networking Management” and “Internetisation Management”

Indicator	“Localized Management”	“Networking Management”	“Internetization Management”
Speed of Communication	slow	medium	high
Speed of Action	slow	medium	high
Intensity of Action	low	medium	high
Integrated Capacity	limited	some what limited	unlimited
Global Competitive Advantage	very limited	Some what limited	Almost unlimited

elevate the performance of organizations and firms.

THE CASE STUDY

History of SenCere

The paper investigates three issues of internetisation management in relation to a relatively recent entrepreneurial start up, SenCere Medical AB (<http://www.sencere.com>). SenCere Medical main activity is in preventing the occurrence of pressure ulcers by providing innovative medical devices. Pressure ulcers cost the Swedish health care system SEK 1.5 billion annually, and cause great suffering for more than 10 000 people each year in Sweden alone. SenCere uses a relief alarm aims to help patients and caregivers in preventing the occurrence of pressure ulcers. The company

was founded in 2008 after having been started as a business development project at the Göteborg International Bioscience Business School in 2007. The business is based on research made at the then Department Biomedicine and Surgery, the University of Health (Hälsouniversitetet) and in collaboration between Göteborg University and Linköping University that emerged. In due course SenCere has evolved from a research project to a company within the Sahlgrenska Science Park incubator. SenCere Medical AB is a privately held company.

Application area

Using the sensor mat, professionals are able to measure and evaluate local interface pressure. The sensor mat is placed under a person at risk of pressure ulcers.

With software programming built on SenCere's own research, the invention can interpret the pressure situation and warn when a person is experiencing damaging local pressure. The relief measures can be deployed in order to decrease the risk of the onset of pressure ulcers. Integrating the sensor signal into the existing security alarms and internal alarm systems by nursing homes and health care institutions helps workers in conducting an effective work in pressure ulcer prevention. It minimizes errors in the assessment of relief needs from staff. The product is under development, and SenCere has so far developed a functional prototype and carried out studies on volunteers.

Customers

The two patient groups who can derive the greatest benefit from SenCere's product are spinal cord injured and elderly patients who are sitting or lying. For the newly injured, the product is prescribed as a training tool to establish relief procedures. The alarm can thus teach the patient relief patterns based on individual needs. As for the second group, there are one million people in Sweden are included in the "elderly" age group. This group is found in hospitals,

various group homes and nursing homes but are also people living in their own homes. The wheelchair-bound is the largest group of elderly that can benefit from SenCere's product.

The team

As of today (April, 2011) the company is run by Aslak Felin as CEO and a board of directors with both industrial and medical background. Research and development is conducted in Linköping by two research engineers and a medical doctor.

SenCere Medical AB consists of Aslak Felin (CEO) is responsible for strategy, planning and administrative management. Karl Maack (EVP) is the company's research director and heads up research and development. The Board of Directors consists of Chairman Mats Alm, Disa Lidman, Ann Olofsson, Anna-Karin Ström, Morgan Skarin, Karl Maack.

RESULTS AND ANALYSIS

We asked one of the managers of the company, Karl Maack, to answer a questionnaire (attached at the end of the article), which is designed to give input in relation

to three major issues. These are aspects of management practices, components of management and the performance indicators. For the various managerial aspects the manager gave high scores ranging from 5 to 7. The only management aspect which has an intermediate level is the technology costs, with score of 4. The management components had a high score of 5 to 7, with the only component of lower score is the ANT component. This is expected as the firm is dealing with developing physical products. We would expect a service company to have higher ANT factor if they are utilizing an internetisation management perspective. The performance indicators had a high score, 5-6. The only performance indicator which had an intermediate value is the intensity of action. Our explanation is that the manager felt that things are going at slow base because of the nature of the product the company is trying to sell to the market. Although Karl Maack is also one of the authors of the paper, we do not feel that his involvement did affect the reliability of the results and his objectivity in filling in the questionnaire.

CONCLUDING REMARKS

One of the major problems felt by the smaller firms is their limited

tangible and intangible resources. Abouzeedan et al. (2003) argued that managing smaller firms has been performed using different management styles. The "Localized Management" style has dominated the world of the Small and Medium-sized Enterprises (SMEs) until the Second World War. After the war the Information Technology revolution has introduced another style of firm management, namely the "Networking Management" style. The third development in firm management came by the introduction of the personal computers and more importantly the Internet starting from roughly mid-1990s. That resulted in the style of management known as "Internetisation Management". In a later work Abouzeedan and Busler (2006) introduced specific components to distinguish the three types of management and in Abouzeedan and Busler (2007) the two writers introduced a number of performance indicators.

Based on the three papers we built a questionnaire and used it to study the management practices of a recently established entrepreneurial start-up. We ran the analysis on a Swedish company, SenCere Medical AB. Our analysis and the results obtained

indicated that the company is using, for the most, an internetisation management approach to run its operations.

BIOGRAPHY

Adli Abouzeedan holds a Master degree in Chemical Engineering, Chalmers University of Technology, Sweden. Abouzeedan has published more than forty journal papers, book reviews and chapters in books in the field of innovation and entrepreneurship. His works appear in reputed journals such as *Global Business Review*; *Journal of Enterprising Culture*; *Journal of International Entrepreneurship*; and *World Review of Entrepreneurship, Management and Sustainable Development*. He is the Editor-in-Chief of *Annals of Innovation & Entrepreneurship*, an open access journal based at the Innovation and Entrepreneurship unit at Sahlgrenska Academy, University of Gothenburg, Sweden. Abouzeedan is currently finishing a PhD degree at Linköping University, Sweden, in innovation and entrepreneurship. Adli Abouzeedan has established and operated couple of companies in the fields of management consultancy and trading. Abouzeedan's research interest covers a number

of areas including SME performance, managing innovation in high technology smaller firms, internetisation management, innovation capital, small firm internationalization, entrepreneurial start ups, online education, and sustainable development

Karl Maack graduated a technology master in Innovation and entrepreneurship at Chalmers University of technology (Sweden) and founded the medical Device company SenCere Medical AB. In the last 2 years Karl has been managing this venture as well as working with establishing the department of Innovation and entrepreneurship at the medical faculty at Gothenburg University. Karl is now employed at the university working with development of

Professor Thomas Hedner holds MD, PhD and MBA exams from the University of Gothenburg in Sweden. He is currently responsible for Innovation and Entrepreneurship at Sahlgrenska Academy. He has published extensively in medicine, especially in cardiovascular medicine and new drug development. In economics, his research interest extend to open innovation, entrepreneurship orientation and decision analysis in complex project management.

REFERENCES

- Abouzeedan, A. and Busler, M. (2006). 'Innovativeness in Managing Firms: Utilising Internetisation Management as the Catalyst for Development of the World Economy', in Allam Ahmed (ed.), *World Sustainable Development Outlook 2006, Global and Local Resources in Achieving Sustainable Development*, Emerald Group Publishing Limited., Section II, Science, Technology and Innovation, Vol. 2, pp. 169-177.
- Abouzeedan, A. and Busler, M. (2007). 'Internetisation Management: The Way to Run the Strategic Alliances in the E-globalization Age', *Global Business Review* 8(2), 303-321.
- Abouzeedan, A., Busler, M. and Khodabandehloo, A. (2003). 'Electronic Commerce (EC) and Small Enterprises: Possibilities and Problems', working paper presented at EURAM Conference, Managing Through Variety: The European Style? April 3-5, Milan, Italy
- Albarran, A. B. and D. H. Goff. (2000). *Understanding the Web: Social and Economic Dimensions of the Internet*. Iowa University Press, First Edition.
- Anokhin, S., Wincent J. and Autio, E. (2009a). 'Operationalizing opportunities in entrepreneurship research: use of data envelopment analysis', *Small Business Economics*, DOI 10.1007/s11187-009-9227-1.
- Anokhin, S., M. D. Troutt, J. Wincent, A. A. Brandberry, (2009b). 'Measuring arbitrage opportunities: A minimum performance inefficiency estimation technique. *Organizational Research Methods*, September. DOI 10.1177/1094428109337541.
- Bhattacharjee, A. (2001). 'An Empirical Analysis of the Antecedents of Electronic Commerce Service Continuance', *Decision Support Systems*, 32(2): 201-214.
- Corbitt, T. (2002). 'Business-to-business Electronic Commerce', *Management Service*, 46(1): 32-33.

- Czarniawska, B. and Hernes. T. (2005). 'Constructing Macro Actors According to ANT', In B. Czarniawska and T. Hernes (eds.), *Actor-Network Theory and Organizing*, Liber.
- Dana, L. P., H. Etemad and Wilkinson. I. (2002). 'Internetisation: A View for the New Economy', in the Proceedings of The Third Biennial McGill Conference on International Entrepreneurship, Researching New Frontiers, McGill University, Montreal, Canada. September 13-16, Vol. 2, paper no. 3.
- Kalatota, R. and A. B. Whinston. (1997). *Manager's Guide*. Addison-Wesley Reading, MA.]
- Katz. J. A. (2002). 'Automatically Global: The Challenges of Virtual Instant Global Entrepreneurship for Research and Policy', in the Proceedings of The Third Biennial McGill Conference on International entrepreneurship, researching new frontiers, McGill University, Montreal, Canada. September 13-16. Vol. 1, Paper number 1.
- Keen, P., C. Ballance, S. Chan and S. Schrupp, S. (2000). *Electronic Commerce Relationships: Trust by Design*. Prentice Hall PTR.
- Kundu, S. K. and J. A. Katz. (2003). 'Born-international SMEs: BI-level Impacts of Resources and Intentions', *Small Business Economics*, 20: 25-47.
- Norton, G. (1996). 'Electronic Commerce', *UNIX Review, Mercer Island*, 14(2): 15-
- Ngai, E. W. T. and F. K. T. Wat. (2002). 'A Literature Review and Classification of Electronic Commerce Research', *Information & Management*, 39: 415-429.
- Oviatt, B. M. and P. P. McDougall. (1994). 'Toward a Theory of International New Ventures', *Journal of International Business Studies*, 25(1): 45-64.
- Saarenketo, S. (2002). 'Born-Globals: Internationalization of Small and Medium-sized Knowledge - Intensive Firms', Ph. D thesis, Lappeenranta University of Technology (ISBN 951-764-718-2).

- Schumpeter, J. A. (1934). *The Theory of Economic Development*. Cambridge, MA: Harvard University Press.
- Scott, W. R. (2003). *Organization: Rational, natural, and open Systems*. Fifth Edition, Pearson Education, Inc., Upper Saddle River, New Jersey, U. S. A.
- Spector, R. (2000). *Amazon.com, Get Big Fast*, HarperCollins Publisher, Inc., New York.
- Turban, E., McLean, E. and Wetherbe, J. (1999), *Information Technology Management: Making Connections for Strategic Advantages*. 2nd Edition. John Wiley & Sons Inc.
- Warner, M. and Witzel, M. (2004), *Managing in Virtual Organizations*, Thomson Learning, Bedford Row, London, UK.
- Zwass, V. (1996). Electronic commerce: structure and issues. *International Journal of Electronic Commerce*, 1(1), 3-33.

INTERNETISATION MANAGEMENT QUESTIONNAIRE
Aspects of Internetisation Management

Please describe your intended management practices in your firm in reference to:

Tools
The kind of management tools used in the firm, both as physical tools and the related software. Given a scale from 1 (mostly non-IT tools) to 7 mostly IT-tools), please designate a value for: The tools used are:
Time-factor
Time need to perform the different operative tasks of the firm such as: marketing, sales, invoicing,, etc. Given a scale from 1 (very slow) to 7 mostly (very quick), please designate a value for: The time require to perform the firm operations used are:
Administrative costs
The costs need to administer the firm. By the administrative costs it is meant costs of personal in the administrative department, costs of material and any other administrative costs related to the firm's activities. Given a scale from 1 (very low) to 7 mostly (very high), please designate a value for: The costs related to administering the firm operations:
Practices
The kind of management practices followed in running the firm. Given a scale from 1 (traditional) to 7 mostly (modern), please designate a value for: The costs related to administering the firm operations:
Technology costs
The costs for the administrative physical tools and accessories used for a clear administrative functionality. Given a scale from 1 (very low) to 7 mostly (very high), please designate a value for: The costs related to administering the firm operations:
Time-savings
The time saving resulting from utilizing IT constraints on your administrative activities. Given a scale from 1 (insignificant) to 7 (very significant), please designate a value for: The time savings:
IT Knowledge
IT knowledge among personal and management team, in general. Given a scale from 1 (completely with no IT Knowledge) to 7 (expert in IT), please designate a value for: The IT knowledge level, top management (CEO, general manager, division management): The IT Knowledge management, middle and lower management:
Localities
The ability of the total area of your facility is able to support the firm activities. Given scale from 1 (The area is not enough at all to cover our needs) to 7 (The area is completely enough to cover our needs), please designate a value for: The ability of the area of the locality to meet the firm needs:

Components of the Internetisation Management

Please describe your intended management practices in your firm in reference to:

Application level of Information Technology
<p>The extent the employees are using information technology tools in performing the different tasks within the company. Given a scale of 1 (very limited usage) to 7 (very widely used), please designate a value for:</p> <p>Utilization of IT in the firm:</p>
Cultural environment of the organization (or organizational culture)
<p>The extent to which the organizational culture of the firm promotes total dependence on online intra- and inter-networks to conduct and achieve the management tasks. Given a scale of 1 (very limited promotion) to 7 (very high promotion)., please designate a value for:</p> <p>Cultural environment the firm:</p>
Operational mindset
<p>The extent to which the firm's operations are converted into electronically-driven systems for creating, processing, relying and forwarding information and data, covering all aspect of firm activities, excluding the transformation of the physical components of the firms' activities. Given a scale of 1 (very low to 7 (very high), please designate a value for:</p> <p>Operational mindset the firm:</p>
Physical fraction of organization activity
<p>The extent the physical part of the activities of the organization, both human and non-human is minimized and eliminated to become an online activity. Given a scale of 1 (very low) to 7 (very high), please designate a value for:</p> <p>Physical fraction of organization activity:</p>
The ANT factor
<p>The extent the human and non-human parts of the systems are integrated in the operational and management activities. Given a scale of 1 (very low) to 7 (very high), please designate a value for:</p> <p>The ANT factor of the firm:</p>

Performance Indicators of Internetisation Management

Please describe your intended management practices in your firm in reference to:

Speed of Communication
<p>The extent to which you and your management team is able to relay/communicate the operations, requests and demands to the firm partners/ and or customers. In a scale of 1 (very slow) to 7 (very quick), please designate a value for:</p> <p>Speed of communication:</p>
Speed of Action
<p>The extent to which you and your management team are able to response to operations, requests and demands of the firm partners and/or customers. Given a scale of 1 (very slow) to 7 (very quick), please designate a value for:</p> <p>Speed of action:</p>
Intensity of Action
<p>In a relative sense, the number of operations, requests, and demands of the firm partners and/or customers you and your management teams are able to conduct in specific time unit, for example eight hours. Given a scale of 1 (extremely low) to 7 (extremely high), please designate a value for:</p> <p>Intensity of action:</p>
Integrated Capacity
<p>The extent to which you and the management team of the firm is able to coordinate the managerial and operational processes with its partners and/or customers. Given a scale of 1 (incapable) to 7 (totally capable), please designate a value for:</p> <p>Integrated capacity</p>
Global Competitive Advantage
<p>The capacity of you and the management team of the firm to direct resources, both tangible and intangible to achieve a competitive advantage at selected segments of markets at the international arena. Given a scale of 1 (no capacity) to 7 (full capacity), please designate a value for:</p> <p>Global competitive advantage:</p>