

<b>Fișa suspiciunii de plagiat / Sheet of plagiarism's suspicion</b>	<b>Indexat la: 00311.05</b>
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<b>Opera suspicionată (OS)</b>	<b>Opera autentică (OA)</b>
<b>Suspicious work</b>	<b>Authentic work</b>

OS	LILE, Ramona; LILE, Adrian. <i>Managing the Innovation</i> , In: <i>Theoretical Developments in Contemporary Economics</i> . Timișoara: Mirton. 2008, p. 66-76. ISBN 978-973-52-0489-1.
OA	BESSANT, John. <i>High-Involvement Innovation, Building and Sustaining Competitive Advantage through Continuous Change</i> . Chichester, England: Willey. 2003. ISBN 0-470-84707-7.

<b>Incidența minimă a suspiciunii / Minimum incidence of suspicion</b>	
p.66:04-p.66:09	p.01:05-p.01:09
p.66:11-p.69:22	p.04:10-p.06:11
p.69:23 -p.76:06	p.06:15-p.09:46
p.76:07- p.76:12	p.10:03- p.10:07
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**Notă:** p.72:00 semnifică textul de la pag.72 de la începutul până la finele paginii.

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<sup>1</sup> Legea nr. 206/2004 privind buna conduită în cercetarea științifică, dezvoltarea tehnologică și inovare, publicată în Monitorul Oficial al României, Partea I, nr. 505 din 4 iunie 2004

<sup>2</sup> ISOC, D. Ghid de acțiune împotriva plagiatului: bună-conduită, prevenire, combatere. Cluj-Napoca: Ecou Transilvan, 2012.

<sup>3</sup> ISOC, D. Prevenitor de plagiat. Cluj-Napoca: Ecou Transilvan, 2014.



# High-Involvement Innovation

John Bessant

Building and  
Sustaining  
Competitive  
Advantage  
Through  
Continuous  
Change

# HIGH-INVOLVEMENT INNOVATION

BUILDING AND SUSTAINING  
COMPETITIVE ADVANTAGE THROUGH  
CONTINUOUS CHANGE

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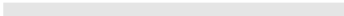
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## Chapter 1



# 'MANY HANDS MAKE LIGHT WORK!'



### 1.1 Innovation – A Survival Imperative

Change is a pre-requisite for survival amongst individual human beings and even more so in the organizations which they create and in which they work. Put simply, if an organization does not change what it offers the world—its products or services—and the ways in which it creates and delivers those offerings, it may not survive. In a competitive environment this implies a continuous race, well captured by the character of the Red Queen in Lewis Carroll's *Through the Looking Glass*, as she explained to Alice: "'A slow sort of country!'" said the Queen. "Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"'

The pressure for such constant innovation means that creativity is a key resource. But the image we often have of the creative act is one involving artists or composers, working alone and inspired by the desire to create something to leave to posterity. Whilst 'creative arts' of this kind have their cast of determined and individualistic characters, they only represent the tip of an iceberg. We may not all be a Leonardo or a Beethoven but there is a strong drive in human beings, which finds expression in all sorts of creative ways—we want to make and do new things and we want to improve the things we already have and do.

In organizational terms there is a second powerful force at work, which puts innovation centre stage. In a competitive environment there is a kind of simple Darwinian process at work—from the earliest days in the caves it was the people who worked out better ways of hunting, foraging and fire-making who stood the best chance of survival. Sad though it is to reflect upon, it was those who were most innovative in warfare—in, for example, weapons and tactics—who won battles and wars and came to dominate. On a more positive note, it was the drive to innovate in fields like health care and social welfare which meant that the species grew.

In particular, in the economic field this pattern emerged strongly. Societies that were open and exploring grew and prospered through developments in what they traded and how they carried that trade out—for example, new ships, new methods

where people work without basic discipline or standard operating procedures and where there is regard only for output rather than quality can be dramatic.

Much of the thrust of this book is about involving people who have not normally been considered part of the creative resources available to the organization. In this respect their ability to contribute to breakthrough innovation is likely to be limited, at least in the short term. But they are, nonetheless, capable of making a contribution via such incremental improvements and these can, over time, have a major impact on the fortunes of the firm.

### 1.4 Managing the Innovation Agenda

The risk is that, even if firms recognize and accept the need for continuous innovation, they may find difficulties in framing an appropriate innovation agenda. With limited resources they may find themselves putting scarce eggs into too few or the wrong baskets. Innovation can take many forms—from simple, incremental development of what is already there to radical development of totally new options. It can range from changes in what is offered—product or service—through to the ways in which that offering is created and delivered (process innovation). It can reflect the positioning of a particular offering; for example putting a well-established product into a new market represents a powerful source of innovation. And it can involve rethinking the underlying mental models associated with a particular product or service (Francis 2001). (This distinction has similarities with the ‘value chain’ approach, which sees upgrading via product and process change, change in position within the value chain and moving to a different value chain (Kaplinsky and Morris 2001).)

TABLE 1.1 The innovation agenda.

	<i>‘Do better’ innovation</i>	<i>‘Do different’ innovation</i>
Product/service innovation—change in what is offered	This is incremental product development. For example, the Bic ballpoint was originally developed in 1957 but remains a strong product with daily sales of 16 million units. Although superficially the same shape, closer inspection reveals a host of incremental changes that have taken place in materials, inks, ball technology, safety features, etc.	Radical shift to new product concept for the firm, perhaps for the industry as well. An emerging example of this could be the replacement of the incandescent light bulb, originally developed in the late 19th century by Edison and Swan (amongst others). This may be replaced by the solid state white light emitting diode technology patented by Nichia Chemical. This technology is 85% more energy efficient, has 16 times the life of a conventional bulb, is brighter, more flexible in application and is likely to be subject to the scale economies associated with electronic component production

TABLE 1.1 (continued)

	<i>'Do better' innovation</i>	<i>'Do different' innovation</i>
<b>Process</b> innovation—change in the ways in which it is created and delivered	These are incremental improvements in key performance parameters, for example, cost reduction, quality enhancement, time reduction, etc. A good example of incremental process innovation can be found in the 'lean production' field, where intra- and inter-firm efforts to drive out waste have led to sometimes spectacular performance improvements—but achieved within the same envelope established by the original processes (Womack and Jones 1997)	These are radical shifts to new process routes for the firm and, perhaps, for the industry as well. Examples are the Bessemer process for steelmaking replacing conventional charcoal smelting, the Pilkington float-glass process replacing grinding and polishing, the Solvay continuous process for alkali production replacing the batch mode Leblanc process, etc.
<b>Position</b> innovation—change in the context in which it is applied	This includes the launching of a product or deployment of a process in familiar context and redefining the perception of a product for customers. For example, in mobile telephones a shift has taken place from a business tool to a leisure and recreation aid, with considerable associated incremental product and process development (ring tones, cartoon displays, text messaging) emerging as a result of such positional innovation	This requires creating completely new markets rather than extending and deepening existing segments or incremental brand identity changes (Moore 1999). For example, satellite navigation was originally developed for military use, but is now used by sailors, motorists, surveyors and even postmen. Christensen's study of the rapid evolution of the hard-disk drive industry highlights the ways in which unimagined markets can quickly become the key segment (Christensen 1997)
<b>Paradigm</b> innovation—change in the underlying mental models surrounding it	These are evolutionary changes in the way that business activities are undertaken that provide the opportunity for incremental innovation in paradigm or business model. An example might be rethinking the Rolls-Royce motor car business as that of supplying luxury experience, competing with expensive watches, holidays, clothes, etc., rather than as a transportation mechanism	These are new business or industry models, for example, 'mass production' vs. 'craft production' (Freeman and Perez 1989). An example of a recent transformational innovation in paradigm was the development of Internet solutions to many business areas such as banking, insurance, travel, etc. (Evans and Wurster 2000)

The challenge is for firms to be aware of the extensive space within which innovation possibilities exist and to try and develop a strategic portfolio that covers this territory effectively, balancing risks and resources. Table 1.1 maps out some options.



## 1.5 Learning, Knowledge Management and Innovation

'Innovation has nothing to do with how many R&D dollars you have. . . it's not about money. It's about the people you have, how you're led, and how much you get it.'  
(Steve Jobs, interview with *Fortune Magazine*, cited in Kirkpatrick (1998))

What an organization knows at any moment in time is deployed in the products or services that it offers and the processes whereby it produces that offering. As Figure 1.1 shows, knowledge provides the fuel for innovations—the changes that help it catch up and sometimes move ahead. This is the heart of the 'core competence' argument, which suggests that organizations need to work at building and managing their knowledge resources (Kay 1993; Prahalad and Hamel 1994; Coombs and Metcalfe 2002).

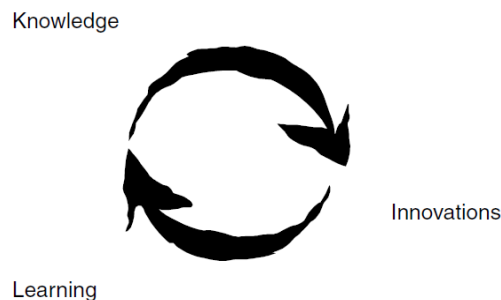


FIGURE 1.1 Learning, knowledge and innovation.

This puts a premium on the processes that it has in place for learning and knowledge management. Not for nothing do people speak of 'the knowledge economy' or of 'competing on knowledge' (Teece 1998). In a world where access to information is fast and widespread, those organizations that can create and use their own knowledge are likely to be able to build and sustain competitive advantage. So organizations need to become good at learning—and occasionally forgetting (letting go of knowledge that they no longer need).

If learning and knowledge management are so important, then we should look at who is involved in this core renewal process. And here we reach an interesting conclusion. Organizations themselves don't learn—it is the people within them that do that (Hedberg 1981). This does not mean that managing learning at the level of the organization is unimportant; organizations provide the stage on which individual learning can take place and some stages are more supportive than others. In the end learning is essentially a human process involving individuals and groups in different configurations.

Whether people are skilled and competent at learning or not is a variable, as are the conditions under which they operate within the firm. Those organizations that invest in developing the specific knowledge and skills of their employees and the general capability to learn, those that provide opportunities and space for interaction and shared learning, those that emphasize effective communication and sharing of information, those that recognize and reward learning

behaviour—these are likely to be the organizations that succeed in developing into the kind of learning organization that is much talked about but hard to achieve.

So in this sense people really *are* the organization's most valuable assets—not because this phrase makes good publicity in the annual report or mission statement, but because people actually do represent the powerhouse for learning. Without actively committed and focused learning, any organization is likely to stagnate and will struggle to create the steady stream of change it needs to survive. Investments in assets like buildings, equipment or IT systems may help the business, but without a core learning capability the long-term future must be in doubt.

## 1.6 The Innovation Paradox

The paradox that this raises is simple to express but hard to understand. Organizations need creativity and active learning in order to survive in a hostile environment. In today's turbulent times with challenges coming from all directions—uncertainty in competing in a global market, unpredictability in political and social stability, technological frontiers being pushed back at a dizzying pace—the one certainty is that we need all the creativity and learning capacity that we can get.

Yet the majority of our organizations still throttle back their capabilities in this direction by only looking to a relatively small group of specialists to provide this. Individuals and groups are 'licensed' by virtue of their specialist training or position in the organization—as 'R&D', 'engineering', 'market research', 'systems design', etc. Although more extreme forms of hierarchical management have begun to fall away, there is still a sense in which many organizations assume that innovation comes from these special zones in the organization.

What we are seeing is the working through of an old—but not immutable—model of how to organize. Looking back, we can see that managing agricultural production was the dominant challenge for all countries until comparatively recently. And, whilst the forms of management were often less than enlightened (including a sizeable element of slavery), there was a clear relationship between what people did and what they produced. The vast majority of work was as direct labour rather than involved in indirect activity, and the challenges faced were relatively simple tasks. Where specialized skills were needed—craftsmen working as wheelwrights, as blacksmiths, as masons, as carpenters, etc.—there was the Guild system to regulate and professionalize. Here strong emphasis was placed on a learning process, from apprenticeship, through journeyman to master craftsman, and this process established clear standards of performance and what might be termed 'professional' values. Again there was a close link between what a craftsman produced and the man himself (who often had a strong sense of pride in the quality of his work).

The Agricultural and Industrial Revolutions changed all of this. The gradual drift towards the cities and the increasing use of machinery led to a rethink of how operations were managed. Its origins can be traced back to Adam Smith and his famous observations of the pin-making process, which marked the emergence of the concept of the division of labour. By breaking up the task into smaller, specialized tasks performed by a skilled worker or special machine, productivity

could be maximized. During the next hundred years or so, considerable emphasis was placed on trying to extend this further, by splitting tasks up and then mechanizing the resulting smaller tasks wherever possible to eliminate variation and enhance overall managerial control (Piore and Sabel 1982; Kaplinsky 1984; Best 1990).

The resulting model saw people increasingly involved as only one of several 'factors of production'—and in a rapidly mechanizing world, often in a marginal 'machine-minding' role. At the same time the need to co-ordinate different operations in the emerging factories led to a rise in indirect activity and a separation between doing and thinking/deciding. This process accelerated with the increasing demand for manufactured goods throughout the 19th century, and much work was done to devise ways of producing high volumes in reproducible quality and at low prices.

Developments in these ideas took place in a number of locations, each adding elements to the emerging model. As Jaikumar (1988) puts it:

'Whereas the English system saw in work the combination of skill in machinists and versatility in machines, the American system introduced to mechanisms the modern scientific principles of reductionism and reproducibility. It examined the processes involved in the manufacture of a product, broke them up into sequences of simple operations, and mechanized the simple operations by constraining the motions of a cutting tool with jigs and fixtures. Verification of performance through the use of simple gauges insured reproducibility. Each operation could now be studied and optimized.'

With the rise of industrial society came the increasing pressure to separate out hand and brain—so that by the turn of the twentieth century it was possible for people to speak of 'thinkers' and 'doers'. Developments in manufacturing organization and technology moved rapidly and the emergence of a 'scientific management' approach meant that skilled specialists were able to analyse and devise 'the one best way' to accomplish a wide range of tasks. It is hard to argue with the results they were able to achieve—for example, in a series of famous experiments Frederick Taylor was able to increase dramatically the productivity of businesses as diverse as steelmaking, dock handling and engineering (Taylor 1947).

The most famous example of this 'scientific' approach was probably in the emerging models for automobile manufacturing, which were pioneered by Henry Ford and his team of engineers. Faced with the challenge of a widely differing workforce, many of whom lacked manufacturing skills and in a lot of cases spoke poor English as a second language, they developed an approach to making cars that had profound impacts. From a highly variable activity with low productivity and variable quality, the 'mass production' system changed car manufacturing dramatically. The dramatic impact of this pattern on productivity can be seen in the case of the first assembly line, installed in 1913 for flywheel assembly, where the assembly time fell from 20 man minutes to 5. By 1914 three lines were being used in the chassis department to reduce assembly time from around 12 hours to less than 2 hours.

This approach extended beyond the actual assembly operations to embrace raw-material supply (such as steelmaking) and transport and distribution. At its height a factory operating on this principle was able to turn out high volumes (8000 cars/day) with short lead times—for example, as a consequence of the

smooth flow that could be achieved, it took only 81 hours to produce a finished car from raw iron ore—and this included 48 hours for the raw materials to be transported from the mine to the factory! In the heyday of the integrated plants such as at River Rouge, productivity, quality, inventory and other measures of manufacturing performance were at levels that would still be the envy even of the best organized Japanese plants today. Table 1.2 highlights some of the key features of this blueprint for manufacturing, typified in the car plants of Henry Ford but applied to many other industries throughout the 1930s and beyond.

**TABLE 1.2** Characteristics of the Ford/Taylor system for manufacturing, circa 1920.

- 
- Standardization of products and components, of manufacturing process equipment, of tasks in the manufacturing process, and of control over the process
  - Time and work study, to identify the optimum conditions for carrying out a particular operation and job analysis, to break up the task into small, highly controllable and reproducible steps
  - Specialization of functions and tasks within all areas of operation. Once job-analysis and work-study information was available, it became possible to decide which activities were central to a particular task and to train an operator to perform those smoothly and efficiently. Those activities that detracted from this smooth performance were separated out and became, in turn, the task of another worker. So, for example, in a machine shop the activities of obtaining materials and tools, or maintenance of machines, or of progressing the part to the next stage in manufacture, or quality control and inspection were all outside the core task of actually operating the machine to cut metal. Thus, there was considerable narrowing and routinization of individual tasks and an extension of the division of labour. One other consequence was that training for such narrow tasks became simple and reproducible and thus new workers could quickly be brought on stream and slotted into new areas as and when needed
  - Uniform output rates and systemization of the entire manufacturing process. The best example of this is probably the assembly line for motor cars, where the speed of the line determined all activity
  - Payment and incentive schemes based on results—on output, on productivity, etc.
  - Elimination of worker discretion and passing of control to specialists
  - Concentration of control of work into the hands of management within a bureaucratic hierarchy with extensive reliance on rules and procedures—doing things by the book
- 

There is little doubt that this was a 'better' way of making cars—at least in terms of the overall production figures (although the question of whether the conditions under which manufacturing took place were better is perhaps more open to question). But the trap it set was to help embed two powerful beliefs:

- That there is only one 'best' way and
- That this was something which only specialists could be involved in designing and refining

The belief in the one best way began to fade as others found different 'better ways' and the need for constant innovation asserted itself in this and the many other industries which began rapid growth in the early 20th century. Ford's dominance of the car industry fell away as the market began to demand more than the standard Model T in 'any colour as long as it's black!'. Innovation in manufacturing and services increasingly began to focus on meeting a number of different targets, involving non-price factors like speed of response, range of choice, degree of customization, quality, design, etc. as well as the consistently important one of price. Faced with a moving target like this the 'one best way'



model began to show cracks, although the dominance of the 'Fordist' approach can still be seen as we move into the 21st century (Best 2001).

The underlying power of the second belief comes from a long history of marginalization of the potential contribution that much of a workforce could make. Clearly this is not the product of a conspiracy on the part of managers, but rather an unfortunate by-product of centuries of trying to make operations more efficient and effective.

## 1.7 From Doing to Thinking Organizations

'Microsoft's only factory asset is the human imagination.'

(Bill Gates)

It is easy to sit back as armchair critics of this view. Of course, we would agree that there is a nonsense about seeing people as either thinkers or doers. Any quick poll of a group of people in any organization about how they spend their spare time reveals an enormous palette of skills and experience—people are artists, musicians, teachers, organizers, accountants and many other things besides. In carrying out these roles they are all deploying huge reserves of creative problem finding and solving skills of the same kind as we need in organizational life. The statement 'with every pair of hands you get a free brain' has a resonance that it is pretty hard to ignore.

But creating the kind of organization in which everyone feels a sense of involvement and shared purpose and uses their individual and collective creative abilities to push forward the innovation frontiers is not simple. Not everyone wants to go in the same direction and people have different motivations for working, some of which do not include more than an instrumental relationship. Even if they do 'buy in' to the idea of contributing their ideas, they may lack formal skills and experience about how to make a contribution, or feel reluctant to offer what others might see as silly or simple ideas. Others might, reasonably, ask, 'what's in it for me?'—what share of the additional benefits arising from their ideas to the firm might they expect to receive? Organizing for higher involvement in the innovation process will need new structures and procedures if it is to be more than just another piece of wishful thinking.

It has proved hard enough to manage specialists in terms of enabling their creativity and innovation. The challenge of extending this to a much broader part of the workforce throws up real questions about how much management time and organizational resources it might consume—and whether these costs would outweigh any benefits.

Why should organizations bother with high-involvement innovation? There are two answers to this—the first is that there is increasing evidence from a wide range of sectors, geographical locations and firm sizes to suggest that it does make sense to mobilize people because of the direct financial benefits that they contribute. Chapter 2 explores this theme in more detail but it is worth noting some interesting data from the USA, which reviews several large-sample surveys and concludes that high-involvement human resource practices can be correlated with superior company performance in terms of sales revenue, shareholder value and profitability (Huselid 1995). This is matched by experience and research in countries as far afield as Finland, Australia and South Korea.