RIDING THE INNOVATION WAVE

Learning to Create Value from Ideas

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Learning to Create Value from Ideas

BY

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INTRODUCTION

INNOVATION — AN OLD CHALLENGE

Innovation is about survival — of course. If we don't change what we offer the world and the ways in which we create and deliver it then we may not be around for long. In a competitive environment product/service and process innovation are part of the strategic imperative.

But it's not just about being prepared to change — we have limited resources so we need to make sure the ways in which we change are the right ones and that we balance the risks and the potential rewards. And we need to think strategically about this, building for the long-term as well as dealing with short-term challenges.

We also need to be able to leverage something — we might be in the right place at the right time once but if we want to stay in the game we have to invest. Innovation is ideas — knowledge — converted into value and so we need to think about how to build and manage our knowledge base — competence.

Knowledge isn't enough — we also need to learn how to create value from it. Innovation isn't a magical event like the cartoons depicting a light-bulb magically flashing on above someone's head. It's about turning those ideas — knowledge — into value, and that involves a long and uncertain journey. We might manage

to get to our destination once by sheer good fortune, but being able to make the journey repeatedly needs much more in the way of a map, provisions, experience.

Successful innovation requires careful management, organizing key behaviours into embedded routines which define the way we approach the challenges of searching for opportunities, selecting the right ones and implementing innovation against a background of uncertainty.

And finally — as if innovation wasn't already a tough enough order — we also need to be able to step back from time to time and reflect on how well we are managing it. In a changing world are our recipes, our organizational structures and processes still the right ones? Do we to keep on, cut back or develop new routines? Does our approach to managing innovation still fit the world in which we are trying to operate? Besides the capability to turn knowledge into value we need a second order capability to reflect and learn, constantly tuning our approach — what we could term *dynamic* capability.

So if we are serious about innovation then we need to be strategic in the ways we think about, organize and manage the process. Survival is not an accident.

THE DNA OF INNOVATION

In 1962 the Nobel Prize for Medicine was awarded to Frances Crick, James Watson and Maurice Wilkins for their work unravelling the structure of the DNA molecule. Together, with others in the team like Rosalind Franklin, they were able to open the door to our better understanding of genetics — how characteristics are passed on from generation to generation. A century earlier Gregor Mendel was already experimenting with these ideas in his monastery garden in Austria but the key piece of the puzzle which eluded

him was the structure and operational information which the DNA model provided.

Strands of DNA make up genes and these provide the carriers for what makes an individual in terms of their make-up and behaviour — blue eyes, long legs, stronger heart, etc. Genes encode the programs for the future and being able to carry forward key characteristics enables us to survive in hostile and complex environments.

Understanding the building blocks through which genetics operates moved us to a new world where we can now engage in genetic engineering — removing troublesome genes or switching them off, splicing in new ones with additional capabilities, improving the health of existing ones.

Organizations have DNA — and we often use this metaphor. But DNA in an organization involves a set of 'programs' embedded in its structure and processes — the way we do things around here. Much organizational theory talks about 'routines' — and these are effectively the expressions of genetic coding around how we tackle the day-to-day tasks of the organization. So in the world of innovation there are routines for how we search, how we choose projects, how we manage them and so on.[1]

The big difference between an organizational model and the wider world of evolutionary genetics is that we don't have to wait for random mutations to modify the genes. Within organizations we can carry out 'genetic engineering' to revise and reshape the genes in more active ways. That's the role of leadership, trying to create organizations which are well adapted for their current and future environments.

If an organization is to survive and continue to innovate it needs to find some way of passing on its genes — continuity. And it also needs to have the capacity to review, revise and modify its genetic make-up for innovation — changing some and splicing in others, adding to the overall capability.

THE 'ONE-HUNDRED CLUB'

Needless to say not many organizations manage to do this over an extended period. Anyone might get lucky once — but whilst we hear a lot about start-ups as the exciting 'sharp end' of innovation, the reality is that most of them do not stay the distance. Growing a business from these early seeds isn't simply a matter of time — there's no guarantee of survival. It's a process fraught with challenge and based on crisis — riding the waves of change and being able to stay on top (even if its' a rough ride) rather than being drawn under.

Behind every global business there was once an entrepreneur or two — Henry Ford, William Procter and James Gamble, Bill Hewlett and Dave Packard, George Eastman — make up your own list. Making the journey from those early days to where they are today wasn't easy and involved negotiating a series of strategic challenges along the way. Leadership can take many forms, from tight hands-on control (think Steve Jobs or Jeff Bezos) through to models in which the founders continue to influence through gentle guidance, inspiring and challenging the organization as it moves forward. James Dyson was very much a hands-on founder but now plays a key role in shaping the longer-term strategic development, leaving the day-to-day running of the company to others. Richard Branson plays a similar role within Virgin as does Amancio Ortega within Inditex (Zara's parent company).

Growth inevitably requires a different approach, putting structures and processes in place where there was once fluidity and informal exchange. Striking the balance between creativity and control, between exploration and exploitation, between do better and do different — these are the day-to-day challenges of organizations moving from entrepreneurial start-up mode to long-term large-scale activity.

So it's not surprizing that relatively few organizations find themselves celebrating their 100th birthday. The challenges of

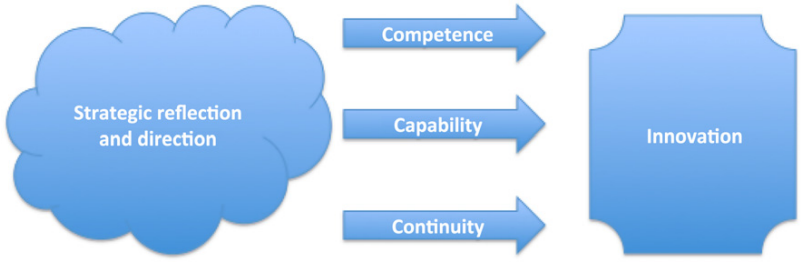
innovation not only involve negotiating a turbulent world of changing technologies, markets and competition, they also involve the need for reviewing and changing the innovation model itself. Importantly this is not about simply adopting the latest management prescriptions, and following the fads and fashions of thinking about how to grow innovative businesses.

THREE KEY ELEMENTS

Smart survivors adapt and develop their own solutions, configuring from useful new external ideas and weaving these into the fabric of their own organization. They aim for continuity and flexibility and in particular they pay attention to three key strategic areas in which they build their organizational strengths (Figure 1.1):

1. *Competence* — innovation relies on new knowledge. So we need to work on building the knowledge base, not just accumulating but gardening, nurturing new shoots, trying new crops, ensuring fertile soil — and from time to time pruning and cutting back. Innovation strategy depends on managing processes of competence building (through R&D, market research, strategic alliance and network building) and on other processes

Figure 1.1. Core Elements in Long-term Innovation.



through which the knowledge base is configured and deployed to create value.

2. *Capability* — innovation isn't simply about accumulating knowledge, it is about creating value from it. Being able to do this and to repeat the trick means learning and embedding key lessons about how to make innovation happen. How to search, how to select, how to implement, how to capture value. The concept of 'routines' is helpful here — repeated and reinforced patterns of behaviour which eventually become embedded in the way we do things — our policies, procedures, processes.
3. *Continuity* — over time these approaches become the company's culture — 'the way we do things around here' representing its underlying values and beliefs. But if it is going to survive and prosper then it also needs ways of ensuring carryover of the essence of the company, understanding and transmitting its DNA to future generations.

WHO DOES THE INNOVATING?

It's easy to talk about 'the organization' as if it were a machine just running these programs — routines — for innovation. But of course it is not — organizations are made up of people and they enact the routines. Its leaders, who create and shape the context and give strategic direction, and its entrepreneurs, who enable change to happen.

These days entrepreneurs are part of a mythology in which innovation is seen as being about heroes and start-ups. Great men and women who through their passion and insight take bright ideas and wrestle them into something that creates value. It's a familiar pattern — but it's also an erroneous one. Most innovation doesn't take place in this dramatic battling fashion; instead it is a long haul, building and renewing, occasionally pushing the

frontiers. Start-ups are only the beginning of what can be a long journey over constantly changing terrain.

The men and women we associate with this start-up phase may exert an influence and provide a direction and energy. But they didn't grow their businesses alone — they did so through engaging and enabling many others to help them in their entrepreneurial journey.

Entrepreneurs matter — the individuals and teams who enable innovation through their energy and passion. Innovation, as Peter Drucker pointed out, 'is what entrepreneurs do'.[2] But they mostly do it in more modest ways, working within all sorts of organizations to keep the innovation motor running. They are the agents of change, the champions who move things forward, carrying the innovation torch.

Maybe we need a new word for this character — someone who works within an organization but who is also an agent of change. Various attempts have been made — the idea of the 'intrapreneur', for example someone who is prepared to swim against the mainstream organizational tide.[3] Or 'promotor' — a label used by German researcher Eberhard Witte who suggested that we need different kinds of promotors, some with the technical knowledge to help mobilize their quest for change ('fach-promotor') and some with the power and influence to help drive it forward ('macht-promotor').[4] Others, like Roy Rothwell, use the term 'champion' — giving the sense of someone prepared to stand their ground, fight their corner and push their vision.[5] And Tom Allen's work on innovation in the NASA space programme gave us another useful label — the gatekeeper, the person at the centre of social networks and webs of influence.[6]

Whatever the label it's clear that there are many such 'everyday entrepreneurs' in our organizations and collectively they are responsible for moving the innovation agenda forward. They are different from start-up entrepreneurs in terms of the context within which they work, but also in terms of the underlying model

they espouse which is less about disruption (the 'creative destruction' outlined by Joseph Schumpeter's famous theory) and more about 'creative evolution'.[7]

LEARNING FROM HISTORY

How does innovation happen? We know a lot about isolated cases, stories of breakthroughs like Post-It notes, the Model T Ford, Dyson's bag-less vacuum cleaner, the i-phone, etc. …. But how does innovation happen within organizations, what goes on below the surface events, what are the underlying routines and how do they change over time?

How do champions operate and how do they keep things moving in a context which is also about stability and resilience? How can leaders of organizations create the conditions within which champions flourish, supporting them, challenging them, stretching them — but above all not losing them because of the frustrations of working within a context that slows them down?

One source of answers is to sit on the shoulders of an organization as it goes along its innovation journey. That's the story of this book — tracking the experience of a small start-up in 19th Century Germany to its position today as a large multinational player on the innovation stage. Hella (or to give it its full title, Hella KGaA Hueck & Co) is a large German business which, despite its size (34,000 employees), wide international reach (over 125 locations in 35 countries) and large business turnover (€6.4 billion sales in 2015–2016), retains a strong sense of its origins as a family concern established over a 100 years ago in north western Germany.

Its arrival as a highly successful business today — and indeed its future — is not the result of some static feature like ownership of assets. Instead it is about the strategic development of competence — building and managing a deep knowledge base on which the company can continue to draw. It is built on capabilities to organize and manage innovation which are embedded as

routines — the way we do things around here in terms of structures and processes. And it is about continuity, carrying forward the lessons of the past encoded in its DNA — the 'genetic programs' which underpin those routines.

This is a principle which the company recognizes — in the preface to its latest Annual Report it talks about the key role of innovation:

> *Innovative ideas form part of the Hella DNA and are at the same time key factors for successful differentiation in the global automotive industry. This provides us with the opportunity to take advantage of one of our core strengths and to further expand out technological leadership in response to the central megatrends of environmental and energy efficiency, safety, styling and comfort.*

Above all it is about people — and specifically multiple innovation champions — who keep things moving. They need a framework of support and an underlying value system — which in this case can be described as 'entrepreneurial responsibility'. It's a two-way thing — the expectation that employees will play a part, will take on the role of champions. And it's an expectation, a responsibility amongst senior managers to create the conditions in which they are able to do this.

It's not a simple recipe — as we'll see that the stage on which this innovation drama plays out gets ever more crowded and complex. New theatres (geographies and markets), new scenery and properties (the technology) and new audiences (new market expectations …).

INTRODUCING HELLA

From its earliest days as a start-up in the newcomer automobile industry through to today's position as a major player, not only in

automotive but also in electronics, lighting and other markets, Hella has demonstrated a continuing strand of entrepreneurship driving a steady stream of innovation.

The company consists of three business segments: Automotive (comprising Lighting and Electronics, After-market and Special Applications, with the first one accounting for the bulk of the business (Figure 1.2).

Lighting was where the company began and it remains one of the world's major players, with a strong history of innovation of key technologies; much of the company's current strength is based on their highly successful application of LED technology.

Electronics has moved from being a support division providing controls for lighting applications to a key pillar of the company and one where growth potential is very large. With the shift towards intelligent vehicles, driverless cars and increasing applications for comfort, security and energy efficiency have become huge opportunities for Hella to deploy its deep understanding of sensors and actuators.

Whilst a great deal of Hella's work is with the key automotive manufacturers it has also grown a strong business supplying the after-market, both in terms of spares and replacement parts and also to support workshops and garages in the increasingly technology-based world of diagnostics and repair.

Figure 1.2. Core Business Areas within Hella.

Source: Hella Annual Report (2017).

And there is a long tradition within the company of deploying its knowledge base in related market places, providing lighting and control solutions for marine and off-road special applications.

Of course any company is more than its business units and in particular it is useful to look at Hella's corporate culture. There is a clear statement of this expressed formally as a commitment to seven basic values:

1. Entrepreneurial spirit
2. Teamwork
3. Sustainability
4. Focus on performance
5. Innovation
6. Integrity
7. Exemplary conduct on the part of all concerned

As we've seen, underpinning this is a strong emphasis on innovation and entrepreneurship — the innovation DNA.

HELLA AND INNOVATION

Hella has a strong formal commitment to innovation. Research and development expenditures were €623 million or 9.8% of sales in 2015–2016 and the number of employees working globally in R&D increased by 3% to over 6000. The message to the world is clear — Hella is a knowledge-based business. The 2016 annual report presents the company's commitment to innovation:

> *... we never stop pushing back the boundaries of what is technologically possible. We research, develop and work intensively to create innovative solutions and technologies that shape the market ....*

As the group's CEO Dr Breidenbach explains: '*Technologically leading products are key to the HELLA strategy [...] they create a competitive edge and at the same time build the foundation for our future growth*'. But the real story is not just about investment in R&D but in how to build innovation into the culture, to make it part of 'the way we do things round here'.

Over the years innovation has taken many forms. The development of new products has been a core feature but so too has change in the ways in which those products are created and delivered — process innovation. From a small local market place Hella has grown to be a major international operator and in doing so has introduced significant innovation in positioning. And it has not been afraid to rethink its core business model and to challenge and develop that as another source of innovation.

We'll explore examples of these different types of innovation in more detail in Chapter 3 but it would be good to begin by trying to trace the 'innovation red thread' which runs through the company's history.

LOOKING BACK, LOOKING FORWARD — THE NEED FOR DYNAMIC CAPABILITY

It's a disturbing statistic but surprisingly few organizations survive for long; most have a life span that is considerably less than that of a human being! Of those which do make it the one defining characteristic is change — they adapt themselves to a turbulent and constantly shifting environment. That's the innovation imperative — if we don't change what we offer the world and the ways in which we create and deliver that offering we probably won't be around for too long.[8]

For this reason we need the competence, capability and continuity outlined above. But there's more to it than that. Even those organizations that are committed to innovation, spend money on

it and create supporting structures and processes to repeat the trick may still get into trouble. The challenge is one not just of innovation but of 'dynamic capability' — the ability to learn and adapt, to be prepared to review and change the approaches which the organization takes to managing the overall process.[9] It should constantly ask itself not just 'do we innovate?' but three key questions about its innovation management routines.

Of the ways in which we innovate:

- Which ones should we do more of, reinforce?
- Which ones should we do less of, or even stop?
- Which new approaches do we need to learn?

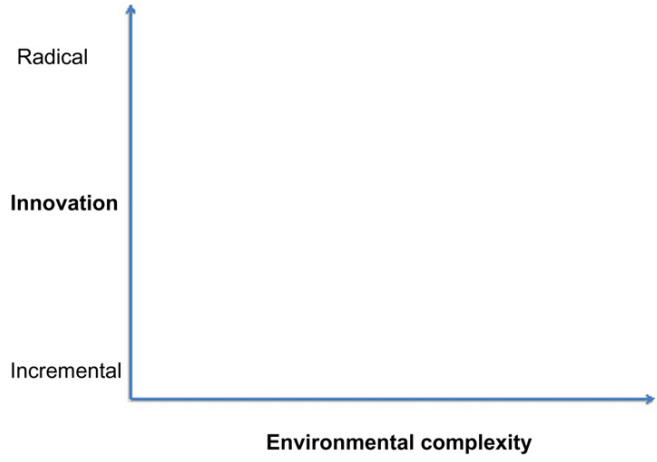
For Hella this has been the real story behind over 100 years of growth. There's a pattern, cycles of entrepreneurial exploration of new opportunities linked to systematic consolidation around them. Even though it might involve different people and take different forms, it characterizes the company's approach and is enabled by their core value of 'entrepreneurial responsibility'. This isn't an empty slogan — it is backed by real investments in giving people room and space and autonomy to be entrepreneurial.

LEARNING TO MANAGE INNOVATION

Here's a simple map of innovation space and we can use it to map the approach which Hella — or any other organization — takes to dealing with a complex environment (Figure 1.3).

Along the horizontal axis we move from focusing on a few well-known and understood elements in the environment to trying to deal with many unknown features. We start from a familiar world in which we know our customers, our competitors, our technologies — it's the frame within which we are comfortable and successful. But we also know that we need to explore on the right hand side, looking at new technologies, talking to new

Figure 1.3. Framing the Innovation Challenge.

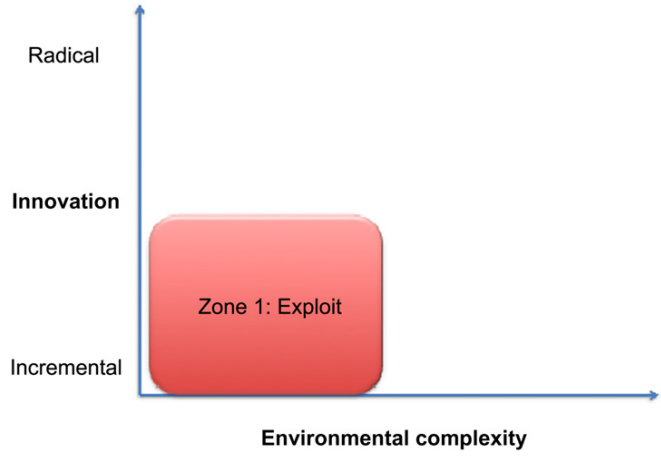


customers, watching for new competitors, learning to deal with new elements.

Along the vertical axis we are constantly trying to make innovation happen — in the products/services we offer the world, in the processes we use to do that, in the markets we serve and in our business models about how we operate to create value. This axis runs from incremental change — where we are really building on what we know, doing what we do a little better — to more radical change where we may be doing something that we (or maybe the world) have never seen before.

When we work in the zone 1 space it is essentially about incremental innovation based on exploiting what we already know. This is familiar territory in terms of technologies we understand, markets we know about, competitors whose movements we track — our job here is continuous improvement around innovations we have already established. This is, for example, Hella's core lighting business which has been continuously improving for over a century and in which it is a recognized world leader. A big part of this story is driving down the costs whilst increasing the

Figure 1.4. Exploiting Opportunities.



quality and differentiating the core product to meet particular user needs (Figure 1.4).

And we can push the frontiers, for example by investing further in promising technologies or working with key customers to stretch into a new generation of product. In Hella's case this might be their first moves into halogen lights, LEDs or climate control — pushing the envelope and moving the whole industry forward (Figure 1.5).

Zone 3 is very different. This is unexplored, unmapped territory, bringing new elements into the frame and combining them in new ways. It's where things interact, co-evolve and emerge. It's hard to predict innovations here — it's a soup of possibilities but it's not clear what will actually work. In innovation this is often called the 'fluid' state because it is just that — everything is moving and interacting, bubbling up with possibilities. It's classically where entrepreneurs operate, dancing amongst the opportunities, changing direction, trying and failing and then pivoting to something else which is more promising (Figure 1.6).

Figure 1.5. Pushing the Frontiers.

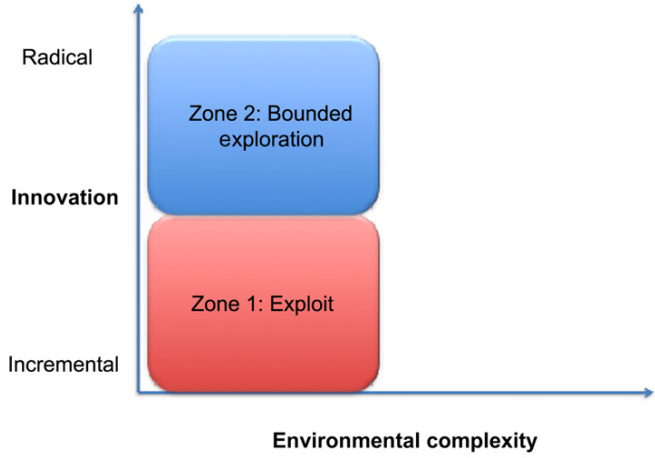
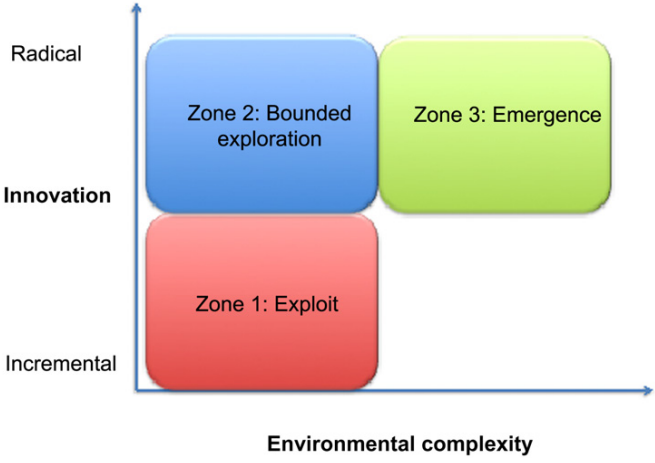


Figure 1.6. Emergence of New Possibilities.

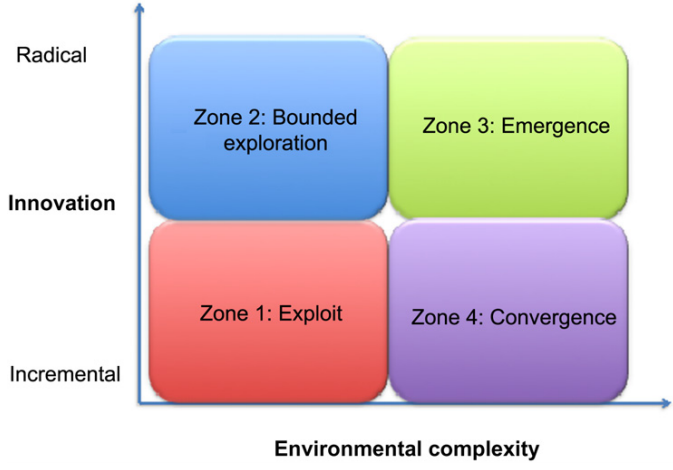


Think about the emerging automotive industry back in the 1890s, the world in which Hella was born. This was a rich soup of possibilities but no one knew how it would play out. The motor car — was it just a technological toy or a plaything for rich people? Would it really take off as a mass-market product? What

would it look like — the 1890s were characterized by all sorts of ideas about cars and no clear convergence about the shape or format. What would the important technologies be and how could they come together? There was only one way to find out — try things out and see if they worked. Classic 'probe and learn' experimentation by entrepreneurs brave enough to take the risks.

Gradually the experimental ideas, the probes converge and there is a trajectory that seems to work and around which innovation moves from establishing the idea to improving on it. This is called the move to a 'dominant design' — and in the emerging auto industry it was Henry Ford's Model T which led the way. From this point the basic framework of the product became established and attention shifted to variations around that core theme and on to the big question of how to make the thing reliably and cheaply. There are still many players and many ideas involved at this stage but there is also a convergence; it's at this point that some of the key players begin to emerge and others drop out of the game (Figure 1.7).

Figure 1.7. Convergence around New Dominant Design.

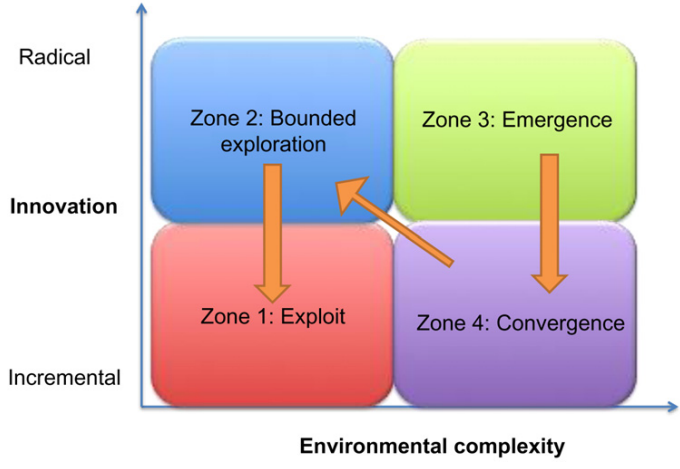


There's also plenty to do in bringing this radical new world into the mainstream, especially if we are talking about bringing something new from the right hand side into our left hand 'mainstream'. How do we bring what are, by definition, new skills, tools, technologies, knowledge sets, etc., into the established world? And how do we handle the culture clash likely to be involved? How do we bring the two worlds together?

Over time we can see a pattern, a zigzag process of innovating in different ways and in different spaces but linking things together. Today's experimental search in the right hand areas will be tomorrow's mainstream. And this means that any organization needs multiple parallel approaches to dealing with how it manages innovation. To take a simple metaphor, rather than one instrument it needs an innovation orchestra of different players who are all trying to create something together (Figure 1.8).

There is scope for continuous improvement approaches in the zone 1 area — and this lends itself to high involvement programmes bringing every employee into the innovation space with their ideas on how things could be improved. And there is scope

Figure 1.8. Exploring Innovation Space.



for formal R&D, pushing the frontiers in zone 2 through organized search and accompanying investment in exploring. As we move to the right so we need entrepreneurs, able to try often very different approaches, take risks and explore. And as they come up with what may be very different ideas we need business builders able to take a start-up in a very different field and develop it into something that could move across to be part of the company's future mainstream. We need scouts, able to move and make connections far away from the mainstream, and we need brokers and gatekeepers, able to connect to people 'out there' in the right hand space with interesting ideas, technologies, opportunities.

HELLA'S INNOVATION JOURNEY

That's been the pattern with Hella — from the earliest days when founder Sally Windmuller began exploring and experimenting with the new car industry, through to the post-war growth, through moving into new international markets and taking bold leaps into new technologies, like the jump into electronics in the 1980s or LEDs in the 1990s. Back in 1967 the company set up a 'Future developments' group whose remit was to explore a range of ideas which have since gone on to become standards. Importantly, this was an open search group and some of the key technologies — like heated screens — began life outside the automotive sector and were brought across from the aviation world.

This proactive approach to innovation remains a key part of the Hella strategy — for example, looking at new ways to engage employees as entrepreneurs through the 'Driving E-novation' programme, rethinking the way Advanced Engineering works to increase its agility and ability to explore new and different ideas fast, and most recently with the development of a 'disruptive innovation' capability in Berlin and Silicon Valley.

And it's been a pattern with some consistent elements, what might be called Hella's 'innovation DNA'. These strands include:

- Learning from and with growing markets has always been a key feature, from the earliest days through to building close co-operations with key automobile makers, through to today's exploration of very different market locations like China and India, and working to learn new approaches from those opportunities;
- Encouraging and supporting entrepreneurial behaviour — creating the conditions within which 'entrepreneurial responsibility' can form part of the culture;
- Sustaining a commitment to developing and growing the necessary skills to support an increasingly wide knowledge base — and doing so through investments in people and in educational systems to provide this;
- Working with external networks, linking to people outside the organization to ensure the flow of knowledge — for example, in moving into the new field of electronics back in the 1980s;
- Partnering with key technology developers, both in research centres and collaborating with competitors to help push the overall innovation frontier in key areas like advanced lighting;
- Learning about new technologies and then managing the difficult task of integrating these knowledge sets within the company — 'rewiring Hella's brain!'. The example of moving into electronics, which effectively shifted the knowledge base from mechanical engineering and lighting physics to include a completely new field (carried with it by a wave of new people), highlights the challenge here.

All of these are learned and embedded parts of the Hella approach — and in moving into the new landscape identified

above will be central to the future of innovation within the business.

We'll look at these in a little more detail in the rest of the book but in the next chapter let's take a closer look at Hella's innovation history.

FURTHER RESOURCES

You can find a number of useful resources — case studies, video and audio, and tools to explore some of the themes discussed in this chapter at www.innovation-portal.info

In particular:

- Case histories of companies innovating over an extended time period — Marshalls, Dyson, Zara, 3M, Philips and Corning
- Case studies of changing patterns of innovation in various sectors over time — the imaging industry, music industry, lighting industry
- Video introduction to the idea of innovation management and a process model

REFLECTION QUESTIONS

1. Identify an organization that is a member of the '100 Club' — i.e. it has been around for over 100 years. Try and map their innovation history, key milestones, etc.
2. Use the map in Chapter 1 to look more closely at how they explore innovation space
3. Discontinuous innovation happens. And whether it is triggered by technological, market or political change the result is the same — a challenge to established players and an opportunity for entrepreneurs. Find an example of a

discontinuous shift — for example a major change in technology, markets or regulatory environment. Look at the players within that sector and explore what they did (or did not do) to ride with the waves of change. What else could they have done? Who were the newcomers trying to enter the space and how did they play their game? (You can find a framework to help with this on the Innovation Portal 'Patterns of discontinuous innovation').

NOTES

1. You can find a more detailed discussion of the idea of organizational routines for managing innovation in Joe Tidd and John Bessant (2014).
2. Drucker (1985).
3. Pinchot (1999).
4. Witte (1973).
5. Rothwell (1992).
6. Allen (1977).
7. Schumpeter (2006).
8. de Geus (1996).
9. For a more detailed discussion of this topic see Zollo and Winter (2002) and Teece and Pisano (1994).