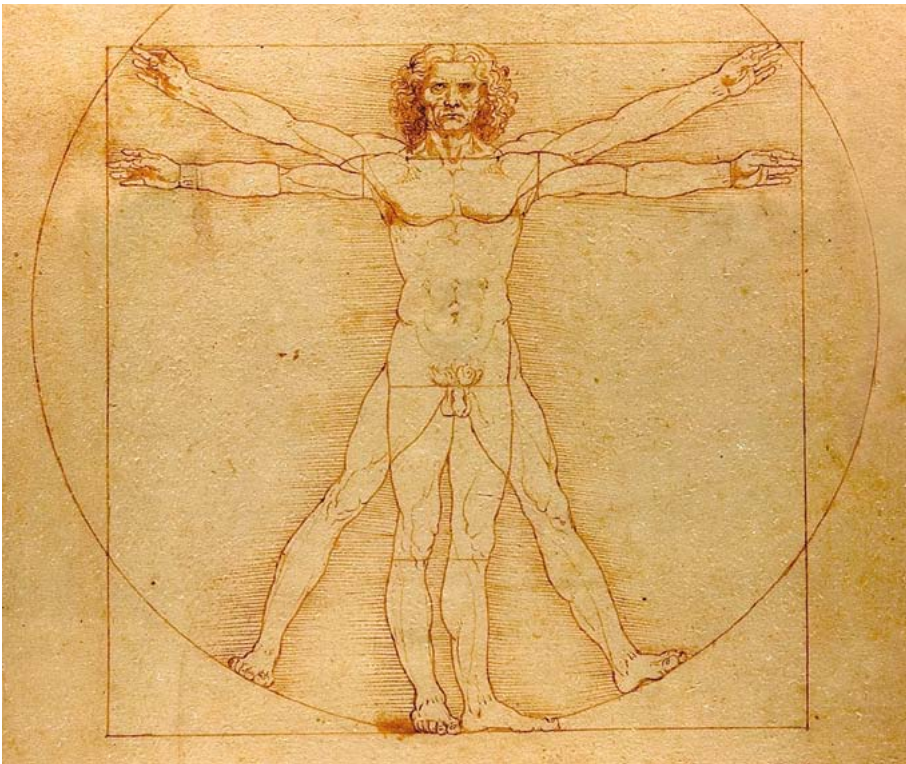


# Integrated Innovation – The necessary route to profitability

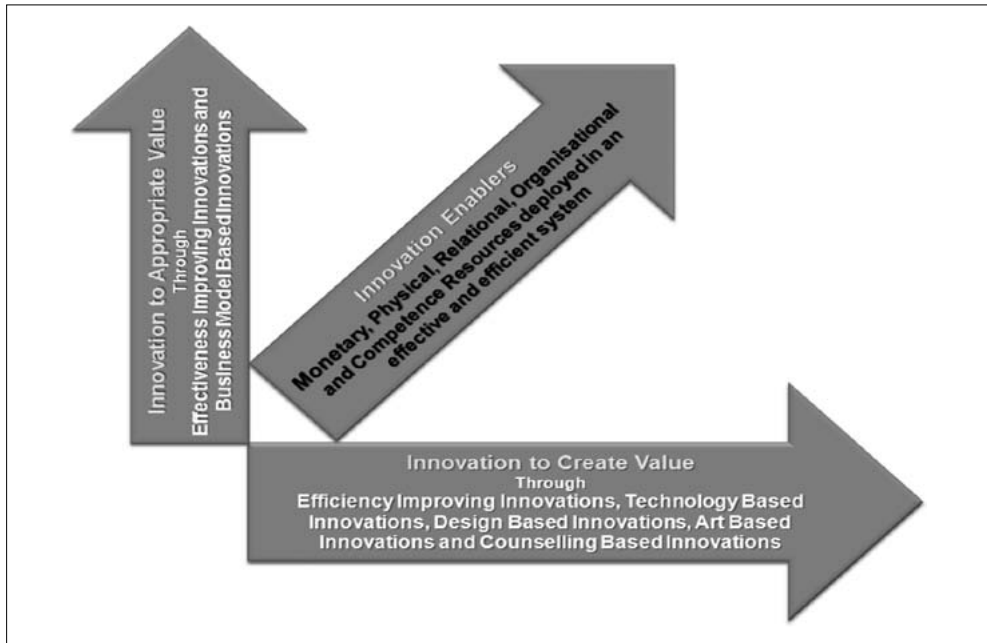
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*The global landscape for firms is changing more rapidly than ever. In order to stay competitive firms must manage two continuous challenges: How to create value and how to appropriate the value created. These challenges correspond to the two types of innovations that firms must manage and in order to enable these innovations the firm must have access to suitable resources (Monetary, Physical, Relational, Organisational and Competences).*

**A**ll too frequently firms focus on efficiency (in the value creating group of innovation activities) and all too rarely do they focus on effectiveness (in the value appropriating group of innovation activities), and as a result, they end up losing

their share of the profit pool to firms with a better focused portfolio of innovation activities including effective new business models. A good example is the meteoric rise in profit pool share of Apple (with a superiorly designed product-service-system complemented by a very effective business model) compared to Nokia (with a superiorly engineered product), where over 3 years Apple increased their appropriation from 0% to 45% of the mobile handset associated profit pool whereas Nokia went from 80% to 25% over the same period.



## Value Creating Innovations

### *Technology Based Innovation*

The ever increasing speed of technological advancement means we must be more vigilant and proactive than ever when it comes to technology based innovation. Most companies have been working with technology for a long time, and therefore, feel relatively comfortable in this area. However, this can often lead to a false sense of security as it is the convergence of existing technologies and the emergence of new technologies which will form the basis for breakthrough innovations in value creation (Roos, 2011).

The knowledge convergence stage denotes the emergence of spillovers between previously unassociated and distinct knowledge bases giving rise to the erosion of established boun-

daries that isolate industry-specific knowledge. This is the premature stage of the converging technology process where technologies are still separate. However, in this stage the initial core ideas of convergence are formed. These core ideas will lead to the second stage - technological convergence.

Technological convergence implies the transition of knowledge convergence into a potential for technological convergence. It allows inter-industry knowledge spillovers to facilitate new technological combinations. In this stage, technologies are converging and forming new, previously non-existing technological domains.

Applicational convergence denotes the transition of technological convergence into opportunities for new value creation through applications. At best, these applications outperform the sum of their original parts. The camera phone is an example of an application convergence where the innovator created a new service model based on convergence of former separate technologies. Today, cameras have become a standard feature of mobile phones. Since the introduction of the camera phone, several new technologies have been combined in today's mobile phones.

Industrial convergence is an advancement of application convergence towards the level of industries. A new commercial platform is formed at the interface of two existing industries. This means that companies from previously distinct industries suddenly become competitors.

The results of the convergence process can provide opportunities for companies, but they can also be a threat to their existence if they fail to respond to the changes that occur because of the convergence process. This is because converging technologies may impact market conditions in a disruptive manner and open up to entirely new competitors who operate with entirely new business models. A presently relevant example of this is the NIBC-Convergence (Nano-ICT-Bio-Cogno) which will impact most firms over the coming years.

### *Design Based Innovation*

The literature often fails to highlight the role of design in innovation. Although the central role of the design activity has been emphasized in studies, the initial driver of innovation is usually considered to be technical change. The traditional innovation literature consequently fails to acknowledge radical or incremental innovation achieved by design effort.

Design is frequently misunderstood. In its easiest definition, Design is a system-level optimisation with the intent of changing the behaviour [and hence preferences] of the user (Roos, 2011). Where 'technology based innovations tend to take a «component improvement leads to system improvement» view, design tends to take a «system

optimisation leads to user behaviour change» view' (Roos, 2011). An example of this is shown in the below box which illustrates the different approaches to the same problem.

<b>Problem statement:</b>	Reduce the water consumption in this building
<b>Technology based innovation solution:</b>	Put in place new technology enables water reducing components like taps that turn on and off when you put your hands under them etc. And thereby reduce the water consumption in the building.
<b>Design based innovation solution:</b>	Change the layout and operations of the building such that the behaviour of the users change such that they use less water and thereby reduce the water consumption of the building.

The objective of Design is to achieve behavioural change in the user which is desirable from the user's point of view [i.e. they are better off in their own opinion after the change], beneficial to the supplier, and positively impacting other stakeholders.

The power of design is illustrated by the fierce loyalty shown by users to the way Apple's iPhone works. By changing the way they interact with the device, users have changed their behaviour and because they are happy with their new behaviour, they have become very loyal to the product. As such, 'this is a well-designed product irrespective of whether it is a good technology based innovation or not' (Roos 2011).

#### *Art based innovations*

Art has numerous opportunities to add value to business. In consumer goods art can add to the perceived authenticity of the good and thereby increase its value in the eye of the consumer (see e.g. Gilmore and Pine, 2007). This is critical in the luxury goods end of the spectrum.

Retailers have long understood the importance of store environment in enhancing the shopping experience, and past research has examined the main effects of many pleasant ambient stimuli such as music and scent. The evidence from both research and practice (as reported in Garlin et al. 2006) clearly suggests that customers' affective and cognitive responses to experiences in-store influence the likelihood of behaviours which directly

impact an organization's financial returns. The literature reports on studies which highlight managers' implicit beliefs in the ability of background music to facilitate top- and bottom-line returns to business. Other researchers have secured significant results using more objective measures. Taken collectively, past research demonstrates the capacity for appropriate background music to illicit positive effects on affective, attitudinal/perceptual, temporal and behavioural variables. A considerable body of work presents evidence for these effects to provide returns to business in the form of sales value and volume, repeat purchase, rate of spend, quantity purchased and gross margin. Many indirect returns to business are apparent, such as positive perceptions of quality and venue/store brand image.

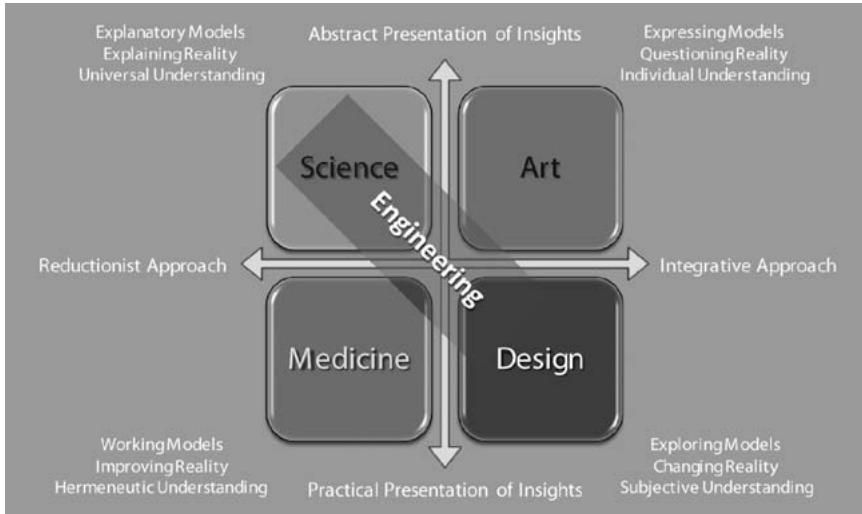
There has been much attention paid to the emotional effects which impress and impacts customers during e.g. the marketing process. It has been shown (see e.g. Yagi et al. 2009) that the customer that feels emotionally satisfied is positively committed to the marketing process, contributes to knowledge accumulation, and is involved in associated social networks. As a consequence insightful firms use the arts in creating and marketing products for emotional effect.

The role assigned to consumers in the consumption culture is that they need to actively construct meaning and value from the objects they use or interact with. Hence, new opportunities have been opened up for the marketers in terms of not only adding more value to their products but also how they add this value beyond the functionality of the object (Dou et al., 2011). Research shows that consumers judge these applications non-cognitively and mostly based on their senses. This approach have been used by brands that have become iconic such as Apple turning computers into aesthetic designs, Swatch turning watches into fashions and Cirque du Soleil turning circus into art (Moon, 2010).

#### *Hermeneutic (or Counseling) based value adding innovations*

The methodology of hermeneutics was developed by Frederich Schleiermacher (1768-1834). This methodology enables us to put ourselves in the place of the creator of an object to understand the viewpoint and feelings of the creator. Innovating in this space then becomes a reverse process, the aim of which is to generate, as a creator of an object, in the mind of the interpreter (consumer/customer) a specific set of emotions, intentions and thoughts. An example of this is what is known as «a sense of wonder» when a good science fiction book is read or created olfactory experiences that put you in a specific mood [e.g. hunger from the smell of freshly baked bread in a supermarket making you buy more].

The principle difference and relationship between these four domains is outlined in the following picture:



### *Efficiency Improving Innovations*

Most firms are familiar with innovations around efficiency improvements e.g. new ways of taking transaction costs out of the business. As stated in Roos (2011), a ‘transaction cost is a cost incurred in making an economic exchange’. The search for new ways of taking transaction costs out of firms is a constant battle and is supported by technology based innovations [e.g. electronic invoicing systems] and design [e.g. one stop shop, easy to respond to electronic tendering systems for small government contracts].

Transaction cost based decisions are used to simplify or widen existing business models. In addition, the make or buy decision creates new business opportunities when firms decide to outsource business functions and hence generate opportunities for new business models (Pynnönen et al., 2005).

### **Value Appropriating Innovations**

#### *Business Model Innovation*

In 2006 IBM (2006a) carried out a global study based on interviews conducted with 765 CEOs from corporate and public sector leaders worldwide. They found that 65 per cent of leaders anticipated a fundamental change in their industries over the following two years. As a result, many CEOs claimed to be undertaking innovations in operations and/or products and services. The most significant result of the study was that the financial outperformers put twice as much emphasis on business model innovation as did the underperformers.

Business model innovation is about a firm's ability to appropriate more value; how they can extract as much as possible out of the value they create. Another study by IBM (2006b) shows that business model innovation can have a far more profound effect on profitability than any other type of innovation since business-model innovation can act as both an improvement in the appropriation of any value created (its primary application), and as an additional increase in the value created (its secondary application). The effect is apparent in several highly successful new business models, including the following examples: Apple, with the iPhone business model generating the largest share of the industry's profit pool in a very short time; RyanAir, with the low-cost airline model giving rise to Europe's most profitable airline in a very short time; Cirque du Soleil, with the highbrow circus model generating the industry's most profitable circus business model in a very short time; Ericsson using the telecom solutions provider model to become the industry's most profitable telecom equipment supplier in a very short time.

Business models are, of course, intrinsically linked with the other strategic choices that companies make in relation to technology and other value-adding innovations.

#### *Innovations that improve effectiveness*

These innovations fall into one of the following three categories depending on the focus of the approach:

- Innovations that ensure a better fit between the organization's offering and an explicit or tacit demand from key stakeholders. An example could be making the offering more environmentally sustainable
- Innovations that increase the effectiveness of the resource-deployment structure. Examples could include switching from a physical resource to a relational resource through outsourcing, or the ability to lock in key stakeholders through platform strategies. These often include, or are even predicated upon, «locking in» more than one layer of the stack through switching costs or other market barriers. For example, in the US, with its subscription-based plans, customer-switching costs are high due to, typically, 1 to 2-year contracts with early termination fees and incompatible network technologies (for example, CDMA and GSM)
- Innovations aimed at reducing coordination cost. Coordination cost includes cost due to imperfect information and the opportunistic behaviour of organizational actors contributing to uncertainty in the organization. The impact of coordination-cost-based decisions on business models is either an increase in the precision or a broadening of the coverage in the business model, or a termination of the existing business model

One of the key strategies that a firm can use to achieve a high level of value appropriation is to widen the coverage of its business model. This approach means that, by taking very

minor actions, a firm is able to participate in new value chains. A well know example of this is RyanAir accessing multiple profit pools on top of its primary one.

In summary, a reasonable amount of knowledge exists on how to innovate when the goal is to improve an existing business model to create more value. Somewhat less knowledge exists about how to innovate to improve an existing business model to appropriate more value. The area in which we have the least knowledge is the area that could provide the greatest opportunities: how to innovate by broadening the coverage of a business model with the aim of accessing multiple profit pools. Very little knowledge of this topic exists within the context of a dynamically changing ecosystem where the profit pool depth changes very rapidly and where new profit pools emerge continuously. Thus, this area of research provides fertile grounds for thinking outside the box – because there is no box.

**Conclusion**

In order to maximise the firm’s success potential and earnings potential, a continuous focus on integrated innovation is necessary. This focus needs to be underpinned by an innovation strategy and an innovation management system. If these things are put in place the key success criteria among all the success criteria for successful firm’s as identified by research and illustrated in the figure below have been created.



*Figura: Characteristics of successful SME's. Authors synthesis of Hansen, 2010; OECD, 2010; Palangkaraya et al., 2010 and Simon, 2009*