Örjan Sölvell
On Strategy & Competitiveness

11 Recipes for Analytical Success

DRAFT 17 March 2015
This is the door I entered as a new student at the Stockholm School of Economics, SSE, on August 26, 1976 – and this book is about my knowledge journey that started that day.

Part I of the book covers my story with major academic stops, besides Stockholm, in Washington D.C., Boston, Tokyo, Boston again, Uppsala and London. Part II presents my knowledge journey translated into 11 easy to use analytical recipes. Bon appétit!

P.S. by the way, I am still trying to find the exit – I seem to lack a recipe for that. D.S.
On Strategy & Competitiveness
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After more than three decades of teaching on the subjects of strategy, industry analysis, competitiveness, clusters and innovation, I finally decided to put together my models or “home made recipes” into one easy to read and use “cookbook”. I call it a book of recipes as each conceptual and simplified model is there to help students, practitioners and policymakers to put together the complex array of ingredients needed for nations, regions, firms and other organizations to develop a sound strategy – a direction and a basis for decisions of what to do, and what not to do – in order to reach desired futures. The recipes are intended to help you to look for the right ingredients and to offer advice as to how the ingredients can be put together to form a holistic understanding of a particular strategic issue.

There are of course plenty of textbooks on the subject of “Strategy” and “Competitiveness”, and I will refer to some of the key literature for the interested reader. However, this book is not an attempt to summarize standard models and theories around strategy and competitiveness. Instead, it is a book describing the 11 conceptual models I have developed to describe and explain issues of strategy, competition, competitiveness, and cluster dynamics in the classroom. In fact all the recipes presented here have emerged out of classroom discussions with students and practitioners. Sure enough, the understanding behind the models emanates to a large extent from research and theoretical models, but my conceptualization has only emerged when the theories and models have been applied and discussed in class.

Up until now I have only distributed copies of slides of these recipes to my students. The idea of putting it all into one easy to read book came to me quite recently. While spending my sabbatical at the London Business School in the spring of 2013, I received inspiration for this cookbook from my colleagues Julian, Costas and Freek at the Strategy Department. One day walking over to the faculty lunch I asked what they teach in their Strategy classes; and they answered “Freek on Strategy”, “Costas on Strategy” and “Julian on Strategy” and it clicked. It took two years to write it but now it is finally finished.

Outside the classroom many colleagues have influenced the ideas and concepts now arranged into the different recipes, and there are surely many similar recipes in the market. Take a look at some of the cookbooks in the bookstore – if you can find a bookstore these days; there are obviously many ways of making a Boeuf Bourguignon. But, it is my sincere hope that this collection of homemade recipes will bring some
added flavors to your table, and that it will be easy to use for chefs with both academic and non-academic backgrounds.

I am greatly indebted to the many scholars with whom I have come to work with over these 30 plus years. I would like to particularly mention the late Professor Gunnar Hedlund (co-creator of the Railway Model) and Professor Jan-Erik Vahlne (supervisor for my PhD thesis when the Radio model emerged) both at IIB, and Professor Michael E Porter at HBS, the master of some of the most used recipes in the world, who taught me to move from the complex to the simple. Others who have been involved in my research over the years, as co-authors, include: Ivo Zander (co-creator of the Multi Home-Based model, and the brain behind most of our good ideas that emerged during the 1990s), Maria Bengtsson (co-creator of “competition climates”), Henrik Bresman (co-creator of the Hourglass Model, and Henrik Glimstedt helping me to sharpen the model) Anders Malmberg (who brought me into the field of Economic Geography which led to a much sharper Hollywood Model), Julian Birkinshaw, Christian Ketels, Sergiy Protsiv, Sergey Morgulis-Yakushev, and of course Göran Lindqvist and Mats Williams (co-creators of the 7 Cluster Gap Model). To all of you a great thank you!

I would also like to thank.... Helena Lundin for xxx, Malin Ekberg-Karlsson, yy. And last but not least I want to thank all the students at SSE and elsewhere that have inspired and challenged me to formulate and reformulate my recipes over the years. I have met so many bright students at SSE at Bachelor’s, Master’s, MBA, PhD level courses; in Strategisk Företagsledning, Strategic Management, Microeconomics of Competitiveness, Industry Clusters and Firm Competitiveness etc., and executive students through the AMP program, and at IFL in Finansanalys, taught jointly with one of my brilliant students from the first 1982 SFL course, Ulf Strömsten.

To move the draft into a finished and readable product, I asked for financial support through a crowdfunding campaign in the spring of 2015. All donors are listed …… to all of you Thank You!

Stockholm in April 2015
Örjan Sölvell
On Strategy
&
Competitiveness

Part I
"Books serve to show a man that those original thoughts of his aren’t very new after all"

— Abraham Lincoln

**Introduction**

When teaching at various institutions around the world during the 1980s and 1990s, I often introduced myself as “coming from Sweden — the country of safe Volvos, depressing Ingmar Bergman movies and high taxes”. Now, I realize I am much more confident talking about Sweden; a country where H&M, Tetra Pak, IKEA, Skype, Spotify and Mojang originated. And where safe Volvos are still manufactured in my home town Gothenburg, but where ownership shifted, first to Ford and then to Geely in China. The Swedish House Mafia and other Swedish success stories in the international music market have replaced ABBA, even though the new ABBA museum in Stockholm draws big crowds from around the world. Best-selling books by Stieg Larsson with the Millennium series opened up for a wave of Swedish crime novels, and Malik Bendjelloul received an Oscar for his first-time documentary “Searching for Sugar Man” in 2013. Sweden has changed and is claiming top positions in world competitiveness rankings – so what happened?
A grey day in February 2013 I was taking the tube over to LSE in downtown London. I had the honor of having lunch with Professor Andrés Rodríguez-Pose, an eminent scholar in the field of Economic Geography. While waiting for him I spotted an ad for The Economist1 – with a big Viking on the front page; you know the red bearded guy with a helmet with two big horns, a late 19th century construction from the era of Scandinavianism. Nevertheless, it turned out that the magazine ran the lead story on the transformation of the Nordic region, concluding that the Swedish economy had now become the most competitive country in the world. Something had happened! The ranking was based on a summary of six international rankings, and the article highlighted a number of transformative ingredients during the last two decades:

- Fiscal surplus straitjacket underscored by a law which made it less sensitive to changes in government
- Public spending had been cut from 67% to 49% of GDP
- Public debt had been reduced from 70% to 35% of GDP
- Introduction of a new pension system based on lifetime earnings and flexible retirement age
- Transformed public service sector, with public financing but private firms supplying the services (health care, schooling etc.)
- Introduction of school vouchers where families make decisions on where to put their children already from grammar school
- Scrapping of inheritance tax
- Scrapping of gift tax
- Scrapping of wealth and property tax
- Marginal income taxes cut from 84% to 57%

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1 The Economist 2-8 February 2013.
Corporate tax rate cut to 22%

So, here we had a long list of political, i.e. fiscal, tax and regulatory, choices – a recipe – that arguably impacted Swedish competitiveness, and brought us to the top spot. Sweden had changed direction during the 1990s, had been through large structural adjustments and was now reaping the fruits. But how should we understand the concept of competitiveness? And what drives improving or declining positions among nations, regions, clusters, industries and individual firms? A large part of this book, and several of the Recipes, is dedicated to help you build answers to these questions.

Somehow nations do not compete – a clear statement from Michael Porter in his seminal book from 1990 “The Competitive Advantage of Nations”. Firms compete, and their competitiveness in international or global markets is highly influenced by their immediate environment, involving both macro elements and institutions, but also micro elements of competition and clusters. Also the influential Economist Paul Krugman wrote on this topic, pointing to the fact that firms compete but nations do not. As with all popular words and concepts, people and “experts” from different walks of life will use them very differently; what is strategy? What is an industry? What is competitiveness? What is a cluster? And so on – and the answers are many. In Part II of the book I will try to help you to sort out some of the confusion; not that there is a “right” or “wrong” way, but I will try to give you guidance as to how you can think about these concepts and how you can use them in a coherent way.

So, here I am in 2015 working with issues around competitiveness, nations, regions and clusters, building on experience from many years of teaching, research and consulting. But how did it all start? Let me take you back to the 1970s when I was about to finish my studies at the Stockholm School of Economics, and tell you a little bit about my knowledge journey over the last four decades. We will walk through a number of orchards where I have picked the fruits of Strategy, Competition, Clusters and Competitiveness, and blend them into useful recipes that you can look up in Part II of this Cookbook – enjoy!

Looking for a Job and moving to the U.S.

After graduating from SSE with a BSc degree in International Business, in the spring of 1979, just like my friends, I was looking for a job and taking the next steps in life. I wasn’t really interested in working in private industry like my closest friend Anders Hagelberg who started at MoDo, a paper company in northern Sweden, or Göran Berntson who joined Ericsson in a small business unit (SRA) competing in the field of radio telephony (which later turned into mobile phones and infrastructure). Other classmates like Erik Skog joined Norsk Data, a quickly growing IT company from Norway, and Jan Nordlander and Håkan Cöster began as product managers at Casco, a chemicals company based in Stockholm. This was not for me. Instead I leaned towards consulting, the route Bengt Walerud went, or possibly towards a job as a civil servant. The reason, in the first place, why I had moved up from my home town Gothenburg to Stockholm, was an effect of Anders’ father Göran telling us that studying Economics and Business at SSE would be a splendid start in our professional careers. As it often has
turned out in my adult life, I did not have much of plans for myself, but the prospect of studying with Anders in a big city was tempting. And when Anders proposed that we should take the International Business (IB) major during our last year at SSE, of course I joined and many years later I became head of the IB program, the IB institute (IIB) and professor of IB – so who am I to teach strategy?

A couple of years after graduation Anders decided to leave business life in the northern town Örnsköldsvik, and pretty soon, after a short stop as a PhD student at SSE, he changed tracks and joined the Foreign Office and became a diplomat. At that time I was well into my PhD studies and decided to stay on track. And maybe this was wise as Anders and I had competed on basically everything since boyhood. One of our SSE professors, Lars Otterbeck, once remarked that our CVs “look exactly the same except for the name, just like Huey, Dewey and Louie”. We had the same GPA from High School, had done similar military service as Quartermasters, worked extra hours for the same company, chosen the same curriculum at SSE, and with the same grades – except a smaller course in Taxation Law where I beat Anders!

During my last semester at SSE, while writing the Bachelor’s thesis, I met Associate Professor Jan-Erik Vahlne, who became my supervisor and later my mentor. During the initial meeting with him in his office on Regeringsgatan we talked about the field of IB. Based on years of research with the IB group at Uppsala University, Jan-Erik explained to me that multinational firms, MNCs, typically follow a growth pattern starting with close markets in both a geographical and cultural sense, and then growing outwards. He said: “MNCs grow into international markets just as the rings on the water that evenly spread in circles when you drop a stone”. This was my introduction to IB and the internationalization process model, a model that had been developed by people like Jan-Erik, Jan Johanson, Finn Wiedersheim-Paul, Erik Hönnell, Mats Forsgren and others in Uppsala. As it later turned out, Uppsala has offered a rich garden of knowledge, where I have picked up many ingredients for my recipes through seminars, acting in the capacity of faculty opponent, member of examining committees, and, many years later, as a Visiting Professor in Economic Geography (2003), thanks to my friend Anders Malmberg.

In late spring of 1979 I was going to hand in my application for a job with the Swedish defense research agency (FOA), where I had my first job interview (first of very few job interviews I have had in my life so far). I was asked to submit a reference to the application, and naturally asked my supervisor Jan-Erik if I could use his name. Jan-Erik, then living in Uppsala, was on his way to the train and asked me to follow him to the Central Station in Stockholm. So I did and during the walk he asked me if instead I was interested in joining his team and work on the Governmental Committee studying effects on the Swedish economy from outward and inward foreign direct investment by multinational corporations under the name “Direktinvesteringskommittén” (DIRK). This

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3 During my years at SSE I have been interviewed for internal positions by Dr Lars Bern for the post of Director of the IMIT institute, by Jacob Palmstierna twice for Director of the EIJS institute and later Dean for SSE Riga, and twice by members of the SSE Board for becoming President of SSE (2000 and 2012). In the former interviews I was the one to turn them down, but in the two latter instances the Chairman and SSE Board said no thank you, and went for Presidents from outside SSE (Leif Lindmark in 2000 and Rolf Wolff in 2012).
was a fantastic opportunity for me and right there at the station I decided to rip the application and threw it into a waste basket. Initially I was asked to work jointly with an Visiting Prof Gary Jordan from the U.S. who was based at the Institute of International Business (IIB) at SSE. Gary brought me into the world of MNCs and industry studies in a range of fields: telecommunications, female clothing, welding equipment, rock drilling equipment, rock drills, and air treatment equipment. While analyzing these industries I got interested in the field of Industrial Organization (IO), and became interested in concepts such as concentration of competition, strategic groups, barriers to entry, retaliation, predatory behavior etc. Our job was to collect data and write up industry analyses, describing structural changes (following the Structure – Conduct – Performance model in IO), firm strategies, particularly MNC strategies, and make conclusions regarding plausible effects on the Swedish economy. These industry reports were collected under a governmental report in 1981. At the time of publication I had already moved on to the U.S. to start my PhD studies.

After about a year working for the Governmental Committee I was looking for an opportunity to go to the U.S. I am not exactly sure why, but somehow I thought that moving to the U.S. would be an exciting start of my career. I had ordered brochures from Business Schools on MBA programs. Since I did not have the financial means to really pursue this I was looking for a source of revenue. I discussed this with Jan-Erik and he proposed that I should join the PhD program at SSE, and apply for scholarships. So I did and through a combination of Swedish student loans and a scholarship from SSE I was ready to move to Washington D.C. to study at the George Washington School of Business (GW).

I landed at National Airport in October 1980 and was filled with excitement. My former supervisor Gary Jordan, who originally was from the D.C. area, helped me with contacts and a first place to live. After a couple of weeks I ended up in an old townhouse with five or six other students, only a couple of blocks behind the Library of Congress and Supreme Court on Capitol Hill; 616 Maryland Avenue turned out to be a great place for student life. I studied IB – including the global oil industry for Fariborz Ghadar, a fantastic teacher – and International Law at GW. I also met a lot of new friend including Peter Cunningham, Paul Hogan, Mary Cynar, Sally Roffman and others, and really had a fantastic time. A couple of guest lecturers I particularly remember include a speech by the Nazi hunter Simon Wiesenthal, and the CEO of the largest U.S. paper manufacturer. The speech of the paper executive was on the theme of competitiveness, and he argued that his company was so competitive that he could land paper at lower cost in Stockholm harbor than his Swedish rivals, and this was of course due to much lower input costs in the U.S., possibly lower plant costs, and the exchange rate – a theme we will discuss at length in Part II of this book.

Washington also offered a lot outside school. One evening one of my roommates took me to his law office in Watergate where he showed me the first generation of a “word processing” machine. For the younger readers maybe I should explain that these minicomputers as they were called, established a link between traditional typewriters and PCs that later emerged. Another evening one of our other roommates, who was working for Vice President Mondale, took us to the Old Executive Office Building and then a tour of the White House. Jimmy Carter was President at the time, and we were allowed to look into, but not enter, his office – the oval office. Still, standing on the threshold was quite an excitement for us. I spent many evenings in Georgetown together with Peter, where we listened to Dizzy Gillespie and other great jazz artists. I also remember the many concerts at the Kennedy center led by Conductor Rostropovich. Today, when watching the intro to “House of Cards” I feel right at home.

January 20, 1981 was a special day in D.C. The city was filled with people, and me and my housemates from Maryland Ave went to the Capitol; President Ronald Reagan was sworn in as the 40th President of the United States. Safety was not as strict in those days and we could follow the motorcade by foot along Pennsylvania Avenue – with the President and first lady Nancy standing up in the roof panel. We arranged our own little party in the evening and watched the magnificent fireworks from the mall.

After a summer with railpass travel throughout Europe with my girlfriend, I moved on to HBS and Boston in August of 1981. Through my housemate Paul in D.C., originally a Bostonian and well connected there (and later Town President of Watertown, an adjacent town to Cambridge), I found a first place to stay. After some time I moved on to the other side of Charles River, and shared a condominium on Mass Ave (only a block away from where I ended up with the family twenty years later) with Jeff Ganem, studying architecture at Harvard, and another guy studying at Sloan. My supervisor at home, Gunnar Hedlund, helped me with contacts to the VIS Program at HBS. I was looking for new exciting courses and projects related to IB, Strategy, Competition and Competitiveness. And as it turned out I had the opportunity to study one semester for Louis Wells Jr. (IB), Richard Caves (IO) and Michael Porter (Industry and Competitive Analysis, ICA). I was not smart enough to really appreciate the Nash and Cournot equilibrium models taught by Professor Caves, but I really got hooked on Professor Porter's more qualitative analysis of firm strategy and industry competition. After a two month trip through Hawaii, New Zealand, Australia, Japan, Hong Kong and India, I was back in Stockholm in early 1982, and I started to teach Porter’s Five-Force Model and series of strategy cases in the “SFL” Strategic Management course at SSE.

Two Opposing Professors on Firm Competitiveness

While studying Professor Porter’s ICA course at HBS we learned everything about the Five-Force Model through a range of industry and firm cases. Mike’s new textbook “Competitive Strategy” had just been launched the year before. At some point we discussed the U.S. auto supplier industry, and we analyzed why a car company like GM was making so much profit – in fact GM was the most profitable company in the world.

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for about two decades during the 1950s and 1960s. Using a domestic Five-Force Model we understood that suppliers were weak (GM having access to every component plant and full knowledge of their cost structures), buyers were weak (distribution being controlled by the automakers), there was very little rivalry between the four oligopolists GM, Ford, Chrysler and AMC (still around at the time), there was little threat of entry (a mistake as it turned out!), and really no substitution, aside from bus, rail and air travel under certain circumstances, as every American family used at least two cars. The competitive forces were all weak leading to a high profit potential of the industry, and with GM being number one it should take a lot of bad strategy and ineffective organization to ruin such a gold mine (see Recipe I).

At the same time I was involved in a project led by another HBS faculty, Professor William Abernathy. He had just published an HBR article “Managing Our Way to Economic Decline”7 together with Professor Robert Hayes. They pointed to American managers being too much focused on short-term financial gain and efficiency seeking, instead of long-term innovation and improved competitiveness. Professor Abernathy was a leading authority on the auto industry, and he had shown that Japanese cars had built up substantial cost AND differentiation advantages in certain segments of the market (this ran against Porter’s notion of choice between generic strategies of low cost or differentiation). I went to the HBS bookstore and bought Bill’s book “The Productivity Dilemma”8, where I learned that American carmakers were making cars more and more efficiently, but, the strategies they pursued blocked any kind of real innovation. The jacket of the book referred to one executive stating “the last major innovation was the automatic transmission which went into mass production in the late 1930s”. Hence the subtitle of the book: “Roadblock to Innovation in the Automobile Industry”. Surely U.S. carmakers were adding bells and whistles to new models, but little in terms of real innovation when it came to product quality and fuel efficiency. And, this during a period when European and particularly Japanese auto firms introduced better and better cars; involving improved fuel efficiency that had become more and more important to the American consumer after the two oil shocks.

This was a bit puzzling to me; two professors at the same B School teaching two opposing stories. Many years later I came to understand that firms living in “a perfect Five-Force world” with little competition, will certainly live in a world of high profit potential, but slowly over time, “safe profits” will erode incentives for change and innovation. And at some point profitable firms, lagging in innovation, will face formidable international competitors and technological shifts, undermining historical profit levels. To make my students understand this point I began, after the fall of the Berlin wall, to use the metaphor of the Trabant car. The Trabant car had been produced in former East Germany and was highly competitive in that protected market; potential buyers in the late 1980s were expected to wait 14 years in line to get their car! The Five-Force model was perfect - with no rivalry (Trabant had the small car market and Wartburg the large car market), weak bargaining power of buyers and suppliers, weak substitution and no risk of entry as it was state controlled. But when the Wall fell, and

the “competitive” product of the East met competition from the West, production seized within a couple of years (see Recipe V).

When Michael Porter a couple of years later was invited to become a member of President Reagan’s Commission on Industrial Competitiveness, in 1983, he initiated comparative studies of what he termed “microeconomic business environments” in different parts of the world. The typical question at HBS, why GM was making so much profit – historically – had now turned into; why is it that a world leading company like GM has difficulties in keeping up with Japanese rivals such as Toyota, Nissan and Honda, in world markets, and in the U.S. market in particular? And why is it that it is not only one competitive Japanese firm, but a whole bunch of firms in related industries, i.e. competitiveness somehow seemed to involve whole industries and clusters of interlinked industries. A new model was under way: the Diamond model. We will come back to the two models and compare them in terms of complementarities and contradictions.
Back in Stockholm and continued PhD studies

Before leaving for Sweden around Christmas 1981, I visited Professor Porter in his office together with my Swedish classmate Jan. We discussed the possibility of doing a case on a large Swedish multinational. Back in Stockholm, after my exciting trip via Oceania and Asia (involving memorable meetings with automotive executives through Professor Abernathy’s contacts in Japan), I continued my PhD course work at SSE. I was now looking for a project where I could study strategy, competition and structural change at close range. Together with my supervisor Jan-Erik, and then SSE President Per-Jonas Eliaeson, we wrote a letter to the new CEO at ASEA (later renamed ABB), Mr Percy Barnevik, and asked whether it would be possible for me to do empirical work for my PhD in business segments where ASEA was active. Mr Barnevik passed on the letter to his Executive VP Bert-Olov Svanholm, and he phoned us and asked whether Jan-Erik and I could come over for lunch, which we of course gladly accepted. In the meeting, led by Bert-Olov in the beautiful old headquarter building in Västerås, a couple of other ASEA executives participated including Dr N C Åke Almgren, head of the ASEA Low Voltage Switchgear subdivision (LV switchgear is used for electricity distribution and control inside factories and plants, as opposed to high voltage and medium voltage equipment used in electricity generation and transmission). They suggested that I should take a look at this “mature” business, with well entrenched competitors in all leading markets. I think they were curious to get an outsider’s view of what strategy to pursue in the future; build or sell (yes, like most big corporations at the time they used the BCG matrix)? I took on the challenge and started to work with Åke, and began

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9 Mr Svanholm who passed away much too early in 1997, then Chairman of Volvo AB, later became somewhat of a mentor to me, and he joined the Board of the Institute of International Business (IIB), where I took over as Director in 1994.
digging into the low-voltage switchgear industry and the strategies of different competitors around the globe.

Through lengthy discussions and joint travels, Åke introduced me to the “real world” of competition and strategy. Over the next five years I had the chance of meeting and interviewing a large number of ASEA executives around the world, and I was invited to several internal conferences in such diverse places as Odense in Denmark and Penang in Malaysia. The study of the Switchgear industry later became part of my thesis. Some way into the study of the international switchgear market, one thing became quite clear to me; the old mental model in the “heads” of ASEA executives of how competition was structured, did not match reality. Executives referred to the A, B and C players, where the A players included global corporations such as Siemens, GE, ASEA and Hitachi, the B players being regional players with some degree of internationalization, mostly through exports, one example being Strömbergs in Finland (later acquired by ABB), and the C players being small niche players existing in virtually every national market. Depending on the market segment the C players were sometimes not even on the map, but in other cases they were strong competitors, competing on tough pricing based on small overheads and superior market knowledge. As I was drawing the map of competition, there was a type of player I had spotted that did not fit the A-B-C model (see Figure below).

In Porter’s class I had been taught to draw strategic maps, where one would pick the two dimensions critical to the industry at the time of study. As competition was becoming more global in character, and competitors had different product line scope, these were the two dimensions I used. When presenting my final results to a group of executives in August 1987, I used this map to present “the D players”. The A-B-C model had simply created an empty spot in the top left hand corner.
The D players were as global as the dominating A players, but much more focused in terms of product range. One example was the French firm Telemechanique. But did it really matter to the leading oligopolists that a few firms had embarked upon a slightly different strategy? The answer was clearly yes; in our studies we had found evidence that the D players were picking up market shares in many markets around the world, and for some products they had a cost advantage of up to 40% - 50%! And they were not even visible to the ASEA executives, as they did not match the traditional view of the world! I vividly remember that in my final presentation to the group of executives, Mr Svanholm talked about actively changing the structure of the switchgear industry: "maybe it is time to acquire Telemechanique". I handed in my PhD thesis to the printers around this time, and within days, in August of 1987, The CEO Percy Barnevik announced that ASEA would merge with one of the leading A players, Brown Boveri of Switzerland, creating the giant ABB. In one stroke ASEA changed the structure across a range of mature electrical industries. Of course, I had no part in this, but as it turned out the normative implications of my thesis, where ASEA could take on the role of an active change agent, was perfectly in line with the new strategy. Now, many years later, we know that this merger which was suggested and implemented by Mr Barnevik turned out to be a huge success. And the merger was in perfect line with the Five-force model, and the strategic implications of being active in mature and partly fragmented industries; restructure the industry or get out.
Compared to the size of this country, Sweden has been the home base for a large number of MNCs, many of them established more than a century ago, and still today active in traditional industries such as steel, heavy machinery, appliances and so on. One of them, Electrolux (founded in 1919 through a merger between Lux, established 1901, and Elektromekaniska, established 1910), had become known for a more active strategy of restructuring a range of businesses within the major home appliance industry (“hot products”: stoves and ovens, “cold products”: refrigerators and freezers, and “wet products”: washing machines and dishwashers). To build a contrast to ASEA, a company where my comments about new players and strategies in the low voltage market had often been met with suspicion, I decided to contact Electrolux. My idea was to do a second study of globalizing competition and market change, and including a Swedish “change agent” in the story. Through my contacts with Stephen Soderberg in Boston, a fund manager at Wellington Management, I could access home appliance industry reports, and had put together a study on competition and structural changes in the U.S. major home appliance industry. I enclosed the report in the letter to the CEO, Mr Leif Johansson. A few days later he called me up and asked whether I wanted to come over for lunch at Electrolux headquarters at Lilla Essingen in Stockholm. I was a little surprised of the quick response, and if I remember correctly, I asked Jan-Erik again to come by as I felt a bit junior. Electrolux had acquired a range of home appliance manufacturers across Europe, and they were now ready to re-enter the U.S. market, a market they had withdrawn from in the early 1960s in a move to rescue the group. Leif was preparing an acquisition of one of the U.S. “big three” and my industry report turned out to be of great interest. In those days the M&A market was quite underdeveloped and Electrolux was not big on buying expensive consulting advice from the outside.

Around this time I was collaborating with an Assistant Professor at Wharton, Dr Bruce Kogut. We had met at HBS in 1981 when Bruce was a PhD student at MIT. Bruce was extremely smart and well read, and it turned out that his fiancé was Swedish. After an IB seminar where I had presented my ideas on researching strategies and competition in the Automobile industry, Bruce recommended me to read “Markets and Hierarchies” by Oliver Williamson, and I was introduced to transaction cost theory. In hindsight this advice is a bit amusing as Bruce has spent the larger part of his research career fighting the transaction cost view of the world. And he did this together with one of my colleagues back at IIB, Udo Zander. Based on Udo’s empirical PhD work they developed the first fragments of the “knowledge-based view of the firm”, which has become highly influential, and today Bruce and Udo are two of the most cited scholars in our field.

Some moments in life you never forget. One such moment was in Philadelphia together with my wife, Bruce and his Swedish wife Monica. It was the 28th of February 1986, and we were watching the 11 o’clock news in Kogut’s home, and we learned that the Swedish Prime Minister Olof Palme had been fatally shot only a few hours earlier in downtown Stockholm. Not that I was a great fan of him but my mental model of a “safe and non-violent” Sweden collapsed. I had a couple of other such moments while living in the U.S. The first time was when I was doing homework on Maryland Avenue in Washington D.C. It was the 8th of December, 1980, and the radio voice came in and reported that John Lennon just had been fatally shot. Not long after, on 30th of March, 1981, news spread in D.C. that President Ronald Reagan had been shot and was hastily driven to the hospital at George Washington University where I studied. John Hinckley had shot six shots from close range but the President, hit in the lung, luckily made it. In
Sweden President Reagan was often derided, but this cowboy actually managed to play the lead role in putting the crazy arms race of the cold war to a halt, not a small feat. A more defining moment was when my father called me in my home on Mass Avenue in Cambridge, on the morning of 11th September, 2001. He asked me to quickly turn on the TV set; the twin towers in New York were burning and everything was a chaos. Soon, President Bush declared “war on terror”, and “Stars and Stripes” were hanging from windows, rooftops, cars and trucks. Priests gave open air sermons and free food was handed out on the HBS campus. Suddenly, mental models of Americans were collapsing, and for the first time since the Civil War they were fighting a war on home territory.

But let us go back to the late 1980s again. In 1986 Electrolux went ahead and acquired White Consolidated Industries (WCI), the number three player in the U.S. market. Bruce had asked me to join a project on “Global strategies in the home appliance industry”, in cooperation with GE – the number one player in the U.S. – but when it was known that a Swedish company was taking over one of their largest rivals, I was suddenly not welcome to visit GE headquarters. History often repeats itself, and in 2014 Electrolux announced the acquisition of GE Home Appliances.

About a year later, on October 16, 1987, I defended my thesis at SSE, based on the two industry studies. This was a very nervous day for me, and I vividly remember the opponent, Professor Neil Hood from Strathclyde University, Glasgow, asking the first question: “If we would put your thesis deep into the ground in a box today, what would remain if it was rediscovered some hundred years later”. I replied “the cover” as this was made of sturdy cardboard paper. But in all honesty what I learned from my thesis work has formed a basis for both my teaching and research, and three recipes are directly emanating from the thesis: the Radio (Recipe II), Archipelago (Recipe III) and Stairway (Recipe IV) models. My understanding of MNCs and their strategies had also shifted somewhat from my first meeting with Jan-Erik; we could not expect that the rings on the water always grow in a perfect circular fashion. Instead, there are scerries here and there (particularly in the Swedish archipelagos) which the water rings will pass around. What I learned was that Electrolux simply had much larger market shares in distant markets in Latin America than in Germany. This was similarly true for Volvo cars in Hong Kong, or Volvo trucks in Brazil, where they were much bigger than in for example the German market. Naturally, this was explained by the industry structure in Germany (and not cultural distance), exhibiting very high entry barriers, strong incumbent firms and risk of retaliation in different markets, including the Swedish one. This result had implications for the simple “rings on water” model from Uppsala. Through my thesis work I also found out that foreign entrants find different routes into markets; some are even helped by incumbents, what I then referred to as “gate openers” which is a central ingredient in the Radio model.

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See article presenting my PhD work, back page of Dagens Industri 15 October, 1987.
To be honest, now almost three decades later, the ideas brought forward in my thesis have not made any imprint on IB research, but I do not give up and therefore I still wait for the discovery of the importance of scerries and gate openers. Hopefully, some impact has materialized as I have used the results from the research in my practice as a teacher.

**The Next Step – The Competitive Advantage of Nations Project**

During his sabbatical in 1986, Professor Porter travelled the world and compiled a group of scholars from ten nations. He had contacted us at IIB in Stockholm and asked if we were interested in joining the team, and I and my colleague Ivo Zander decided to join. Mike and his assistant Michael Enright visited Sweden a couple of times to meet with Swedish business leaders and visit various companies. In August of 1987, just when my thesis had been sent to print, we were invited to a workshop at HBS to meet with the other national teams. Mike presented an early version of his new conceptual model – the “Diamond”. All in all we were 24 researchers discussing issues of competitiveness, and I had a chance to meet with scholars such as Hirotaka Takeuchi from Japan, Dong-Sung Cho from Korea, Kim Möller from Denmark, and Claas van der Linde from Germany. Mike had named the workshop “Competitiveness of Nations” but the book in the end was titled “The Competitive Advantage of Nations”. A title which is somewhat of a paradox since Mike clearly stated that “nations don’t compete”, and the term “competitive advantage” was usually connected to the level of firms. So the title hinted a cross-over between firms and nations. And this, I would argue, is the great strength of his work, to link firms and their competitive advantage/competitiveness to the surrounding national/regional and cluster contexts. To put it simply, the quality of a firms’ strategies, resources and capabilities are to a high degree a “product” of its proximate environment.
After finishing my PhD I was ready for something new and challenging. After conversations with Mike I was invited to the Monitor office in London for interviews. Monitor, a consulting practice, which went under in 2012, had been founded by Michael Porter, Mark Fuller and his brother Jo Fuller in 1983. I was never offered a position, but through my earlier contacts from the competitiveness project with Professor Takeuchi, referred to as “Hiro”, I was able to take up a Post Doc at Hitotsubashi University just outside Tokyo during one year (1988/1989). And what did I study? Naturally, competition in the form of fierce domestic rivalry characterizing leading Japanese industries, such as copying machines (PPC), automobiles and microwave ovens. During my year in Japan I learned a lot about competition and strategy, and not the least to see through fuzzy theories of culture that often blurs traditional industry analysis. It was not difficult to see how uncompetitive Japanese industries in world markets (e.g. processed food, pulp and paper, pharmaceuticals and many service industries) were retarded by monopolistic practices, while competitive industries was characterized by fierce prestigious rivalry. Hiro often referred to the slogan used by managers at Sony at the time: “BMW”, not referring to the car but to “Beat Matsushita Whatever” (Matsushita was the leading consumer electronics firm, today using the name Panasonic). I also learned about the subtle differences among Japanese firms based in the Kansai clusters around Osaka (such as Panasonic) and the Kanto clusters around Tokyo, the home base for Sony. This is also the first time I came across what was later termed “coopetition”. While Canon, Ricoh, Fuji-Xerox, Sharp and Sanyo compete in many markets, both at home and around the world, they also cooperated intensively on different technologies, sharing of components etc.

Michael Porter finally published the “big black book” in 1990, and he urged all the national teams to publish books on their national studies. Our Swedish team had developed a range of industry and cluster studies. Through these studies I met with Maria Bengtsson from Umeå. We later carried out a couple of studies, which became part of her PhD thesis. We were interested in competition, and introduced the notion of a “climate of competition”. The idea of a competitive climate was to complement the traditional notion of the structure of competition as described in IO theory. Competition across industries, even with similar structures (e.g. number and size distribution) apparently plays out very differently; some industries are more “hot” and some more “cold”, and this can last for long time periods, and hence we referred to this as the competition climate. Based on survey data we could show that both structure and climate of competition had an impact on innovation performance of firms.

As the Swedish book manuscript was taking shape we decided to name it “Advantage Sweden”, alluring to the concept of Competitive Advantage, and in those days Sweden was in the forefront of tennis and we often heard “Advantage Sweden” when watching David Cup matches on TV. At some point I had been discussing the book plans with Erik Hörnell from Uppsala who was then working at the Royal Swedish Academy of

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11 During the 1990s books were published on New Zealand, Sweden, Denmark, Switzerland, Canada and Japan.
Engineering Sciences (IVA), and he proposed that we should put together a group of business leaders to initiate a debate in Sweden on the topics of competitiveness, “diamonds” and clusters. A group was formed under the auspices of IVA, led by the Chairman of one of the largest paper manufacturers in Sweden. Everything was fine until he understood that the book was not only about competitiveness, but also about competition. One of our main results actually stirred up a debate, and referring to our project one could read headlines such as: “Tough Competition at Home is a Strength”, “Mergers Hurt Competition”, “Sweden Must be Demonopolized”, and “Swedes Change Their View on Competition”\(^\text{14}\). The point we made was that even in a world of globalizing markets, home rivalry was a critical driver for innovation and upgrading of competitiveness of firms (compare my learning journey in Japan I just described).

The timing turned out to be very sensitive as the Chairman of SCA, Bo Rydin, was preparing a bid for one of the other “big three” paper manufacturers in Sweden. The whole thing turned into a David and Goliath show where comments from the Chairman on television news were coupled with the young researcher’s view on the need for local rivalry: “Large Swedish companies should grow through M&A outside of Sweden, in order to keep the healthy rivalry and a good innovation climate back home”. To make my voice heard I began to use a timely concept; the Berlin Wall had just fallen and the East German Trabant car had become a symbol of industries that had been hidden behind the wall (see Trabant Recipe). The business journal Veckans Affärer wrote: “Sweden has been infected by the Trabant illness”\(^\text{15}\). Examples of the Trabant illness that we pointed to in Sweden included: SCAs attempt to acquire MoDo, EKA Nobels acquisition of Stora Kemi, Orrefors of Kosta Boda, Duni of Finess, Beckers of Alcro, and Pharmacia’s acquisition of LKB. The examples were numerous. Michael Porter had taught us that national champions can make a lot of money, but, in the end they will fail in global competition. This was contrary to the belief of most business leaders in Sweden, as they would argue that Sweden was a too small base for competition. But as many markets had globalized we did not think that was a valid argument. To understand why let us use a sports metaphor for a moment.

One of my Master’s students last fall, Abhinav from India, remarked to me “Bekoji, a tiny town in central Ethiopia, with a population of around 17,000, has produced 16 Olympic gold medalists in the last 20 years; that is more than what India (with one gold medal), with a population of almost 1.3 billion, has managed in the same time”. The elite sports “market” is global but there seems to be something important going on at the local level offering either natural advantages (such as high altitude as in the case of Bekoji) or man-made advantages such as an advanced research infrastructure (this is basically what all Recipes on clusters and competitiveness in Part II of the book are about).

I remember while participating in a meeting with top executives from Electrolux and WCI (just after the merger in 1986) in Husqvarna, CEO Leif Johansson used a sport metaphor in his introductory speech: “Before you go out and compete in international markets, make sure you win every match at home”. I agree that any sportsman or woman, or firm going international for that matter, must have a strong track record with


\(^{15}\) Veckans Affärer No. 5, 30 January 1991.
healthy profits and competitive products. But, on the other hand, if a sportsman or woman knows that they will always win at home, the incentives will shift and you can easily become lazy. Instead, I firmly believe that when Swedes or Ethiopians or athletes from any other nation – large and small – for that matter, perform well in global sports such as the Olympics, there is often a number of highly qualified athletes, or teams of athletes, back home. It is not a monopoly at home, just like runners from Bekoji have to constantly fight for bragging rights in their backyard. And furthermore, they will of course fight hard to win gold medals around the world, but in the sports stadium or the track back home there will be a lot of cooperation and peer-to-peer coaching going on, to the benefit of all – so called co-opetition.\textsuperscript{16} To capture the quality of home base competition – in global markets – we began to use the notion of a “climate of competition”\textsuperscript{17}.

After World War II Sweden had become a welfare state and no one really paid any attention to the critical role of competition in society. Most service sectors were monopolized, and run by public organizations, and industry, of course subject to international competition, had often monopolized their home base; “Sweden is too small for more than one large firm in each industry”. But we replied that rivalry between Volvo and Scania trucks in Sweden, or between pharmaceutical firms in a small country like Switzerland, was important for sustained innovation and competitiveness.

Contacts with the book publisher Norstedts had already been taken by IVA, and in spite of the business group of advisors now leaving the project, the young book editor Torbjörn Santérus believed in the project and decided to go ahead and publish “Advantage Sweden”\textsuperscript{18}. In a country where competition had been almost forgotten our ideas of “domestic rivalry” at least led to some debate. A few business leaders raised their voices in our favor and I remember both Lars Bern (CEO of Incentive) and Per-Olof Eriksson (CEO of Sandvik) defending the idea. Per-Olof even argued that Sandvik had purposely kept Seco Tools and Sandvik Coromant separate (two Swedish world leading businesses in hard materials, both controlled by Sandvik), in order to keep the prestigious rivalry for bragging rights on who was first with innovative products, who managed to increase market shares in world markets etc. A new liberal government came into power in late 1991, the debate turned, and a much tougher anti-trust legislation was introduced in 1993\textsuperscript{19}.

Over a decade, my research interest had now shifted from Industry Structure and Strategy (see Railway, Radio, Archipelago and Stairway models) to Competition, Competitiveness and Clusters (see Trabant, Cluster, Funnel and Hollywood models). And for the first time in my life I wrote on policy. The final chapter of Advantage Sweden argued the case of shifting the debate from macro to micro, focusing on market access (EU accession, infrastructure linking Sweden to world markets etc.) and competition.


Still we, and the world around us, had not come across the idea of cluster initiatives and active cluster policy (Recipe VII).

In connection with a visit to Stockholm in 1999, Mike asked after dinner if I would be interested in coming to HBS during my upcoming sabbatical. The sabbatical was postponed due to interviews at home, but in December of 2000 my family moved over to Cambridge, and the yellow house on “Little Mass”. Together with my colleagues Christian Ketels and Niels Ketelhöhn, I worked with Mike to develop a whole new course, based on three pillars covering Porter’s research over three decades: Strategy, Microeconomic drivers of competitiveness (Diamond model and clusters) and Policy. After some discussions the name was decided: Microeconomics of Competitiveness (MOC). The course was launched in 2002 at HBS, with half MBA and half MPA students (from the Kennedy School). Two partner schools – INCAE in Costa Rica and SSE Riga in Latvia, also participated the first year. Over the years some 100 universities have now participated in MOC and many thousand students have been trained all around the world.

Before we turn to a short overview of Mike’s research, and a comparison of his two most influential models, the Five-Force Model and the Diamond Model, I would like to come back to the field of International Business (IB) – that has inspired the two last recipes in the book: the Multi Home-Based Model (Recipe X) and the Hourglass Model (Recipe XI).

My home at SSE during the 1980s and 1990s was the Institute of International Business (IIB). Jan-Erik Vahlne and Gunnar Hedlund were the two major driving forces behind the institute. Jan-Erik leaned more towards strategy, whereas Gunnar was our organization and management guru. Gunnar tragically passed away in 1996, but his legacy on “the Heterarchy” still lives20. During 1994 – 2002 (excluding my sabbatical at HBS) I was heading the institute, a period that I really enjoyed and learned much from. I tried to give as much freedom as possible to the researchers, while controlling that the budget was met every year. I did not see myself as a “conductor” or “team leader”, but rather as a person “holding up the tent”, i.e. bringing in the dough and keeping the Board of Directors happy, so that our PhD students and faculty could develop their research interests inside the tent. All in all 29 PhD theses were produced within IIB (the Institute was closed down by SSE in 2008), and many of the young scholars went on to academic careers, including Johan Roos, Udo Zander, Peter Hagström, Ivo Zander, Lena Zander (a lot of Zanders here!), Jerker Denrell, Patrick Regnér, Stefan Jonsson, Lin Lerpold, Robin Teigland, Laurence Romani, Ciara Sutton, Anna Krohwinkel-Karlsson, Jesper Edman, Göran Lindqvist and Sergiy Protsiv.

During the IIB years I came to work a lot with my former student Ivo Zander. At an early stage we reacted to the general notion within IB that everything was becoming global, and that MNCs constitute firms with endless global capabilities, shifting resources and capabilities around, tapping markets from afar, handling R&D and innovation at a global scale, and recombining everything into globally based competitive advantages (sometimes referred to as “advantages of multinationality”). These models of the MNC emanated from IB scholars such as Chris Bartlett, Sumantra Ghoshal, Yves Doz and not 20 See Hedlund, G. (1986) The hypermodern MNC—A heterarchy? Human Resource Management Vol 25 No 1: 9-35.
the least Gunnar sitting next door. We started to model the MNC as an entity that on the one hand handles global markets and value chains (the exploitation or commercialization side of the business), but on the other hand saw it as an entity that handles strategy and innovation (exploration side of the business) at a more regional/local scale. The more advanced MNCs we studied typically developed several “Home Bases”, each one for a particular line of technology or business. The home bases were spread out over the world as almost self-sustaining nodes, but we saw relatively limited linkages between them or to headquarters. This was counter-intuitive to most IB scholars; MNCs have become global so why should not strategy and R&D become global. Gunnar worked with his PhD student Jonas to prove the point. Studies were made at two of the most advanced global firms based in Sweden; ABB and Electrolux (remember the beginning of my journey!). Interestingly enough, there was an element of globality in R&D and product development, but not in the way of complex linkages between subsidiaries, or what would be referred to as “global innovation”. Instead it was multi-local; sometimes a project would move from one location to another during the life-time of the project, or parts of a project handled at two different sites, would meet at a third separate site, what J. D. Thomson would call “sequential” or “pooled” interdependencies. The globally linked model of continuous interaction, in Thomson’s world, “reciprocal”, did just not show up. Some of the key works by IB scholars around the world on “global innovation”, still highly influential, were based on a few case studies such as the development of diapers within P&G’s subsidiary in Japan21. To be fair we did not have much of empirical evidence either, but at least Ivo in his PhD could show, through extensive patent data, that there was not much overlap across subsidiaries22. This result did not please the faculty opponent at the thesis defense, the “father of IB”, Professor John Dunning, my former teacher in the IB program at SSE in the fall of 1978.

In order to combine aspects of what is driven at a global scale and what is driven at the regional/local scale, and how these processes interact, we developed a couple of conceptual models. The Multi Home-Based model I developed together with Ivo during the 1990s. We edited an issue of a journal to launch the theme of firms being global in a multi-local context in 1995, and then published a number of articles on the topic23. A more recent version, presenting the Multi Home-Based model as an alternative to the transnational model, argued from the point of a dilemma faced by MNC headquarters24.

Another simple recipe emerged as I was working with Henrik Bresman, one in a long row of bright PhD students at IIB (he later finished his PhD at MIT in Cambridge, Mass.). Coming to think of it, it must have been during my years as Director for IIB during the 1990s that I learned the lesson to always hire smarter people than yourself, which so far has turned out to be a quite easy task, and a real recipe for success for a research center.

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In my later years, when IIB was about to be closed down, and I started a new research group: The Center for Strategy and Competitiveness (CSC), I worked hard to attract brighter scholars than myself, and I really succeeded with people like Robin Teigland, Christian Ketels, Göran Lindqvist, Sergiy Protsiv and Sergey Morgulis-Yakushev.

But back to the story; Henrik and I were carrying out a study of international R&D projects within the globally leading materials company Sandvik. And we saw interesting patterns. Innovation projects seemed to be global in the early sensing phase, then turning into a localized phase (core development work at corporate R&D headquarters), and then turning back to a global phase as the new products were tested and brought to market. In geographical terms, the three innovation projects we studied looked as if they had a “waistline” in the middle of the timeline; we labeled this the “Hourglass Model” (Recipe XI)\(^{25}\). A couple of years later I did a similar study, based on three smaller international firms, with Maria Lindqvist and Ivo Zander, and we found similar patterns\(^ {26}\).

**Michael Porter – Four Decades of Research**

Michael Porter received his PhD over 40 years ago in Business Economics at Harvard. Over the following four decades Mike has offered us seminal conceptual models on several “islands of knowledge”, typically beginning with the letter “C”:

- Competition
- Competitive Strategy
- Competitive Advantage
- Competitiveness
- Clusters
- Creating Shared Value

Through his many influential articles and books he has travelled up and down the ladder, between the levels of: Firms (strategic business units), Industries, Clusters, Regions, Nations and the Global marketplace. And maybe most importantly, he has managed to link these different levels of analysis in novel ways, opening up new streams of research, and fundamentally influencing business and policy practices. If I would be asked to summarize this amazing feat I think it all boils down to one overruling question: why do certain firms based in certain contexts prosper (profitability-wise or innovation-wise) where others fail? In his first works it was mostly focused on prosperity in terms of firm profits, while in his later works it is more about innovation and upgrading of competitive advantages.\(^ {27}\) In addition he has also asked the same question of success versus failure for larger systems such as cities, regions and nations.


\(^ {27}\) To save space this section does not describe Professor Porter’s important works in the fields of redefining health care systems, distressed inner cities, corporate philanthropy or creating shared value.
Let us take a quick look at Mike’s knowledge journey. Already during his doctoral work during the 1970s he began to build a bridge across two academic islands; the islands of Business Policy/Strategy and Industrial Organization (IO). It was literally a bridge across Charles River, from the Economics faculty on the Cambridge side, to the Business school faculty on the Boston side. This first bridge is symbolized by the Five-Force Model. The second important bridge, built during the 1980s, was between the islands of Strategy and Economic Geography, symbolized by the Diamond Model. We will soon return to these two central models, and I will argue that there are both complimentary and contradictory aspects of the two models.

In the work with the Five-Force Model Mike combined the two levels of analysis; the firm and the industry (and adding four other competitive forces surrounding individual industries). Through his thesis work Mike, together with colleagues Richard Caves and Michael Spence, added to traditional IO by bringing elements of vertical power structures (as opposed to the IO focus on seller structure), service industries (as opposed to traditional IO focus on manufacturing) and intra-industry differences in firm strategies (as opposed to IO models typically based on homogenous firms inside an industry), so called strategic groups which were delimited by mobility barriers.

Through his PhD work, Mike managed to extend the scope of IO to include complicating factors both inside the industry and outside of the industry. As often has been the case with Mike’s research, he brilliantly connects different levels of analysis and adds complicating factors, which goes against the dominant research logic of simplification and often unrealistic assumptions to facilitate clean models. Thus, he has helped us to build holistic understandings of research problems. For example, by linking the two levels of analysis of the industry and the firm, Mike pointed to how firm strategy both are shaped by industry structure, and that firms also shape their industries through their strategies.

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For the interested reader I would like to point to two important publications dealing with the evolution of Michael Porter’s research:


Ibid page 5.
In 1983 Mike was asked to join President Ronald Reagan’s Commission on Industrial Competitiveness. Particularly after the Japanese onslaught across a large range of industries, a big debate had emerged in the U.S. regarding the nation’s competitiveness. The Diamond model was launched, now linking firms, and their potential to innovate and upgrade competitive advantage, to national/regional circumstances.\(^{31}\)

As the Diamond model evolved the focus was on a system of four interrelated drivers: factor conditions, demand conditions, strategy and rivalry, and supplying and related industries. The geographical aspect of the fourth box was mentioned, but was not put center stage. The concept of clusters of proximate industries and supporting institutions only later became a hallmark of Mike’s research.

During the 1990s Mike had been building a bridge between the two levels of analysis: firms and nations. However, a critical intervening variable between nations and firms took on more and more interest, both by scholar and practitioners, namely clusters. Dynamic industry clusters – or “the Silicon Valley effect” offered particularly favorable conditions for upgrading of firms’ competitiveness, entrepreneurship and new firm formation and innovation.

Looking at impact in the business press, we did a study at HBS for the 10-year period 2002 – 2011. Clearly his main impact is connected to the field of Strategy and Competition. While the words “Competition + Porter” were found in some 2,000 articles, there were only 800 articles mentioning “Competitiveness + Porter”. The diamond and cluster words are only found in very few articles (using the source Factiva which covers all leading business press). When it comes to scholarly citations (broadly defined) Mike has reached impressive levels of well over 200,000 citations on Google Scholar – and no one in the world except for Herbert Simon is in this league.
I would argue that Mike’s scholarly contribution lies in two boxes of the Diamond: Strategy and rivalry, and Clusters. His ideas on clusters involved related and supporting industries that share business and technology links (not just NAICS/NACE industries at predefined levels), and in spite of rapid globalization he pushed for the idea of the role of geographical proximity. This had been long forgotten after Marshal’s seminal work in the late 19th century. And he also pointed to the importance of rivalry in clusters, which had not been central to scholars in Economics dealing with agglomerations and clusters.

Figure 7  Porter’s Research Agenda 2000s - 2010s

While “Porter I” (the blue part in Figures) had focused on strategy and medium term profit potential following from lack of competition, “Porter II” (grey part in Figures) was now focusing on long-term competitiveness and firm success built on the innovation capacity of firms driven by intense rivalry. Hence, at first the two models seem incompatible – and they are to some extent – partly because they answer very different questions. Managers typically favor the first model, whereas policymakers favor the second. But managers should beware – sustainable profits (through monopolizing industries – a standard recipe in the field of strategy consulting) can kill your innovative capabilities, and over time your products will look more and more like a Trabant, which at some point will lead to ruin. We see this over and over again that world-leading and highly profitable companies do fail. GM was the world’s most profitable company for about two decades during its heydays! Then markets share in the U.S. dropped from over 50% to under 20% and the company had to be bailed out.
I have often discussed the complementarities and contradictions in the two models with my students. In 2013 I had lengthy discussions with my Master students in IB at SSE (MIB -13), summarized in the Figure below. Another big discussion in this class revolved around static and dynamic interpretations of the Diamond model, and what in the end drives firms to be competitive. I arranged the three concepts of competitiveness (static advantages for firms), innovativeness (dynamic advantages for firms) and attractiveness (at national/regional levels) into a “CIA” model (see discussion in Part II).
Figure 8  Comparison of the Diamond and Five-Force Models

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<tr>
<th>Complementarities</th>
<th>Five-Forces</th>
<th>Diamond</th>
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<tr>
<td>Time frame</td>
<td>Medium (business cycle)</td>
<td>Long term (10 years or more)</td>
</tr>
<tr>
<td>Level of analysis</td>
<td>Industry</td>
<td>Nation and cluster</td>
</tr>
<tr>
<td>Primary use</td>
<td>Develop business policy/strategy Industry attractiveness</td>
<td>Develop public policy National attractiveness</td>
</tr>
<tr>
<td>Implication for firm</td>
<td>Profit potential</td>
<td>Competitiveness and innovativeness</td>
</tr>
<tr>
<td>Geographical scope</td>
<td>Industry boundaries range from local to global</td>
<td>Local/regional focus</td>
</tr>
<tr>
<td>Location of firms</td>
<td>Plays no role</td>
<td>Proximity to other cluster actors critical</td>
</tr>
<tr>
<td>Main drivers</td>
<td>Static competition</td>
<td>Dynamic competition and collaboration</td>
</tr>
<tr>
<td>Type of model</td>
<td>Largely deterministic but room for voluntarism – change industry structure</td>
<td>Largely deterministic but room for voluntarism – change cluster dynamics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contradictions</th>
<th>Five-Forces</th>
<th>Diamond</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rivalry</td>
<td>Weak is advantageous</td>
<td>Strong is advantageous</td>
</tr>
<tr>
<td>Value chain actors</td>
<td>Weak buyers and suppliers are advantageous</td>
<td>Strong and sophisticated buyers and suppliers are advantageous</td>
</tr>
<tr>
<td>Value chain dynamics</td>
<td>Compete for largest share of the pie</td>
<td>Collaborate to enlarge the pie</td>
</tr>
</tbody>
</table>
The Greenbook Story

The concept of clusters had become more visible in the debate in Sweden during the 1990s. In the fall of 2000 I was asked by Hans Tson Söderström, head of the policy think tank SNS, to join the Economic Policy Council ("Ekonomiska rådet") and write a debate book about “the new economy and the new geography". The team consisted of Hans Tson Söderström (editor), Pontus Braunerhielm, Richard Friberg, Victor Norman and myself. We had many lively debates and the book was finalized on the Canary Islands. As it turned out we downplayed the role of the new economy (the dot com bubble was bursting!), and put focus on the new geography and the importance of clusters. I wrote the part on clusters and cluster life cycles with Richard Friberg, and we pointed to a life cycle curve that looked like an “inverted S" (Recipe VI). We used the examples of Fil (Hollywood) and Telecom in Sweden, and pointed to the important role of Jan Stenbeck in pushing a sleepy telecom Sweden into a renaissance, through adding entrepreneurship and new strategies to the industry in the 1980s and 1990s. I flew home to be part of the presentations of the book in Stockholm, and then in places like Örebro and Kristianstad.

My family had a great time in Boston, and particularly our children Frida and Christian came to see a new world (and experienced the catastrophe of 9-11 and visited ground zero in New York) and meet new friends. They did not speak English as we arrived but only after a few weeks in school they were well functioning. One vivid memory is when walking over to the Maria Baldwin School with my son, 7-year old Christian. As most kids he was very familiar with leading brands for cars, toys, cartoons etc but of course knew nothing about Harvard; and he turned to me and said “Dad, I understand you are working at a really good place”. I answered yes sure it is, what about it? And he answered back “Ye, I heard that you are working at The Harvard Disney School!” You can’t beat that.

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In 2002 my family was returning home from Cambridge to Stockholm. Soon after I had a call from one of my former teachers at SSE, Dr Lars Eklund, now working for the Swedish innovation agency, Vinnova. Lars said: “I am involved a network for cluster practitioners called TCI (The Competitiveness Institute) and we would like you to take stock of what is going on in terms of organizing clusters around the world”. What he referred to was the growing number of cluster initiatives set up with the sole purpose of enhancing dynamism in clusters, or what we later referred to as putting a turbo onto the engine – the “real” cluster – to get some more Silicon Valley power out of clusters (see Recipe VII). Also around that time I met a former student of mine, Göran Lindqvist (who also happens to be a son of Göran Lindqvist in Gothenburg that once put me an Anders on the track to Stockholm and SSE), at Lena’s birthday party at the Swedish embassy in Copenhagen. I proposed that he should quit his career and join my center at SSE, and work with me on collecting and analyzing data on cluster organizations. Soon after he accepted and an intensive web search for cluster organizations around the world began. With the help of Göran and his friend Martin, we identified 509 cluster initiatives, around the world, and an on-line survey was distributed. Christian Ketels also joined the project. Our results were presented in “The Cluster Initiative Greenbook” at the TCI conference in the fall of 2003 in Gothenburg. Michael Porter had written the Foreword, and he made a short stop at the Lindholmen conference center as a keynote speaker.

So far we had worked with clusters as agglomerations but had not really understood the critical role of the knowledge spillover phenomenon, and we knew nothing about “constructing clusters”. With the Greenbook we created a platform where we could meet with scholars and practitioners, and not the least staff working for the EU Commission (particularly within DG Enterprise and Industry), who turned out to be highly interested in the topic. And so far only case materials had been published on cluster organizations, so the Greenbook offered the only coherent global picture of what was going on in this field. Through the contacts with Nikos Pantalos and others in the Commission we took on leadership of building up the European Cluster Observatory (later renamed Cluster Observatory, see www.clusterobservatory.eu) which was launched in 2007.

A new global cluster initiative survey was sent out in 2005 and another one in 2012. Following from the Greenbook, a title people liked in the field, we published new data and new reports. At one TCI conference, Ifor Ffowcs Williams, a guru in the field, once asked what would be the color of the next book. As it turned out we later published a “Bluebook”, a “Redbook” and an “Orangebook”, all related to cluster policy, cluster organizations and cluster policy evaluation. And now we have a Cookbook!

34 Still today the report is used a lot and has received some 700 citations (Google Scholar) to date.
A decade after the first Greenbook, Christian, Göran and I decided to use the new survey data and publish a Greenbook 2.0. An agreement was made with Lotte Langkilde in Denmark that they would sponsor such a publication in connection with the TCI global meeting in Kolding in the fall of 2013. Most of the results in the original Greenbook would hold, but we had to rethink the idea of successful cluster organizations going from a mostly publicly financed model over to a predominantly privately financed model. Instead we realized that the activities of cluster organizations is a truly privat-public partnership that never finishes and that will keep its neutral bridge-building and networking role by drawing of both private and public sources of financing.

Another track that was opened up with the Greenbook work was the involvement in evaluation of cluster initiatives and cluster policy. Over that last few years I have worked with several regions, cluster umbrella organizations and cluster organizations. Most importantly I got in contact with Mats Williams, a former cluster manager for Paper Province (paper and bioenergy cluster in the region of Värmland in North-Mid Sweden) and Staffan Bjurulf working for the region. Mixing Mats vast experience from cluster construction, and Göran’s and my own research experience in the field, we managed to work out new models to better understand cluster organizations and to better evaluate if investments (private and public) give any “bang for the buck”\(^{35}\).

The Recipes

Looking back on my journey as a teacher and researcher, five words come to mind: **strategy, competition, multinationals, competitiveness and clusters**. And as described above, while teaching business students on these concepts I developed simple recipes for each of them. It is my sincere wish that the Recipes in Part II of the book will be of use as you try to grasp and diagnose particular phenomena in this broad analytical field. I am sorry to say that I have seen so many “top chefs”, i.e. chairmen, executives and other leaders, with limited analytical skills, and no models to make sense of or to communicate surrounding forces, in order to inform a sound strategy.

The 11 recipes can be followed word-for-word or you might want to improve them by adding new flavors, or mixing the ingredients in new ways. The recipes are structured as follows. We start with the Strategy models, with some cross-over to Industry and Competition. In recipe V – the Trabant model – we shift to issues of Competitiveness and Clusters. The Funnel (Recipe VIII) is really a summary of the different levels of analysis one can use when looking at issues of attractiveness, competitiveness and innovativeness. The last two recipes put focus on the strategy and organization of Multinational Corporations (my initial home turf), but also includes linkages to clusters. The Recipes are summarized in the Figure below.
Figure 10  Part II of the Book – 11 Recipes

<table>
<thead>
<tr>
<th>Recipe</th>
<th>Strategy</th>
<th>Competition</th>
<th>Competitiveness &amp; Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Railway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Radio</td>
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<tr>
<td>III</td>
<td>Archipelago</td>
<td></td>
<td></td>
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<tr>
<td>IV</td>
<td>Stairway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Trabant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VI</td>
<td>Cluster and Inverted S</td>
<td></td>
<td></td>
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<tr>
<td>VII</td>
<td>7 Gaps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIII</td>
<td>Funnel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IX</td>
<td>Hollywood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Multi Home-Based - MHC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XI</td>
<td>Hourglass</td>
<td></td>
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</tbody>
</table>

So now let’s turn to Part II of the book. It took me 30 plus years of research and teaching to come up with these simple recipes – hopefully your learning journey will be much faster – enjoy!
Örjan Sölvell
On Strategy
&
Competitiveness

Part II
Introduction – Recipes for Strategy & Competitiveness

Now it is time to turn to the 11 Recipes. In Table 10 in Part I we indicated the broad analytical areas and issues associated with each recipe. In line with my own knowledge journey we will start with recipes in the culinary area of Strategy, and thereafter turn to issues of Competition, Competitiveness and Clusters. But first let us ponder a little bit on the two core concepts of the book - Strategy & Competitiveness.

Strategy

What do we really mean by a firm having a strategy? To many it is about important decisions with long-term implications for the firm or organization. Yet others would say it is about where you want to go (goals) and how you will get there (means); or it is about decisions regarding the use of scarce resources and capabilities inside an organization. Another view is that it is about planning ahead, or about the planning process as such involving different stakeholders inside the organization in the choice of path. Some strategists argue that it is about positioning in a market, and, yet others would say that it is about building a competitive advantage. Michael Porter, one of the leading voices in the field, summarizes strategy into five components:

1. A distinctive **value proposition** – needs you will serve, customers, prices etc
2. **Tailor** the firm’s activities to that value proposition – this will impact a company’s ability to charge premium prices or to operate at lower cost.
3. Be prepared to make **trade-offs** and decide what not to do
4. Strategy is like a complex system where all parts should **fit** together seamlessly, creating something like a chain that is as strong as its strongest link
5. **Continuity** working on the first four items.

Another strategy guru, Richard Rumelt at UCLA, talks about “good” and “bad” strategy, where good strategy is related to leaders that “identifies one or two critical issues in the situation and then focuses and concentrates action and resources on them”. To him strategy is about overcoming challenges, and about how the organization can move forward through coordinated policies and actions.

Another way of looking at strategy is to see it as rhetoric in order to build legitimacy; a way for a corporate boards or management teams to create an illusion of having a clear and steady course; “we have a strategy!” When needed one can refer to the strategy to justify a decision, and when you want to go somewhere not in line with the strategy, you change the rhetoric. Either you “forget” the strategy, by not mentioning it, you reinterpret it, or you talk about strategic flexibility: “plans must be constantly updated in

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lieu of changing times!” The rhetoric can be important when communicating decisions both internally and externally, but if the rhetoric is not “for real” there is risk of harmful lack of direction.

So strategy, as Henry Mintzberg would put it, can be a plan but maybe more often “a pattern in a stream of actions”\(^40\). Over the years I have often come across strategies as emergent and a type of rhetoric more than a clearly thought out plan. One must have a strategy – a long-term plan and vision; stock markets and analysts demand it, as do ranking, rating and accreditation institutions and many others. I remember once at a strategy conference in Paris in the mid-1980s, where the great strategy thinker Gary Hamel asked rhetorically: “What is a strategic investment?” His simple answer: it is the type of language used by top management when they know the firm is going to lose a lot of money, and it will take a long time before a negative accumulation of rents will hopefully turn into profit, if ever. I think Gary hit the head on the nail. So when you hear “we are making a strategic investment and will move into market X”, beware (see The Radio Model). I once wrote a teaching case about this: The strategic investments into the U.S. heavy truck market by Volvo, an expensive journey that began in the mid-1970s\(^41\).

There is of course no “right” or “wrong” concept of strategy, as in religious belief, just different viewpoints, and you can choose your own favorite. But do we need a strategy at all? Do we need to know where we are going? Do we need a long-term written and communicated plan? And do we have to make up our mind on what not to do - if there is a choice? The questions are manifold. I will not fight for one or the other side; there are enough books on the topic of strategy\(^42\), competitive strategy, reinventing strategy, blue ocean strategy and so on. However, I am convinced that what you NEED are some conceptual models to get a grip on a complex set of ingredients; you need to analyze your organization, your industry, and the broader economic, social and political environment within which you act, in order to inform your major decisions and actions. You simply need some recipes. And, irrespective of whether you have a clear and written strategy or not, you want to prosper with your organization; for firms it can be to make good profits or launch new innovative products, and for a business school it can be to attract eminent students and faculty. In order to succeed in whatever business you are active, public or private, I think you need to have some clue as to where you are heading and you need to grasp how you will be impacted by various complex forces in the surrounding environment – you are never on your own!

We will now turn to the collection of recipes. Please be reminded that they are not suited to help you manage your organization better, but I believe they can help you analyze your interactions with the external environment, including international, national and regional, industry and cluster conditions; in short they can help you to set a course and build your strategy. We will start with the Railway Model, which will assist you to conceptualize your strategy. But before going in to the individual recipes lets us also have a quick look at the latter part of the book title - Competitiveness.


Competitiveness

To understand the concept of competitiveness, let us listen to a few voices on the topic. We will turn to both famous politicians and scholars, in turn: David Cameron, Bill Clinton, Laura Tyson, Paul Krugman and Michael Porter.

Figure 1  Voices on Competitiveness

Let us start with David Cameron, Prime Minister in the UK when I began to write this book, and still at the time of finish. At the time of writing the first version of this chapter I was living in London with Christina and we could follow David's many excellent speeches on TV and in the papers. As a Swede brought up in a culture of community and group conformity, where you are not supposed to speak up according to the law of Jante, it was fascinating to watch the rhetoric skills of British politicians. In his speech at the 2013 Davos meeting Mr Cameron stated: “Europe's lack of competitiveness is its Achilles heel”. So what was lacking? The main points he covered included: 1) the sovereign debt crisis, 2) failure to live up to the Lisbon agenda (full employment, sustainable growth etc.), 3) the Euro crisis, and 4) trade and investment imbalances. He called on European leaders to embrace a pro business agenda or risk falling even further behind, in the race to be competitive with countries like China and India43.

Just to show the wide range of social and economic indicators that are used to measure levels of competitiveness, let’s turn to two leading institutions in this field. In a feature article in the Economist, the competitiveness of the U.S. economy was examined\(^{44}\), covering six areas:

- Innovation
- Energy
- Education
- Immigration
- Infrastructure
- The role of government

The World Economic Forum (WEF), which organizes the yearly top meeting in Davos, and known for its rankings of national competitiveness, has been using 12 main dimensions to measure competitiveness. These cover basic requirements (four top in the list below), efficiency enhancers (six middle) and innovation and sophistication factors (two bottom):

- Institutions
- Infrastructure
- Macroeconomic environment
- Health and primary education
- Higher education and training
- Goods market efficiency
- Labor market efficiency
- Financial market development
- Technological readiness
- Market size
- Business sophistication
- Innovation

\(^{44}\) The Economist March 16-22, 2013.
Again, these examples show how broad the concept of competitiveness is, bringing in both domestic and international aspects, as well as both macro- and microeconomic aspects.

But back to Cameron again. In fact the PM covered most of the macro- and microeconomic issues at hand, and both domestic and international issues (see Figure 2 below). Clearly different thought leaders will emphasize different parts of these four interrelated aspects of national economies when discussing competitiveness.

Some will put more emphasis on the “race”, particularly with other countries (bottom part of Figure). One example is Laura Tyson, an outspoken professor at Berkeley, and former Chair of President Clinton’s Council of Economic Advisors. Here is a quote: “Competitiveness is our ability to produce goods and services that meet the test of international competition”. This sounds compelling but one should be aware of two very different views on this matter. The economist would typically refer to a depreciation of the currency, or wage cuts to lower costs, as the solution to declining competitiveness, whereas the strategist would think of innovation and improved quality of goods and services, allowing firms to differentiate and outcompete rivals in international competition; not necessarily through lower costs but by charging higher prices.

Professors Krugman and Porter look more towards how regional and national economies perform in terms of turning input into productive output (top part of Figure). While some leaders emphasize the economic realities, yet others emphasize the political means to improve competitiveness.
Yet, another difference in the line or arguments regards the unit of analysis. Clearly firms compete in the global marketplace, and some firms are said to be more competitive than others. But the concept of firm competitiveness is quite different from competitiveness of nations. The Nobel Laureate Paul Krugman brought this up in his famous article “Competitiveness a Dangerous Obsession”. As he put it: “firms compete but nations don’t”. In the article he argued that the comment once made from President Clinton that “Each nation is like a big corporation competing in the global marketplace” is both false and dangerously misleading.

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If Coca-Cola wins a global contract with McDonald’s world-wide, it means that Pepsi does not get the business; one woman’s win is another woman’s loss in a zero-sum fashion. But if one nation is doing a good job of improving its productivity, this has no, or possibly positive effects (as a trading partner) on other nations. One remark that I would like to make here is that even if this is true, nations also compete in terms of their attractiveness (rather than competitiveness), on resources, investments and human capital from around the world (see Recipe IX on the Hollywood Model). At least in the short term, one nation’s gain can become another nation’s loss; remember the vivid discussions of brain drain and brain gain. Regions and nations are directly involved in the competition for foreign direct investment (FDI) from multinational firms, a process that has a zero-sum component; just ask investment FDI promotion agencies trying to bring investments into their regions.

Even if firms and nations are totally different economic agents in the world economy, there are important linkages between the two. The one scholar that I consider has done the best job in linking the two is Michael Porter. In his lectures he would typically pose the question: “Why is it that firms based in particular locations succeed in global competition where firms in other locations fail”. Regions and nations offer framework conditions within which firms develop their strategies. Thus, firms are dependent upon the quality of human capital, the science base, sophistication of buyers etc. Firms with their home base in dynamic microeconomic and macroeconomic environments tend to outcompete firms from less dynamic bases, read clusters, as they meet in the global marketplace. This is obvious when comparing firms based in countries with different levels of economic wealth, but you can also see large differences in firm performance.
based in different regions within a particular nation. Firms based in different Swedish regions specialize in widely different industries, and they develop widely different strategies.

The concept of competitiveness, as was discussed above, has become somewhat diluted. It is used in many contexts and different meanings. “The Competitiveness of ...” is often in combination with nations, regions, sectors, industries, firms and so on, and typically implies that the unit referred to has a stronger or weaker economic performance. Here is a typical quote from the old days of pegged currencies “Sweden yesterday devalued its currency and the national competitiveness went up by 16%”. If we stay with the traditional definition used by many Economists, competitiveness is decided by the cost structure of the economy/sector in a comparison with competing economies, and thus the exchange rate plays such an important role. Lower costs of capital, labor etc relative to competing nations lead to improved competitiveness. This is a static comparison across locations. And true enough, firms in particular nation/regions gain in competitiveness due to favored access to factors of production and lower costs, leading to static advantages. But at the same time as firms gain from these static advantages the pressure to upgrade and innovate weakens, and the dynamic long-term advantages will not materialize. In order to get a grip on these two phenomena I propose to use three concepts, all highly interlinked.

First, nations and regions develop different levels of Attractiveness, while firms develop different levels of static advantages – Competitiveness – and different levels of dynamic advantages – Innovativeness. If you want to remember the tree dimensions think of “CIA”.

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We have now discussed different viewpoints on the issues around “competitiveness”. I think it is fair to say that this is like the elephant described from different angles, where politicians are all over the place, Paul Krugman emphasizing the domestic macroeconomic aspects (infrastructure, human capital, productivity), Laura Tyson the international macroeconomic aspects (relative wages, trade balance, exchange rates), and Michael Porter the domestic microeconomic aspects (competition, firm strategies, innovation, productivity). A way to structure your competitiveness analysis is to use the following four dimensions:

1. Domestic vs international issues
2. Macro vs microeconomic issues
3. Static vs Dynamic issues
4. Nation vs firm level issues (attractiveness vs competitiveness/innovativeness)

As my co-author Ivo Zander would say “traditionally you would ask the question why a nation is competitive – a better question is to ask why a nation is competitive in particular industries – or even better what characterizes those environments where innovation and upgrading of competitive advantages really takes place within nations?”
With this short background, let us now turn to the first recipe, The Railway Model. Good luck with your cooking and please take everything with a pinch of salt!
This first recipe is based on a conceptual model that we developed when teaching strategy during the early 1980s. I was trying to build some form of metaphor of what strategy is, and it ended up with trains and railways. The ideas go back to when I was teaching Strategy together with Professor Gunnar Hedlund, my boss at the time. We were running seminars with Swedish executives, and we taught a joint course on International Strategy at the Helsinki School of Economics in 1986. He convinced me that firms at certain points make decisions – let’s call them strategic decisions – that lock the firm into a certain trajectory, often for very long time periods. This is of course particularly true for firms making investments in large steps, for example within process industries. Should we invest in a new paper machine, or go some other route? If the board and management ultimately decide to invest a few billion SEK in a new machine, this will almost certainly lock in the company for decades. And, given this “strategic” decision, thousands of smaller – in military jargon “tactic” – decisions will follow.

As we discussed this lock-in effect with managers and students, I began to use the metaphor of trains and railways. Somehow, a firm encounters moments when they are “at a station” and other moments when they “are on the tracks”. And just like the passenger waiting on the train platform, they can easily choose to go in quite different directions: north or south? Invest in the paper machine or not? And, once you have boarded the train, it takes a whole lot to change your mind and direction. You need to get off at the next station, get a new ticket and wait for a train in the other direction. In line with the metaphor I also used to talk about managers as train drivers; most of the job is to speed up or slow down the train, i.e. tactical decisions far from being strategic. Thus, while driving between stations there is really no room for strategy, due to the lock-in effect of the tracks. Stations are few apart, and Henry Mintzberg pointed to this fact in his earlier writings; firms maybe change their strategy once in two or three decades. A classical strategy case illustrating this is the “Crown Cork and Seal” case46, where after more than three decades of following a clear strategy; the question is where to go next when the firm is changing leadership.

In Sweden we can follow some companies that emerged a long time ago across a large number of industries. Many of them are still active in the same markets, such as Bonnier in publishing (established in 1837), Telia in telecom services (1853), SEB in banking (1856), Sandvik in steel and materials (1862), Atlas Copco in pneumatic tools (1873), Ericsson in telecom infrastructure and services (1876), Alfa Laval in separators (1883), ABB in electricity generation and transmission equipment (ASEA in 1883), Skanska in construction (1887), LKAB in mining (1890), SKF in bearings (1907), Vattenfall in electricity generation (1909), Scania in trucks (1911), Astra Zeneca in pharmaceuticals (1913), Volvo in cars and trucks (1927), Electrolux in home appliances (1929), SCA in paper products (1929), SAAB in aircraft (1937), SAS in airline services (1946), H&M in clothing retail (1947) and so on. Stability and staying on the tracks seem to have be a pattern in the strategies of these companies.

Below I list some examples of companies that actually managed to change tracks:

<table>
<thead>
<tr>
<th>Company</th>
<th>From</th>
<th>To</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stora Enso</td>
<td>Steel</td>
<td>Forestry, paper</td>
<td>Late 19th century – end of 1970s</td>
</tr>
<tr>
<td>Toyota</td>
<td>Weaving Machines</td>
<td>Automotive</td>
<td>1950s</td>
</tr>
<tr>
<td>Intel</td>
<td>Memory chips</td>
<td>Microprocessors</td>
<td>1980s</td>
</tr>
<tr>
<td>IBM</td>
<td>Mainframes</td>
<td>IT services</td>
<td>1990s</td>
</tr>
<tr>
<td>Apple</td>
<td>Desktops</td>
<td>Mobile platforms</td>
<td>2000s</td>
</tr>
</tbody>
</table>

These radical changes of main tracks did not come easy. It took about 100 years for Stora Kopparbergs Bergslags AB (today Stora Enso) to shift from steel to paper. The Intel case has been used in strategy classes at HBS for many years.\(^{47}\) The new strategy (microprocessors) emanated from middle management and not from great strategies formulated by top management, a point also made by Patrick Regnér in his PhD at IIB.\(^ {48}\)

To prove the point that changing tracks is not an easy task I just want to remind you about Nokia (into smartphones) and Kodak (into digital photography), and here in Sweden we have the classical case of Facit failing to shift from electromechanical to electronic office machinery in the 1980s.

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If you can buy into this metaphor, there are some important questions you should ask yourself:

- What locks my firm or organization into a certain path – how would you describe the rails?
- Are we at a station now or are we just running on the tracks?
- Is there a station coming up soon?
- What do we do at the next station – should we make a change of course or keep steady?
- Are all in the management team really on the same train? If not, what do we do about it?

If we start to look at the rails, one can imagine these to be of both an internal and external nature. Internal lock-ins involve:

- Corporate culture "this is the way we do things here" or "we have always done it this way" – organizational anti-bodies are at work
- Routines and organizational processes (e.g. budgets) – our “DNA” – locking in managers
- Investments in machinery with limited alternative use (e.g. IT systems in a bank or large scale machinery in process industries)
- Being a division of a larger firm (or firm in a holding company or equity fund) where strategies are set one level above your organization
- Being a subsidiary of a multinational firm, where again strategic decisions are set at headquarters
- Psychological or mental barriers – lock-in thinking of managers who are supposed to be open minded and open for new directions
External lock-ins involve:

- Industry structure (number and size distribution of incumbents, economies of scale and scope, degree of product differentiation, strategic groups)
- Industry norms (“this is how we do business in this industry”) and industry history
- Industry standards (public or private standards, patent pool arrangements)
- Five Competitive Forces (in addition to industry rivalry also includes, buyers, suppliers, threat of entry and substitutes)
- Regulations and laws surrounding your industry
- Embeddedness in a cluster with surrounding related firms and organizations being on the same tracks

Michael Porter offers a range of tools to analyze constraints from the surrounding industry structure, and the broader set of the five competitive forces. Many industries are highly regulated, such as power plants, hedge funds or insurance businesses. This keeps firms in those industries on the tracks, or they will soon be out of business. Environmental and safety regulations also limit strategic choice in almost every industry. Even in unregulated industries, norms (a central field in institutional theory) and competitive forces can put a straightjacket onto boards and management teams. One should not overstate the straitjacket, as was the case with sociologist Max Weber. He once wrote about the “iron cage”, imprisoning individuals in large bureaucracies. Of course, over time, these lock-in effects will be weaker or stronger. Industries in turmoil, e.g. driven by technological shifts, re-regulation, or demand shifts, allow for almost any strategy and acts of “wild” entrepreneurship. These are periods when there is no “dominant design”, which is typical for emerging industries. If rails constrain firms, when can we expect a station, opening up a window of opportunity?

Another influential Harvard Professor, Clayton Christensen, has written extensively about why formerly well-run industry leaders have difficulties in adapting to new entrants and new emerging industries, based on various internal lock-in effects. The rhetoric question he asks is "why do great companies fail, not the bad companies?". The prolific American author Upton Sinclair once wrote: It is difficult to get a man to understand something, when his salary depends upon his not understanding it!" And this is often what happens in great companies – they can see and understand (if not they could certainly make good use of some of the recipes in this book) that there is a real competitive threat, for example from the iPhone, but budget systems, bonuses and the like prevents people from really grasping it. And even if leadership in a firm does understand new strategies emerging from the outside, there might be other factors barring a shift of strategy. One of my former doctoral students, Stefan Jonsson (now

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Professor at Uppsala University) wrote his PhD thesis about why many firms in the Swedish mutual fund market, due to legitimacy issues of newly entered products, chose not to imitate successful strategies\textsuperscript{53}.

Stations are often connected to major shifts in a firm or organization. Shifts can relate to changes in ownership, such as when a private equity firm acquires a family owned company, or a listed company is merged with another listed company. Change in ownership often means a change in organization and leadership, which opens up for a change of tracks. Managers change trains at stations, of free will, or are sometimes asked to leave the train when there are differences in opinion on which tracks to chose (a well packed backpack can help you to survive on the station while looking for a new train and direction!).

Some managers have a feeling that stations just pop up, just like when you ride a train in unknown territory. Others rarely experience any stations at all. It is of course critical that you are not always bogged down in your book or iPad; then you will miss every station, and possibility of possibly changing and improving the strategy. The face-down generation should beware!

Here is an easy way of to figure out whether members of your management team are on the same train. Before you start to discuss the strategy item on the agenda, ask everyone to fill out a paper where they state where their train is heading – north or south? And whether a station is approaching? Don’t be surprised to find out that people on your management team are on different trains. By bringing this onto the table, you are off to a good start in your strategy discussions, and you can bring your staff to think more strategically. My little piece of advice is that you should have a good idea of where you and your organization are heading and watch out for train stations. This will probably take a bit of slack in the organization; if people are too busy with their product plans and budget targets, they will never spot any stations. And much talk of “windows of opportunity” will be lost. And watch out – if you miss the station and stay on the tracks there might be competitors making a short stop and adjusting their strategy putting them on new tracks while you are on the old ones. When strategy guru Richard Rumelt in 1999 asked Steve Jobs about the future strategy of Apple, his answer was “to wait for the next big thing”\textsuperscript{54}. The iPod station turned up after two years and the iPhone station a few years later – so keep your eyes open!

I hope you have enjoyed our first recipe. Now, let us turn to the second one “The Radio Model”. This recipe will help you when crafting an entry strategy or analyzing a firm presenting an entry strategy; it might be into a new product market (horizontal integration), moving upstream or downstream (vertical integration), or when moving into a new geographical market (internationalization). The underlying logic is the same, moving from one industry context (regulation, norms, competitive structure and climate) to another.


Ingredients

- Entry strategies using four key questions
- Entry barriers and retaliation
- Gate openers

This recipe emerged when I was working on my PhD dissertation, I had been fascinated by the field of Industrial Organization (IO); not the type of game theoretic approaches that later emerged, but the old school of structural characteristics of competition, and not the least entry barriers. IO scholars had long understood that market imperfections lead to supranormal profits, which was seen as negative to free market economists, but of course positive to strategy scholars. The building blocks of IO had been beautifully translated into the Five-Forces Model by Michael Porter, and published widely in his acclaimed “Competitive Strategy” book from 1980.

The Radio Model
A central theme in my thesis was about market entry. As I began to teach market entry strategy I summarized the analysis in four key words: WHY would the company enter a new market in the first place? What would the company BRING to that market? What would the entrant MEET in the new market in terms of different market characteristics and competition? And lastly, HOW would the company go about entering the market? The first letters of these four key words forms WBMH. I think it was my brilliant colleague Dr Peter Hagström that once pointed to the four letters and said they reminded of a U.S. radio station, something along the lines: “You are now listening to WBHM KISS 107” – and I began to refer to the simple model as the Radio Model, and have done so ever since. By giving these little models names, I have experienced that students learn them much faster, and when I meet old students they can often refer to them after many years.
So now let us go through the four lead words. The first question – “Why” – you should pose to anyone, and of course yourself, who proposes to enter a new market. Let us divide markets along the three dimensions: new geographical markets (internationalization), new upstream or downstream markets (vertical integration) or new related or unrelated product markets (horizontal integration), see Figure below. Examples of entry would be when EMI (a Gramophone company) entered into CT scanners in the Medtech field in 1972, or when Ericsson entered with switching equipment in the U.S. market in 1986, and mobile communications equipment in Japan in 1992, selling digital switches to the new player Tokyo Digital Phone (TDP), or when Sony launched its first game console, the PlayStation, in 1994.55

If you put the firm on top of the model you get an overview of the boundaries of the firm; smaller firms are often “single-box” firms whereas larger firms often look like amebas (shifting their arms in and out and slowly moving over the space over time). Some firms expand into new market territory, i.e. spreading their arms like Virgin, when others leave markets altogether, or outsource, and thereby contract such as Nokia did when selling their handset business to Microsoft and concentrated on Telecom infrastructure (now called NSN).

Entry or exit decisions along the three dimensions are central to the strategy literature. The standard answers in the literature include “scope economies”, “synergies”, “transaction costs” or sometimes “complementarities”. Such economic advantages can be real but they should not just exist in theory but also be reaped by the firm. By being in

55 For examples of entry cases see: “EMI and the CT Scanner (HBS 383-194), and “Competitive Dynamics in Home Video Games (I): The Sony PlayStation (HBS 9-701-099).
both industry A and B an entrant potentially gains a competitive advantage vis-à-vis firms only active in one of the two markets. Let’s return to this in a moment.

**Figure 3  Three Dimensions of Entry Strategies**

A totally different answer is that there are no advantages of combination but the market is an attractive one and the firm wants to diversify assets (rather than the capital markets diversifying through portfolios of assets). Ask your Finance professor and she would clearly state that firms should not engage in such diversification – leave it to fund managers! There could also be other explanations for entry as explained by agency theory: the CEO wants to gain influence by building diversified corporate giants, not fully in line with owners preferences. Whatever the reasons, start by asking the question again: WHY do we want to enter? Ask it once and ask it again!
A common answer from the one proposing the strategy, e.g. the CEO, is that this is a way to grow; “it is a very large market” or “penetration is very low so we can expect that market to grow rapidly”. Then ask again, why do we want to grow in the first place – is this our ultimate goal? And is this the best way to grow to enter another industry? And is growth profitable? And when is it profitable?

The other common answer is “to make more profits!” Then ask again, how will this lead to more profits? And we are back at where we began: “we will make more profits through synergies “1+1 = 3” (or other scope economies or complementarities, or...). Then we need to figure out where those synergies will come from, such as in increased market power (translated in higher margins) vis-à-vis buyers, or by being in the two markets can lead to cross learning and innovation, or lower transaction costs. Entry into new geographical markets (within your business) is often motivated by scale economies as products (or strategic parts of a product) can be exported, or fixed R&D costs can be spread over a larger volume. It is important to have an idea of how exactly the entry move will translate into increased profits and also when this will happen. In summary the most commonly stated advantages include 1) cost efficiencies, 2) synergies and cross-border innovation, 3) risk diversification, 4) oligopolistic imitation, 5) follow customers into new markets, and 6) market power through complementarities (e.g. traditional cameras and film).

To help you look for the answers as to Why should we enter, here is a checklist.
The second question relates to what your firm will “Bring” to the new market. In a portfolio setting there is no link between industry A and B and thus you don’t “bring” anything but sheer capital investment. However, for entry strategies building on some notion of connectivity and advantages of the A+B combination, chances of success are related to what your firm brings. Often firms bring some technological or management resources and capabilities. The more the firm can bring to the table – and there is interest in what is brought, i.e. a true vantage point – the larger the potential of success. However, be aware of “carrying coal to Newcastle”. And if you decide to actually carry coal to Newcastle, and make it a sustainable business proposition (and not just an effect of short-term inefficiencies or exchange rate fluctuations), you better have good answers to the issue of Bring! Because in Newcastle there is plenty of coal already.
Figure 6  Asking the Second Question – Bring – Checklist

Moving to the third question – Meet – things are getting a bit more exciting. By entering a new market (and as we shall soon see “How” you enter the market) there will be different actors judging this from very favorable to very unfavorable.

As you enter a new market you will meet a plethora of new laws and regulations (just imagine a foreign banking or insurance market!), new norms, a completely different business culture and so on. In the traditional International Business literature this has been traditionally been studied as the “liability of foreignness”. This would also go for a firm entering a new product market or vertically related industry. The firm will also meet new buyers, and again the literature, in this case International Marketing, is full of cases of firms meeting new demand as they enter new markets. And new demand characteristics are often hard to grasp. A classical international marketing case was the entry of Polaroid into France, where the firm did not understand why it was almost impossible to sell their “ugly” instant cameras – which were of course superior in many technological respects – to French families, where the camera, always placed on the belly of the family father, was used as an impressive status symbol.
Another set of Meet issues relate to host competition. As the firm enters a new market it enters into a new industry structure. So what about entry barriers? How about reactions from incumbent firms? And what about the vertical structure of the host industry? By using the Five-Forces model for the host market, one can come a long way in anticipating cost of entry and what will happen once your are actively engaging with host buyers (the model involves both vertical structure, entry barriers and industry rivalry). Competitive entry barriers (not based on regulation) involve:

- Economies of scale and scope
- Accumulated experience
- Capital investments
- Brands and trademarks
- Access to distribution and service networks
- Personal networks
- Patents and innovation capabilities
- Unique access to factors of production (key staff, subsidized capital)

You will face such barriers irrespective of whether we are talking about geographical, horizontal or vertical entry. Let's take the example of entering into another national market. Since we are already in the same business we can probably enter from some vantage point (access to skills, minimum efficient scale etc.), and thus the cost of entry should be lower than for any new entrant (often referred to as de novo entry). Another route to pass the fortress walls is to find a partner inside the fortress, something we refer to as “Gate openers”\(^\text{56}\). Such gate openers would welcome foreign entry for several reasons: getting access to foreign technology and products from foreign competitors to better position themselves in the home market (horizontal gate openers), or getting access to vertically related competitors outside the home market (vertical gate openers). The first case would be General Electric (GE) as a manufacturer decides to source microwave ovens from a Korean competitor (part of an outsourcing strategy), and the second case is when Sears as an American distributor sources the same microwave oven. We have seen numerous such cases of Japanese and Korean entry into European and U.S. markets in everything ranging from consumer electronics (appliances, cameras) to copying machines and cars. The use of gate openers will eliminate some of the entry barriers.

\(^{56}\) The concept was launched in my thesis "Entry Barries and Foreign Penetration" (1987). IIB Published Doctoral Dissertation.
This is the first stage of assessing the “Meet”. In the next step you should examine incumbent firms in more detail. How will they react to entry? Will they notice at all? After some time when you have built a foothold? And how will they react? It is not uncommon that incumbents that feel a serious threat starts a price war to deter entry, or the start special bonus programs among distributors to raise the bar for the newcomer, they spread false rumors in the business, or they lobby the government for trade protection. These strategies of “tar and feather” can be quite vicious as you raise the ladder onto the wall. In other cases retaliation is negligible, particularly in early phases of entry when the “threat” has not become well known or imminent.

The final piece in the recipe is the How question. How do we go about entering new industry or market? Should we try out with a limited product scope, how do we formulate the product offer, should we set up distribution or acquire a local brand? There are plenty of decisions involved in setting the entry route, and the checklist below will hopefully give you some guidance.
Figure 9  Asking the Fourth Question – How – Checklist

How?

☐ Product offer in new market
   Segments to enter
   Narrow or broad range
   Product adaptations, certifications

☐ Access to distribution in new market
   Logistics
   Location of units
   Internal vs external chains

☐ Brand policy
   Own brand
   Private label or OEM (local brand)
   Marketing, Communication, PR

☐ Establishment of host resources
   Sales, service
   Manufacturing
   R&D, scanning
   Sourcing
   Training

☐ Entry form
   Green-field
   Acquisition
   Alliance or partnership

☐ Local leadership

☐ Linkages to other corporate units
   Component sharing
   Sharing of back office services

In summary the Radio model based on the four simple questions is a good way to craft your strategy before you enter (and the checklist can also be used to ask the question:
should we leave a particular industry or market?). In my experience the “Why” is rarely asked but is often an implicit assumption, such as “we need to grow”, but Why? Is it good for profitability to enter market X? How is it profitable? And, when can we expect profits from growth?

Bring is often overstated by Headquarters. It is easy to sit at home, often with a long story of healthy market shares and profitability, and exaggerate your competitive advantages. But are we sure we are not offering “Trabants”? If this turns out to be the case you will soon notice as you enter a new market. “Meet” is difficult and often the entrant has to go through a learning journey post entry57.

Then we turn to the last question of “How”. This is often where management starts. The how questions are straightforward. Should we enter on our own or with a partner? Should be export goods into the market? Should we acquire one of our distributors?

Thus, management often starts here instead of first asking the four other questions first. There are many issues involved in crafting and carrying out an entry strategy into a horizontally, vertically or geographically related industry. There are also important interdependencies between the four parts; what you bring to the table depends on what you meet, how you should enter also depends on what you bring and what you meet, and so on. Some of my main experiences in using this recipe are shown in the Figure below. And good luck with cooking your entry strategy!

57 A classic model in International Business where learning is key to the entry process was launched by Professors Jan-Erik Vahlne and Jan Johansson in 1977. See Johansson and Vahlne “The internationalization process of the firm - a model of knowledge development and increasing foreign market commitments”. Journal of International Business Studies. Vol. 8, No. 1 (Spring - Summer, 1977), pp. 23-32.
Over time the answers to all the four questions will change. The initial entry has its special dimensions as you try to get a foothold into the new market. As you continue penetration (unless you decide to pull out after heavy initial losses!) you need to adapt your strategy: what did we really Bring? What did we really Meet? And How do we go about further penetration? At some point you have to think about overall fit – how does this investment into a new vertically, horizontally or geographically related market fit into our corporate strategy? Should the new unit be integrated (to allow for synergies or EOS) or be kept semi-autonomous? A way to structure your work is to use the following table:
**Figure 11** Entry – Penetration – Integration, Checklist

<table>
<thead>
<tr>
<th>Radio model</th>
<th>Initial entry</th>
<th>Penetration</th>
<th>Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why?</td>
<td></td>
<td></td>
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<tr>
<td>Bring?</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Meet?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ingredients:

- Industry
- Competition
- Local
- Multi-Domestic
- Global

This recipe is about industry competition. Studies of competition and Industrial Organization typically employ a structural view. The number of buyers and sellers, relative positions (market share) etc. constitute fundamental variables of competition; and classified into the traditional categories of monopoly, oligopoly and perfect competition. Competition also has a “softer” side to it, as we discussed in Part I of the book using a sports metaphor. Together with Maria Bengtsson I proposed that two industries with similar structures could exhibit very different patterns of competition, what we labeled the “climate of competition”.

Imagine the “middle box” of Porter’s Five-Force Model. Somehow the geographical boundaries around that box must be drawn (the other boundaries are less critical since neighboring industries are included in the five forces). As a simplification competition can range from local in nature (national or sub-national), to multi-domestic (with some degree of international trade and investment), to global. Michael Porter in his 1980 book defined global competition as:

“A global industry is one in which the strategic positions of competitors in major geographic or national markets are fundamentally affected by their overall global positions”. “To analyze competition in a global industry, it is necessary to examine industry economics and competitors in the various geographic or national markets jointly rather than individually”

M. E. Porter, “Competitive Strategy” 1980

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As I was teaching on competition and how competition changes over time I developed the notion of an “archipelago”, i.e. islands of competition separated by different barriers.
Competition on each island would have different characteristics, both structural and behavioral, or climatic as we called it. Some markets would be more fragmented than others; bargaining positions would differ across islands etc. Some of the more pertinent barriers would be:

- Trade barriers (tariff and non-tariff) and FDI barriers
- Technical standards and environmental standards
- Transport costs and the degree to which products are perishable
- Local regulations, customs and norms
- Local brands and tastes
- Traditional IO barriers to entry
- Geographic cartels (explicit or implicit)

As long as these fragmenting forces take the upper hand we expect a low degree of international competition. Firms might decide to internationalize and enter a foreign market (green-field or via M&A) but the fragmenting forces would force the firm to play different games on the two different “chess boards”. For the islands to “merge” in terms of competition, the fragmenting forces be reduced, for example through harmonization of standards (between States in the U.S. or between nations in the EU) and emerging global consumer/user tastes. Through actions of firms building interdependencies across the islands integration will also occur. Integrating forces include intra-firm trading (e.g. components), heavy investments into new markets followed by integration of functions such as R&D, assembly operations, manufacturing, logistics, services and emerging global strategies.

Depending of how these forces play out industries will move along a scale local – multidomestic – global. Some firms are moving to the right in the Figure below, while others are moving in the opposite direction for example as new fragmented standards emerge. Some industries have moved towards the global state, while others stay on as multidomestic (see recipe on “the Stairway”).

Figure 1 The Archipelago Model
It is not easy to define exactly where an industry is on the y-axis. In order to help you in the process, the next recipe includes a simplified model to make such a calculation. Let us turn to the Stairway recipe.
Ingredients:

✓ **Industry competition**
✓ **Local, Multi-Domestic and Global Strategies**
✓ **International change agents**

Based on our understanding of the Archipelago Model we can imagine industries being at different points along the dimension of “degree of international competition”. Some industries, where fragmentation forces prevail, are local/national in character, while others are multi-domestic (few large islands), or global. To simplify things we use these three levels of competition. To figure out where your particular industry is on this scale I recommend the following simple tool.

First we divide the world into five large economic blocks based on GDP: EU (23% of world GDP), US (22%), China (12%), Japan (8%) and Latin America (7%). These blocks – or islands – constitute over two thirds of the world market, and is a good approximation of world market positions. Then you list the five major competitors in your industry for each of the islands, see Figure 1. Here we use the example of Telecom Infrastructure.
The highest number of firms in the Global Market Matrix is 25, i.e. when there are no overlaps across islands, and the lowest number is 5, when the top five firms control all islands. We then classify the industry according to the values you receive:

- **Global competition**: 5 – 11 competitors cover the world
- **Multi-Domestic competition**: 12 – 18 competitors cover the world
- **Local competition**: 19 – 25 competitors cover the world

The second dimension of the Stairway Model represents the strategies pursued by the firms. We know from IO research that industry structure put boundaries on strategic choice. In Michael Porter’s words:

> “My view is that there is some set of fundamental traits of an industry which are unchanging and which place some bounds in the strategies firms may choose over the life of the industry. Within these bounds there are broad ranges of possible strategies, and these change over time as innovations in selling and producing the product occur.”

So we have this mix of voluntary forces, where firms decide on a strategy with little or no regard for external forces or signals, and shaping forces, where industry structure shape strategic direction (compare the metaphor of rails in the Railway Model).

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To receive a value for the strategy dimension use the global market matrix above and calculate for your particular firm:

- **Global strategy** Present in 5 columns in the matrix
- **Multi-Domestic strategy** Present in 2 – 4 columns in the matrix
- **Local strategy** Present in 1 column in the matrix

Thus, a firm with a global strategy must be present in all five markets, and be ranked as one of top five competitors in each of those markets.

The simple expectation is that firms will tend to lie on the 45 degree line in the Figure below. Industries characterized by local competition will favor local strategies and so on. However, in every industry we find outliers. In the Figure we see a Multi-Domestic industry (12-18 competitors cover the industry matrix as shown above) with three players: one with a local strategy, one with a multi-domestic strategy (as expected) and one with a global strategy.

Positions outside the 45 degree line are either a result of bad strategy, which will correspond to disappointing profitability, or a result of innovative and successful strategies, where the distance to the “average” strategy results in some form of economic advantage. Such advantages can for example be based on synergies, economies of scale or a business model attending to customer needs in a superior way.
Over time industry positions will change, as will strategic positions. Take an example. If a firm embarks on an international strategy in a local industry, this will have implications on both the revenue and cost sides. The issues of why you would do it, what you would bring and what you would meet are all covered in the Radio Model. If the WHY question can be answered with some economic benefits (scale, synergies etc.), then one might expect that the strategy will be copied by other firms, and as a result competition in the industry will shift to a higher level of internationalization – a “stair” is built. Successful change agents, working outside the “structural rules of competition” will thus help build a stairway, and thus the name of the model (see Figure below). Due to changes in trade and other regulations, technological shifts etc. the stairway walk can also be reversed, shifting to a lower level. We have seen in many industries that segments of an industry “walks up the stairway” while other segments stay at a lower level of internationalization.
This is exactly what I saw in the Home appliance industry (see Part I of the book) during my PhD work; Electrolux was the outlier playing a lead role in shifting the whole industry up the stairs.

If we turn back to the Telecom Infrastructure Business we have a handful of firms competing on the five islands. The matrix has a total of 6 firms which makes it a global industry. Ericsson has five positions and so forth. The stairway model in 2015 is presented in the Figure below.
One of the nice features of this recipe is that you avoid falling in the trap of equating “big firms” with global competitiveness. If you make a simple list of the largest producers in almost any industry – it can be insurance, trucks or processed food – you often end up with some Chinese or Russian firms. The size of the firm is a typically result of monopoly positions – “national champions” – in their enormous home markets. If that firm only shows up in the home market in the Global Market Matrix, i.e. receives a value of one, then the place on the list of top world producers gives the wrong impression; the firm is not competitive in international markets, otherwise it would have showed up in several markets and consequently received a higher value. How often have you come across the Japan Post Insurance company, the largest insurance company in the world, Russian Railways (RZD) running the largest rail network in the world, or China National Tobacco the world’s largest tobacco company? Or how many of you have tried Dynasty or Changyu, a couple of the top selling wine brands in the world – but you have to go to China to find them on the shelves.
Ingredients

- Microeconomic drivers
- Automobiles
- Two different firm environments (separation of twins)

In the introduction to Part II we discussed about different perspectives on competitiveness. As Michael Porter was travelling the world he experienced different home bases of leading global firms. American industry was seen as losing competitiveness and Mike was looking for a new and better model to explain the “quality of strategies” among global leaders, based in different home bases. His big contribution was to craft a conceptual model of the microeconomic drivers of competitiveness - the Diamond model. He argued that in order to explain the failure of GM and the success of Toyota in international markets one cannot rely on the traditional macroeconomic drivers, including cost of capital, simple factor endowments or government subsidies (see Figure 1).

When asking the question which national industries are competitive? The simple economic model would use the following logic:

- Firms with the lowest price in international markets wins
- Lower price is based on lower costs
- Lower costs come from cost of labor (low wages), factors (e.g. low cost access to natural resources) and capital (low interest rates) – and all these are impacted by policy (subsidies, taxes etc.), and
- exchange rates

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But these explanatory variables did not fit empirical reality. The Japanese automakers were not competitive due to lower wages or government subsidies. So if macroeconomic drivers, factor endowments and government policy are not well suited to explain the relative success of Toyota and relative decline of GM, maybe we should look for drivers at the firm level. Maybe the Japanese automakers had a better technology in the plants? Or they were larger, more or less diversified, or more experienced in auto making? Again the answer would be no. There were no such tangible differences. For example, the large international project on “The Future of the Automobile”\textsuperscript{62} had shown that Japanese auto plants were not more sophisticated than its European and U.S. counterparts.

However, at the level of management, quality systems and factory organization, there were large differences. In a book by LBS professor Julian Birkinshaw\textsuperscript{63} he pointed to the failure of GM to “reinvent itself”. GM had become stuck in an old bureaucracy (referred internally as to the “GM System”), where management was highly formal and procedure driven. Policies followed strict principles and any real respect for the customer had disappeared since long, leading to conservative designs. Costs had become high (including wages driven by a strong labor unions). The only really positive thing the author had to say about GM’s strategy and management was the clear vision: to always be the number 1 automaker in the world! GM had moved from controlling more than 50% of the U.S. auto market to less than 20%. On May 31 in 2009 GM went bankrupt.

Somehow the Japanese auto manufacturers had developed capabilities and resources far more sophisticated than their U.S. counterparts. In the end this would translate to both cost advantages (for smaller cars in the order of 10%) and differentiation advantages (increased mileage and quality of the product). This would go for Toyota but also for Nissan, Honda and the others. During the 1980s U.S. auto firms put on a very strong lobby in Washington that led to severe trade barriers for Japanese car imports. This only led to the Japanese setting up plants in the U.S. and transplanting their capabilities, into unknown territory in the South.

So the question remains, why would these firms develop such innovative capabilities and ultimately success in international markets? In order to figure this out, we will use the extreme case of automobile manufacturing in East and West Germany between 1945 and 1990, which has led to the name of my recipe, The Trabant Model.

**The Trabant**

Let us go back in history for a while. Before World War II there were a large number of automotive firms in Germany. Four of the leading automakers: Horsch, Audi (both May 31, 2009
>50%
<20%
Changing market but GM stuck according to expert comments:
• Bureaucracy "GM System"
• Formal, procedure driven
• Policies and strict principles
• No respect for customers
• Conservative designs
• Too high costs
…but very clear vision – always to be No. 1!
Horsch and Audi had been started by the entrepreneur Alfred Horsch), DKW and Wanderer were merged in 1932. The company was renamed Autounion and a new logo with four overlapping rings, representing the four makes, was born.

**Figure 4** Autounion - a Merger of Four German Automakers
After the War, the different plants and other corporate units were split into an Eastern and a Western part. The eastern plants were located in the area of Zwickau, which became the new hub for car production in the German Democratic Republic. The Autounion mark with the four rings disappeared, and the eastern cars were made under the IFA brand (later Trabant), and the western cars under the brand of DKW (one of the brands from the merger in 1932).

The cars looked identical during the first years (production being based on the same blueprints and tools as during the War). After some years both automakers tried to engage in exports. DKW had difficulties upgrading its models and was taken over, first by Daimler-Benz in 1958, and then by VW in 1965 (still the owner of Audi). The same year the company changed brand to Audi, and introduced a modern four-stroke engine; the DKW had only offered 2-stroke engines. Audi slowly gained in quality and reputation, and new models with new features were introduced. In 1990 they could offer four-wheel drive and engines with over 200 hp, and slowly they were catching up with domestic rivals such as BMW. The Trabant on the other hand had a similar look in the 1980s as in the 1950s. Needless to say the Trabant only offered the two-stroke engine. But the much-hated needle, which was put into the tank to measure the level of gasoline, had at last been replaced by an indicator on the dashboard. In 1990 Trabant offered a 23 hp engine with a speed limit below 100 km/h.
So why would management and workers in the East and West build such different cars; one highly competitive in world markets and one highly uncompetitive outside the Eastern block? The answer, I suggest, is not that Herr Schmidt in the East was less educated or less smart than Herr Schmidt in the West. Instead, it was about the two environments that shaped the two firms during four to five decades. In fact, we have a sort of natural experiment here where we split one firm and put in two different contexts, similar to traditional studies of separated twins<. And there are many such twin examples. Take another carmaker; Wartburg (started 1898 in Eisenach), which had been acquired by BMW, was also split. BMW in the East was destined by the politicians to build larger cars (while Trabant had a monopoly for smaller cars). First they sold them under the name of BMW, but after a fight with BMW in West Germany, the eastern company changed name to EMW in 1952 (and later brought back the old

Wartburg brand). During the early 1950s families in Sweden could chose between the somewhat more expensive BMW or the somewhat less expensive EMW, both being the same model.

**Figure 7  Two Different Environments Shaping the Two Automakers**

To really get a grip on the two contexts for the twins, we would need to make detailed analysis of the macro- and microeconomic environments. Without going into detail we can use Porter’s Diamond model (microeconomic environment) and compare degree of rivalry, demand sophistication, factor specialization and level of sophistication and the cluster environment. A summary is shown in the Figure above. Even how hard the management of Trabant tried to build a better and more competitive car the environment would not allow it. Just to take one example. Management had the idea of replacing the weak gasoline engine with a diesel engine. There was a very successful manufacturer of small diesel engines in DDR. However, politicians and bureaucrats in East Berlin thought that those diesel engines should be exported to bring in hard currency instead of being used in the Trabant.

Flying at 10,000 meters above Germany at the time, it would be hard to notice any differences; steel plants, auto plants, railways linking suppliers and buyers, and Herr Schmidt going to work, both in the East and in the West. But if we would lower ourselves and compare national institutions and regulation, quality of the Diamonds and clusters, and incentives of individual entrepreneurship and innovation, one would see large differences. Just as the researchers did in the 1980s when they compared Toyota with GM.
Ingredients:

- Agglomerations
- Geographically proximate firms
- Research Institutions
- Educational Institutions
- Capital providers
- Public actors and government
- Organizations for Collaboration

First let me make one thing clear; everything in an economy is not clustered. Typically for a national economy about two thirds of employment involves local industries. If you make a map of the distribution of people in a particular nation or region these local industries (retail businesses, health care providers, restaurants etc.) will closely mimic the same distribution as the population, and there is not a trace of agglomeration into one or a few spots. On the other hand about one third of industrial activity will exhibit different degrees of agglomeration. And this goes both for hi tech (life science, ICT) and more traditional industries (paper, automotive, shoes), and it goes for manufacturing and service industries (business services, banking) alike. The cluster mapping methodology developed by Professor Porter uses some 50 broader cluster categories (so called traded industries where firms can chose a locality).

Clusters is a type of agglomeration consisting of firms in related industries (competitors, buyers, suppliers, firms in related technologies etc.), and a range of other supporting organizations. In order to separate out different types of agglomeration economies one can make a simple classification scheme delineating efficiency advantages (largely economies of scale) versus innovation advantages on the one hand, and agglomeration in general versus agglomeration of technologically related actors on the other. This division leads to four main types of agglomerations.

65 http://www.clusterobservatory.org/index.html offers access to different cluster mapping sites.
The first type relates to general economies of regional and urban concentration that apply to all firms and industries in a single location (urbanization economies), representing those external economies passed on to firms as a result of saving from the large-scale operations of the agglomeration as a whole. These are the forces leading to the emergence of industrial core regions, manufacturing belts and metropolitan regions. City agglomerations attract a wide range of economic activity. More important cities, such as capital cities, represent political power and markets for public projects, and are therefore particularly attractive to headquarter functions of large corporations.

A second agglomeration type involves economies that relate to firms engaged in similar or inter-linked business activities, leading to the emergence of industrial districts. Such districts constitute a base for flexible production systems that can meet volatile markets. In both cases, agglomeration economies have their roots in processes whereby linkages among firms, institutions and infrastructures within a geographic area give rise to economies of scale and scope; the development of general labor markets and pools of specialized skills; enhanced interaction between local suppliers and customers; shared infrastructure; and other localized externalities. Agglomeration economies are believed to arise when such links either lower the costs or increase the revenues (or both) of the firms taking part in the local exchange. Presence in an agglomeration is, in other words, held to improve performance by reducing the costs of transactions for both tangibles and intangibles. The formation of regionalized industrial systems will be particularly intense where linkages tend to be small-scale, unstable and unpredictable, and hence subject to high transaction costs.
In addition to these two types of agglomerations, explained mostly by efficiency gains and flexibility, one can distinguish two types of agglomerations explained as centers of innovation. The first type we refer to as clusters, where sustained competitiveness is based on capabilities linked to a particular location. Clusters are not seen as fixed flows of goods and services but rather dynamic arrangements based on knowledge creation, increasing returns and innovation in a broad sense. Thus, clusters are made up not only of physical flows of inputs and outputs, but also by intense exchange of business information, know-how, and technological expertise, both in traded and un-traded forms. Such technological spillovers were actually at the core of Marshall’s analysis in the early 20th century, but had been mostly forgotten until Paul Krugman and Michael Porter brought them into central stage in the early 1990s.

The last type of agglomeration relates to knowledge creation and creativity in a region without any sectoral boundaries. While Porter’s main concern has been the existence and reproduction of clusters of technologically related firms, there are corresponding attempts to analyze the learning abilities and creativity of regional and urban agglomerations of the general type. Instead of specialization and spatial clustering of related industries, emphasis is placed on the presence of a regional variety of skills and competencies, where the — often unplanned — interaction among different actors leads to new and often unexpected ideas and new creative designs, products, services and business concepts.

Clusters
Research has shown that clusters play a critical role in innovation processes within regions. To understand why, we should see the cluster as a collection of different types of complementary actors – firms, large and small, domestic and multinational, suppliers and buyers, and many other related organizations that interact in both formal and informal ways. The most important type of actor is the firm. It is firms, and individual entrepreneurs (some of which act as role models in the cluster) that both plant innovation seeds, takes innovations to markets and subject them to the test of competition and demand. Another type of actor includes research organizations, which produce all sorts of innovation seeds. A third type is education organizations, such as schools and polytechnics. Universities are a special case, because they play the double role of both research and education institutions. A fourth type is the capital providers, such as angel networks, public and private seed funding and commercial banking institutions, who provide the capital (equity/loan) needed for the exploitation of inventions and new business models. And, fifth, government and other public bodies are actors that make and implement policy decisions about public infrastructure investment, regulations, cluster programs and so on, critical for the innovation climate.

The public side includes many levels of government and a wide range of public agencies.
Dynamic clusters are characterized by dense networks and so called strong ties inside, but there are of course numerous weak ties to global markets and value chains and other clusters and areas of technology (illustrated with the globe and small cluster to the left in Figure 1). Isolated clusters, and clusters with extensive gaps between actors, will not lead to innovation. Thus there is a sixth very important type of actor on the cluster stage, including different kinds of networking organizations, or what we refer to as “bridge builders” (see Recipe VII). Such organizations include, among others, science parks, incubators, innovation parks, research and technology organizations and cluster organizations.

Now, let us take a quick look at clusters through four lenses.

**Dimension One: Degree of Agglomeration**

Looking out over the economic landscape we find firms and organizations being located in, or relocated to, places characterized by everything from large agglomerations, such as Silicon Valley, to almost total isolation. Some clusters are part of larger urban agglomerations whereas others are more rural. A firm to the left on the scale in Figure 2
is isolated in a cluster sense, lacking close rivals or firms in technologically related industries, including suppliers and buyers in the vicinity. But, the firm can still be located in an urban location, surrounded by other diverse actors.

The left hand side is in line with the Soviet-style planning model built on highly fragmented value chains, or the Swedish model of “bruk”, i.e. one-company towns in traditional industries such as paper and steel. These firms were often large and efficient in terms of economies of scale at the plant level. On the other hand, they were not surrounded by a multitude of related firms and industries, and entrepreneurship and new firm formation were unknown phenomena in these towns.

**Figure 3  Degree of cluster agglomeration**

**Dimension Two: Cluster Dynamics**

The second dimension of clusters involves the level of dynamism and amount and quality of linkages between cluster actors, and external linkages to international markets (see also 7 Gap Model). Some agglomerations are more on the static side, i.e the “Silicon Glens” as opposed to the “Silicon Valleys”. Level of networking, factor mobility and general dynamism differs enormously across clusters. Also, the level of sophistication differs, where some clusters are more production oriented in low cost goods (automotive cluster in Dogu Marmara, Turkey) while others offers highly differentiated products (automotive clusters in southern Germany), including R&D, design, branding and other strategic functions. If the quality of resources differs within a region, so does also the flexibility with which the pieces can be assembled and reassembled. Like in a Chinese puzzle, the shape of each blue component plays a role, but also how the pieces fit together, and how they are constantly rearranged to improve the productivity of available resources.
Dynamic clusters create the foundation for sophisticated strategies, and act as a driving force behind upgrading and innovation among incumbent firms. In summary:

- Firms in dynamic clusters develop strategies, routines across the value chain, and new capabilities in a process of prestigious back-yard rivalry.

- Firms in clusters tend to share many activities through cooperation, or swap products. Clusters facilitate both horizontal and vertical (buyer-supplier) cooperation within a setting of a “common language”, trust and high social capital.

- Firms in rich clusters can operate more efficiently, drawing on specialized assets, suppliers and buyers with short lead times. Critical resources and capabilities are often not within the firm but accessible through networks inside the cluster.

- Firms in clusters can achieve higher levels of knowledge creation and innovation. Knowledge spill-overs and close day-to-day interaction between buyers, suppliers and organizations leads to incremental improvements which is the foundation of innovation, both technical (product and process improvements) and non-technical innovations (business model improvements). Innovations diffuse fast within clusters.

- Clusters offer an environment where different resources (individuals, technologies, capital etc) quickly can be reshuffled and restructured (spin-offs, labor mobility transferring skills across organisations etc.), allowing for new and better economic combinations of skills, capital and technology. The need for changing the strategy or “recipe” of the firm can quickly be accommodated within the cluster.

- New business formation tends to be higher in dynamic clusters. Start-ups are reliant on close interaction with suppliers and buyers. The cost of failure is typically lower within a cluster where many alternative opportunities exist.

- Clusters in many cases offer lead markets where sophisticated buyers pull technology development and innovation in close interaction with suppliers.

The outcomes of firms, as manifested in the output of goods and services, will vary from cluster to cluster. For sure, cars from Japan will compete in the global marketplace with cars from Germany or the U.S., and increasingly, Japanese built cars in the U.S. compete with U.S. cars built in Mexico. But, global markets are one thing and local clusters
another. Cars from one cluster will “taste” and “smell” different from cars from another. They will cater to different consumer tastes; they will exhibit differences in cost levels, quality, features, and energy efficiency and so on.

**Figure 5   Degree of Cluster Dynamism**

Clusters tend to oscillate on the scale in Figure 5. Some clusters continue as static agglomerations for long periods, whereas others increase dynamism. Again, other clusters have experienced being on the right side of the scale, but have lost touch due to external shocks or lock-in effects. Internal constraints that can kill cluster dynamics include:

- investments in plants, equipment and specialized labor and infrastructure that reduces flexibility
- limitations on information received by decision makers and increased ethnocentrism (and the NIH syndrome) leading into a dead end
- history and culture leading to political constraints
- the evolution of rigid institutions (legal barriers and self restraint based on norms) hindering a change in technology or strategy
- legitimacy considerations reducing room for action and unconventional strategies

External constraints typically emerge from technological shifts emanating outside the cluster, or from actions of war or other exogenous shocks. More about the ups and downs of clusters in the next section.

**Dimension Three: Cluster Life Cycles and the Inverted S Curve**

The third dimension of clusters involves the maturity of the cluster. Clusters follow life cycles. Typical seeds of clusters include natural advantages (ore deposits, transportation routes, climate etc.), entrepreneurship or some particular demand or skill within the region. Hollywood was based on sunny beaches perfect for shooting silent movies, the wine industry in Bordeaux, France, is based on a particular terroir, the silk industry in western Japan on a consistent and moist climate, and the Swedish paper industry in
Värmland based on access to timber, energy and efficient transportation on rivers. Another typical cluster seed is an entrepreneur who starts a particular industrial activity in a particular location. If the new venture is successful, and some factor advantages support the business idea, a cluster can emerge.

Some emerging clusters will ultimately take off and grow, whereas others will remain small or disappear. Growing clusters will enter into a process of international competition in both factor markets (attractiveness on new companies, people and capital) and final goods markets. The more successful clusters are built on a combination of superior internal dynamics; including rivalry and intensive new firm formation, and superior attraction on resources from the outside. Over time, the cluster will go through different phases. The early period is often identified with one or a few people, the “heroes” acting as role models. If the entrepreneur is successful other will follow suite and enter the business, and with a growing business there is room for entry of upstream and downstream industries. A cluster is emerging. In the mature phases certain strategies will tend to dominate, and economies of scale will play an increasing role. Concentration to a few dominating firms is common. Ultimately, some clusters go into decline, finally reaching the “museum” stage, or they jump onto a new cycle, a renaissance, based on new technologies and new firms (see Figure 6).
Linking the Cluster Life Cycle to the Diamond model, one can think of a limited but dynamic Diamond in the early phase, shifting into a static Diamond environment (surviving firms with market power, economies of scale, lack of rivalry etc.), and then back to a dynamic Diamond in the renaissance phase.

**Dimension four: Natural vs Planned Clusters**

The fourth dimension of clusters involves the level of planning and policy involvement (see also Funnel Model). Many world leading clusters were not “planned” in the way we typically think of the word. In other cases there has been more of a clear “game-plan”, created by national or regional governments. In Dubai, Saudi Arabia, Korea, China, and other parts of the Middle East and Asia we see very visible government hands behind cluster construction, whereas in the Anglo-Saxon world it is more invisible and more or less absent, at least as a direct “cluster policy”. Europe has turned to more of cluster programs and initiatives forming a natural part of regional (including smart specialization), industrial and innovation policies. And even in the U.S. cluster programs emerge as part of the economic development landscape.
As Professor Porter’s cluster model was “adopted” by policymakers and public officials all around the world, it typically shifted from a focus on competition to one of cooperation. It also shifted from a model describing how market forces lead to clusters, to one of constructing clusters involving visible hands. Clusters are to some extent always a result of “construction”, even if there is not one central “manager” or dedicated organization guiding the process. A range of policies impact firms and regions in many different ways. Industrial policy, innovation policy, science policy, regional policy, and now even cluster policy are crucial parts of the business environment of firms all around the world. Some policies help in fostering a more innovation driven business environment, while other policies and regulations clearly hinder innovation and upgrading. Policies do play important roles but not necessarily always constructive ones. The 7 Cluster Gap model (Recipe VII) will take a closer look at these issues.

**Figure 6  Evolutionary vs Constructed Clusters**

In connection with discussions around cluster construction, probably the most common questions we receive is: how is it that Silicon Valley, which has evolved into the world’s most impressive cluster, did this without any public initiative? And then why should anyone, public or private actor, take on collective action to enhance cluster dynamics?

First, we would argue that the evolution of dynamic clusters typically combines a mix of invisible and visible hands, and that this also goes for Silicon Valley. The most critical and visible hand to build a bridge between the world of science and the world of business was initiated by the Provost of Stanford in the early 1950s\(^67\). No one outside the region really took notice, but two or three decades later this bridge had led to intense traffic, which in turn nurtured emerging star firms in IT hardware and software, and later around Internet based business models\(^68\). Second, and this is often forgotten, public Money (research grants etc.) actually has played a critical role when attracting talent and investment to the valley, and also in financing a number of high risk

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technologies, including ARPA, support to SMEs through the SBIR program, and through other means.⁶⁹

The 7 Cluster Gaps Model

Ingredients

- Firms
- Research institutions
- Educational institutions
- Capital providers
- Government and public bodies
- Outside clusters
- Global markets
- Cluster Organizations

If you still have some appetite, let’s turn to our seventh recipe - The 7 Cluster Gaps model. The model has been developed jointly with Dr Göran Lindqvist and Mats Williams. The main purpose of the model is to analyze how well a cluster functions. The larger the gaps between different actors on the cluster stage – firms, research units, education institutions, capital providers etc. – the less dynamic the cluster is, and the less innovation we can expect. And vice-versa the more the innovation gaps are bridged, the more dynamism and more innovations we can expect.

The reason clusters are relevant for innovation is that when there is a critical mass in a location of a sector or industry, the different actors can support each other, and new ideas are formed in both planned and unplanned meetings, interaction and mobility. Through interaction within the cluster, conditions are more likely to emerge that are adapted to the needs of the firms, and that are conducive to innovation. Universities set up research groups that produce cutting-edge knowledge in relevant fields, and channel those findings to firms in the cluster or lead to spin-offs. Colleges offer specialized education programs and graduate students with skills particularly suited for working in the cluster. Capital providers become experts in technologies and skills related to the cluster, and they can provide “smart money” by being better at assessing risks and opportunities in the cluster. Local government and public agencies learn to understand the needs of the firms, and make decisions that promote the cluster, and removes obstacles to progress. In all these ways surrounding actors support firms and entrepreneurs, and make it easier for them to be innovative and competitive. Also, not least important, firms interact with other firms. Small firms interact with large firms; domestic firms interact with multinationals and so on. They engage with each other as buyers, suppliers, and technology partners, but competing firms also attract staff from
each other, they imitate each other at a fast rate, and firms in the surrounding cluster simply act as a source of inspiration to aim higher in competition, and to set more ambitious goals.

The Figure below illustrates all these interactions in a dynamic cluster where we expect new business models, products and processes to emerge. There are five main types of actors on the cluster stage (firms, research institutions, education institutions, capital providers, government and public bodies), and between them there are paths along which actors can interact with one another. A sixth type of actor involves different organizations for collaboration, so called “bridge-builders”. Outside the cluster there are other clusters and global markets. One path, or perhaps rather one set of paths, runs between research organizations and firms, another between government and firms, a third between one cluster and another, and so on. In an ideal cluster these paths are busy with traffic. People change jobs between actors, network across boundaries, bring news to others in formal and informal gatherings, cooperate with other actors, and tie the cluster together in a thousand different ways. All this traffic helps make the cluster more dynamic. Knowledge is created, spread and shared. Collaboration ensures that resources are used in the best possible way. Coordination aligns the interests and actions of different actors.
The Figure is a compelling picture. It shows a cluster commons in an ideal way. It is the kind of cluster everyone wants. Unfortunately, in reality most clusters don't look like this at all. In real clusters, communication between different kinds of actors is massively flawed. Small firms who believe they have something new exciting to offer have a hard time even to be allowed to meet with the right people at a large enterprise. Large firms searching for a new supplier are more likely to look for an established international supplier, than to go searching among innovative SMEs located right under their nose. Policy makers often have only vague ideas about what business really needs.

Researchers are more interested in academic publishing than commercializing their new findings. Schools formulate their curricula with little knowledge of what skills industry really needs. Entrepreneurs find it difficult to persuade banks to invest in new innovative businesses. Many business people, particularly in SMEs, would laugh at the idea to approach the local university to see if they have some skill or new technology they could use. In some cases a robust commons has never been built and in other cases in has been ruined through the “tragedy of the commons” where everyone is utilizing it, but no one is prepared to invest in it.

It is not difficult to understand that these connections will not just happen spontaneously. After all, the different types of actors have different roles to play in society. Universities are supposed to do research, not to serve as R&D departments of companies. Policy makers have responsibilities that go far beyond serving companies with whatever they require. Education organizations have many other stakeholders than firms to oblige. And firms are in business to make a profit for themselves, not to provide altruistic support to each other. Even so, with some additional effort put into coordination and collaboration, large benefits could be reaped, which now remain neglected.
In other words, more often than not, clusters in reality do not live up to the potential that cluster theory grants them. Clusters possess tremendous potential, but in many cases, this potential remains largely untapped. At first, these immense missed opportunities may seem hard to accept. If the world is a place that is constantly moving towards an ideal equilibrium, i.e. a state of efficiently used resources, it seems unlikely that these kind of gross misalignments could endure. After all, why would clusters not make the best possible use of the potential they enjoy? Why should these possible benefits remain untapped, when all that is needed is a little interaction?

The answer lies in the fact that interaction between agents is not such an easy thing to do. If all it would take were a simple phone call from one person to another, then clusters would surely be a lot more efficient. But in reality, there are a thousand reasons why that phone call never takes place. The policy maker doesn't pick up the phone, because she doesn’t expect to hear any deeper insights from the industry of what they really need. If the college teacher talks to the business world, it is about finding placement positions for the students or arranging recruitment fairs, but certainly not to discuss the curriculum. The businessman has no idea what the researchers at the university are doing, he probably doesn’t know their names and he certainly doesn't know within what departments they are organized in. The researcher might want to see her latest discovery turned into a successful commercial innovation, but she knows that her career depends on publishing papers, and it will in no way be furthered by interacting with business people; in fact, it will be hampered. And if, by chance, the businessman and researcher would meet and discuss each other's work, they would soon find that they speak different languages and have different mindsets, almost as if they were living in different worlds.

What this all means is that there are obstacles to interaction, such as lack of trust or limited knowledge across actor boundaries. Obstacles make it difficult for actors to communicate with each other, to initiate collaboration, and to diffuse knowledge. The Figure below gives a list of such obstacles.
It is obstacles like these that prevent the research world to spread its new knowledge to the business world, and that stop policy makers from seeking advice from business people. Obstacles make traffic slow and awkward where it preferably should be rapid and easy. Obstacles isolate systems when they should be connected. In short, obstacles create gaps where there should be paths. The picture of the cluster that we sketched above, with its wide paths and its intense traffic is not what we often see. Real life clusters have obstacles, much like the rivers and streams that a path has to cross. These gaps, which are quite persistent, have great implications for innovation and competitiveness. It means that clusters despite their great potential for dynamic interaction between actors, often only exploits a small share of this potential. People do not make the most of the possibilities found around them, because they simply lack knowledge about what opportunity is nearby, they lack the networks to utilize it, they fail to initiate collaboration they would benefit from, and they fail to coordinate their actions with others. In short, people and organizations lack a commons. Without a lush commons, clusters will suffer from knowledge failures, network failures and cooperation failures, leading to innovation failures.
In summary there are seven cluster gaps separating the seven major types of actors (not including organizations for collaboration):

1. The Firm-to-Firm gap barring interaction among firms in the cluster such as between SMEs and large firms (domestic or units of multinational firms)
2. The Firm-to-Research gap barring interaction between firms and research organizations and laboratories inside and outside universities
3. The Firm-to-Education gap barring interaction between firms and education organizations
4. The Firm-to-Capital gap barring interaction between firms and capital providers
5. The Firm-to-Public actors gap barring interaction between firms and government and various public bodies
6. The Firm-to-Cluster gap barring interaction with firms in other clusters
7. The Firm-to-Global market gap barring interaction with global markets and value chains

Public support and other collective action can help to overcome knowledge failures, networking failures and cooperation failures, and this is where cluster organizations come into the picture\(^70\). Cluster organizations, financed through both public and private means, can bring different types of actors together and correct for some of the failures. They connect business with academia, education with industry, and large firms with small firms. They do this by providing activities and meeting places where common issues can be discussed and acted on jointly. They help the different actors overcome the obstacles and start talking to each other. In doing so, they get the traffic moving along the paths.

One could say that a critical mission for cluster organizations is to strengthen the identity of the cluster and building a “commons” (meeting places, forums, platforms). Here individuals, representing different actors within clusters: large and small firms, research organizations, education institutes, capital providers and various public organizations, can meet, exchange information and ideas, and engage in resource mobility and collaboration. Just as successful firms in well developed institutional settings engage in competition in efficient markets, in parallel, they engage in interaction and collaboration in dynamic clusters. One can certainly imagine knowledge spillovers (e.g. through labor mobility) without any direct contacts between clustered firms and organizations, but a commons will offer paths and bridges which in turn will lead to higher levels of spillovers. In addition to building a commons, cluster organizations often involve themselves in initiating a wide range of both innovation and business development projects across the seven cluster gaps, thus supporting enhanced intra-cluster traffic.

Figure 4  Cluster Organizations as Bridge Builders

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Modern society is characterized by thick webs of institutions. While cluster organizations are rather new phenomena, there are many other organizations for collaboration acting as bridge builders, such as Science Parks and Incubators (see Figure below).

**Figure 5  Different Types of Bridge Builders**

<table>
<thead>
<tr>
<th>Sector/Gaps</th>
<th>Few gaps</th>
<th>Many gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broad - across industry borders</td>
<td>Research Institutes Innovation Offices at Universities</td>
<td>Science Parks Innovation Parks Incubators Public Research Organizations</td>
</tr>
<tr>
<td>Industry focus</td>
<td>Niche Incubators (e.g. ICT, Life Science) Test Beds Demonstrators</td>
<td>Cluster Organizations</td>
</tr>
</tbody>
</table>

More than 3,000 years ago Confucius advised on collaboration\(^7^2\):

"Wishing to be established oneself, he assists others to be established"

There is something to it.

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VIII The Funnel Model

Ingredients

✓ General business environment
✓ Clusters
✓ Firms and entrepreneurship
✓ Policy

As a way of framing and understanding the various levels of interaction between firms and nations, we have developed what we call the Funnel model. In the end we are interested why firms based in particular regions and clusters develop sustainable competitive advantages while others do not. The funnel covers three main levels:

1. the national business environment (can also do this analysis at the regional level)
2. clusters (consisting of several proximate and related industries), and
3. firms
If we start in the center of the Funnel, we have clusters. Clusters are a part of the microeconomic business environment of a region, and are shaped by certain almost deterministic forces (blue arrow in Figure), related to the overall history and culture of a nation/region, the geographical (geopolitical) circumstances (access to waterways, how affluent neighboring nations are etc.), general institutions and regulations, and the overall macroeconomic environment. All clusters within a nation are affected by things such as the exchange rate, color of the government, and historical and geographical circumstances of the nation or region.

If we take the analysis of the funnel one step further, one must distinguish between different clusters within a nation or region. Thus, within the same national or regional context we have a range of clusters ranging from highly dynamic and competitive ones to more static and uncompetitive ones. In line with this we expect to see more competitive firms on the right hand side and less competitive firms on the left-hand side in the model.
Clusters are also shaped bottom-up, from entrepreneurial action and firms implementing new strategies and business models. Such activities are not coordinated but part of the normal market mechanism – the “invisible hand” is at work. However, as a result of these actions, the larger cluster environment will either develop or decline. Decisions to invest and successful innovations help to build the cluster, whereas decisions to leave the region will push the cluster towards decline, and resources will slowly merge to other areas of the economy or become idle.
The evolution of clusters thus emanates from both deterministic forces and voluntaristic forces. In addition to this we have the constructive, more conscious forces, which will impact the development and competitiveness of the cluster. One type of constructive forces emanates from policy implementing conscious efforts to improve the microeconomic business environment of a region. Other constructive forces emanate from initiatives from actors within the cluster, including civic leaders from private firms, organizations and academia (see Figure below). Local leaders behind cluster initiatives take on a constructive role to improve the workings of the cluster or the larger regional environment. Typical objectives of such initiatives include upgrading of human resources, expansion of the cluster stimulating new firm formation and attracting new firms to the cluster, business development, and commercial collaboration such as joint export initiatives or coordinated purchasing to increase purchasing power. Other objectives include upgrading of technology and improving the overall business environment, including initiating dialogue on new regulations and upgrading the infrastructure.

Figure 3  The Funnel Model: Entrepreneurship and New Strategies

![Funnel Model: Entrepreneurship and New Strategies](image)

- Entrepreneurship
- Innovative strategies and business models
- Entry of new firms

Figure 4  The Funnel Model: Constructive Forces Shaping the Cluster
Combining the two sets of forces, both evolutionary and constructive, we can gain a better understanding of how clusters develop; whether they will increase in dynamism and size or if the will go into decline (Figure 5). The understanding of cluster dynamics in turn holds the key to understanding success of incumbent firms.
We know from our research that cluster dynamics is a highly complex process, and is best understood as a combination of evolutionary and constructive forces. However, constructors must be aware that the evolutionary forces are strong, and political vision can easily stay as visions. A large portion of humbleness is recommended as constructors roll up their sleeves (see also Recipe VII on bridging cluster gaps).
Globalization has become a reality in economic life, where it is oftentimes hard to discern any national or other boundaries. Information, ideas, financial capital and human resources are interconnected and mobile. Pollution and environmental movements are global. Political conflicts, raw materials and arms trade are global phenomena. Virus attacks on Internet are global. Financial crises are global. The multinational firms are accused of being foot-loose and without a home (see Recipe X), and many organizations organize their businesses in three shifts around the globe; Tokyo stock exchange just opened, now London is open – and when trading is about to close Nasdaq is opening for business (however, also quoting pre-market trade when Europe was awake). Globalization covers every aspect of economic, political and social activity in our society. The list of books on globalization is endless, and in 1997 Frances Cairncross wrote “The Death of Distance”.73

Global movements and interconnectedness are of course not new phenomena. The world has been connected through trade and migration for centuries, from the times of the Silk Road, slave trade to more or less voluntary mass migration to the US. Migration has shifted winemaking skills in Europe to South Africa and Australia, clock-making skills from France to Switzerland and paper-making skills from Holland to Sweden. Economic globalization took a new turn in the mid-1800s when mercantilism was replaced by a trading regime, where the UK took the lead with the repeal of the Corn Laws in 1846.74 The world was increasingly connected through telegraph and later telephone lines and international capital supported infrastructural investments across Europe and elsewhere. Technological innovations (steam, refrigeration etc.) and better infrastructure (such as canals) rapidly reduced transportation costs and allowed for world trade of fresh and frozen food products. By the 1880s large quantities of fresh butter from New Zealand

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and beef from South America was put on the fine tables in London. The Nobel brothers, running one of the world’s largest oil companies (until the Russian revolution) were drilling in Baku, and they ordered the first purpose built oil tanker, Zoroaster, in 1877. Through market integration volatile world prices were felt in every village town square in large parts of the world. And ever since, market integration movements and anti-movements have filled our newspaper front-pages, and the pendulum has swung back and forth.

The examples of economic globalization are endless. Also institutions travel; Japan imported German law in the 19th century, and the US constitution borrowed French ideas. Today, anglo-saxon models of ranking and accreditations have spread around the world. Europe has looked to the US when it comes to food and drug regulations, securities trade, antitrust and so forth. The metric system in mainland Europe is slowly making its way across the channel to the UK, but is not visible in the US. Overall physical capital, and everything that can be digitized, moves at low cost and with high speed, whereas human capital has both elements of high mobility and low mobility, and social capital is anchored in local networks of trustful relationships built up over long periods of time.
In spite of Internet being a global frictionless transmitter of data, voice, virus etc., not every place reached is part of the creation of the products, services and business models evolving around this infrastructure. We only have to mention Silicon Valley. Thus, we now turn to the other side of the coin – increased localization. Some flows are global while others are more local, but maybe even more important, as mobility and interconnectedness has increased various resources – risk capital, direct investments (FDI) controlled by multinational corporations, entrepreneurs, students, patents etc. etc. can more and more chose its location. And depending on the resource some locations are more attractive than others; for which conductor do you want to work? In which city do you want to study? In which cluster do you want to invest your capital?

The Hollywood Model

To capture the forces of globalization and localization, I began to use the Hollywood metaphor some 20 years ago. Instead of globalization crowding out localization, we argued that they go hand in hand, and my students could easily pick up the concept by thinking about modern Hollywood\textsuperscript{75}. The more global the film industry has become the more important role is played by Hollywood.

If we go back in history film production in the US came out of New York, but due to too much of mafia networks and cartel behavior some firms migrated out of the city. Some went to sunny places like Cuba (now long forgotten), Florida and the beaches around Los Angeles. Sunlight was a natural factor driving the emergence of clusters in those days. As shooting was moved inside studios, Hollywood managed the transition and kept

\textsuperscript{75} I wrote a chapter out this in a debate book "kluster.se" published with Hans Tson Söderström, Pontus Braunerhielm, Richard Friberg and Victor Norman through the SNS network (Ekonomirådet 2001).
leadership (the same later on with TV shows, digitalization and other large shifts in technology). Over the decades Hollywood took leadership of the whole value chain, even into the movie theatre business, up to a point where antitrust authorities had to put an end to it. However, in spite of this leadership there has always been a degree of healthy rivalry with New York, not the least in the area of TV shows.

So on the one hand the feature film market is highly global, and through subtitles and dubbing American movies, such as “The Godfather” with Marlon Brando from 1972 (a favorite of mine), can easily be seen around the world. Hollywood companies are also deeply involved in global markets and value chains through in-house distribution companies. Furthermore, low cost studios, advantageous locations and special scenery in places like New Zealand become part of the global Hollywood networks. Recently I visited Belfast with my friend Mats, not a place you would connect to entertainment and film, but this is one of the shooting locations for “Game of Thrones” (and yes I sat on the Iron Throne!), an extremely costly TV production by HBO; see there, for once a New York based firm in the lead! HBO has its roots back to the first US cable TV system set up in lower Manhattan in 1965. So, Game of Thrones is a US product with production chains linking into Iceland, Malta, Croatia, Northern Ireland and Morocco. Just like Nike shoes are made in China and Romania, or H&M clothes made in Turkey or Pakistan.
So now we have a view of the importance of local cluster dynamism in global markets. Let us turn to the second main ingredient in the recipe: attraction. I sometimes calls this “the Greta Garbo effect”, namely that in order for the cluster to prosper it needs a constant inflow on “oxygen” through new capital, new ideas, new talent and so on. Greta Gustafsson was a young actress in Stockholm with high ambitions. In 1925 she and director Mauritz Stiller were invited to Hollywood by Metro-Goldwyn-Mayer and the rest is history. Hollywood is an attractor on people and capital, and vice-versa if you want to become a world leading actress, stunt man or scriptwriter you better get over there. You can easily follow Hollywood from afar, but if you are not invited to the Academy Awards and other parties and clubs, you are simply not part of the action. However, don´t expect a soft ride when getting there; competition is fierce and costs in leading clusters always extremely high.
The third main component in the recipe is “global reach”. Any cluster wishing to gain world leadership must be linked to world markets and value chains in many different ways. Linkages involve hard and soft infrastructure such as widespread Internet access and wifi throughout the locality. Do you have access to an international airport? How many direct flights are offered? What is the quality of the airport(s) etc? Also, firms and organizations in the cluster need networks of subsidiaries and partners throughout the world to connect to markets.
In summary, the Hollywood model consists of three linked phenomena:

1. A local cluster representing a hub for strategy, financing and other related services as well as core networks. In line with traditional Marshallian theory specialized upstream and downstream firms emerge, and labor becomes more advanced and specialized over time.
2. Attraction on resources such as capital, human resources, technologies etc. from outside
3. A global reach with the products created inside the cluster
To analyze globalization and localization as two complementing phenomena hopefully this recipe will give you some guidance. Now let us turn to the Multinational Corporation (MNC), firms that transcend borders and have access to global value chains and clusters in every possible corner of the world.
X The MHC Model

Ingredients

✓ Multinational Corporations (MNC)
✓ Global and Local Forces
✓ Global organization

Introduction
Today most goods, services and factors of production, including capital, technology and skilled people, face global competition. Globalization has allowed companies to slice up value chains, where materials, components and products crisscross world markets. A steel leg for a chair might start in Sweden, go to the UK for assembly, back to central warehousing in Sweden, and then back to the UK to be sold in the store. International transactions are carried out through efficient export/import markets, but a substantial part of those global flows is managed by multinational corporations (MNC). MNCs control networks of subsidiaries and manage webs of alliance partners and contract partners across the world. Thus, the modern MNC is entangled in global value chains, with both in-house units and external partners carrying out headquarter functions (strategy, legal, finance, HR, PR, communication, branding); R&D, design and engineering; manufacturing (components, subsystems, final products) and assembly/packaging; procurement, logistics and warehousing; and sales and service operations in multiple locations. Some units are highly integrated into a global whole, whereas other units are given considerable autonomy. Sometimes, subsidiary units controlling strategic resources and capabilities such as headquarter functions and/or R&D, are given a status of “centers of excellence”\(^\text{76}\), where subsidiaries take on, or are given, roles outside the confines of the local market. Such center mandates are typically driven by both internal and external factors.

Parallel to increased globalization we have also witnessed a process leading to an increasingly strategic role for particular regional/local environments, i.e. world-class clusters (see Recipe IX). Clusters have become hotspots for innovation and economic prosperity. In a world of global flows the “Hollywoods” of the world have increased their attraction on mobile resources – including talented people (students, researchers,

entrepreneurs, inventors and other skilled people), technologies/patents, venture capital, portfolio investments, and, not the least, FDI from MNCs. The more resources and capabilities can move around the globe, the more specialized and differentiated we expect the world to become. Whereas certain regions and clusters will erode in this process, others will attract resources, leading to continued cluster growth and competitiveness. These structural changes create challenges for the modern MNC, which must handle both globalization and localization forces, in order to stay on the competitive edge.

The modern MNC is often conceptualized as a collection of globally dispersed units possessing distinctive competences and knowledge. We would argue that one of the main strategic challenges facing top management in today’s MNCs, is to configure and coordinate resources and competencies in such a way that the efficiency of global markets is combined with innovativeness and knowledge creation emanating from world leading clusters. Important strategic and organizational choices include: should more strategic subsidiary units be tightly interconnected or should the MNC allow for independent functional centers of excellence or even multiple home bases? Can the global firm tap capabilities and technologies from afar or must the MNC invest (e.g. through M&A) to become an insider in leading clusters? And what are the organizational implications of increased insiderization into host clusters – will fully embedded units fit into a globally integrated MNC – or is maybe a dilemma emerging?

With parallel globalization and localization forces at play, MNCs face numerous strategic and organizational choices. MNCs typically benefit from globalization, selling their products worldwide and utilizing standardized markets for factors of production to enhance overall efficiency of the firm. In addition to enhancing economies of scale, MNCs utilize global markets to access standardized low-cost labor through offshoring, and sourcing of codified technology (through licensing and other agreements), financial capital, and other tradable resources. Localization forces, on the other hand, seem to be more challenging to corporate management. Tapping locally bound capabilities and gaining access to local networks from afar pose many challenges to an outsider, but can be selectively tapped, for example through scanning units in host clusters. Some argue that MNCs cannot just tap selectively but have the ability to tap any resource or capability in every location. However, as we will develop further below, an insider/outsider dilemma can arise for the MNC, utilizing global markets for innovation purposes. The more critical technologies and skills are often not traded globally for competitive reasons, and cannot be easily tapped from afar, due to their embeddedness and tacit nature. In order to circumvent these problems MNCs can choose to build insider positions in clusters through long-term green-field investment or M&A. However, with increased “insiderization” of the subsidiary unit, controlling strategic and often unique resources and capabilities within the MNC, a counterforce of “outsiderization” is likely to emerge.

In this recipe we will argue that the popular argument that capabilities, knowledge and technology are now “global goods”, and that therefore innovation is a global process, is seriously flawed. Innovation processes should not be equated with global value chains of

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standardized components, goods and services. In other words, the analysis of MNCs and their levels of efficiency and competitiveness should be separated from their innovation processes and degree of innovativeness. The recipe will propose a general model of the global MNC, encompassing both globalization and localization aspects; the multi-home based corporation (MHC). The MHC solution, we argue, can mitigate the dilemma of increased insiderization in host clusters, leading to increased outsiderization of subsidiary units within the overall MNC.

Four Strategy Elements Facing the MNC and Three Solutions

In a world of increased competitive pressures, MNCs need not only improve their operational efficiencies and cost position, i.e. their competitiveness, but also to sustain and enhance their innovativeness. Global markets are central for MNCs cost position, while insider positions in clusters are central for their innovation processes, especially in open innovation processes where links to external actors, including users, are crucial. In the classic economics sense, firms are competitive when they face relatively lower input costs (land, energy, taxes, wages etc.) compared to competitors in other nations. With this view, government subsidies, favorable access to natural endowments and currency depreciation make indigenous firms more competitive. While such advantages are important to MNCs, increased competitiveness only constitutes a minor part of the fundamentals of sustaining competitive advantage. Sustained competitive advantage is foremost built on the firm’s ability to continuously upgrade and create new products and processes to meet changes in demand and technology. Therefore MNCs must take both competitiveness and innovativeness into account as they configure and coordinate units around the world.

If we combine the two dimensions of efficiency seeking and innovation seeking strategies, and global and local outlooks, as outlined above, we receive a matrix with four corners (see Figure 1) each representing a critical strategy element. The upper left-hand corner involves innovativeness emanating from clusters. The upper right-hand corner focuses on innovation as a global process, often referred to as the transnational solution, combining resources and capabilities from several locations. Here, tapping of resources and capabilities in host locations is not seen to pose severe problems. The lower left-hand corner covers strategies of cost efficiency with emphasis on the home market (often true for MNCs from large home markets), and the lower right-hand corner covers global efficiency and global cost leadership.
MNCs tend to combine different elements of the matrix, and we will point to three important base line models, each combining two elements. Two of these models are found in the mainstream literature on MNCs, and the third is being identified as a possible emergent model.

**The Multi-Domestic Corporation**

Leading MNCs from small home countries have been very successful in achieving high levels of competitiveness through global markets. By selling their products and systems across international markets, they have been able to exploit advantages of scale comparable to firms from larger markets. Gradually, MNCs from smaller countries managed to achieve further gains in cost-effectiveness by establishing assembly and production units in larger markets, sometimes also for reasons of protectionism or government demands. Instead of carrying one flag these MNCs carry many flags and have many “homes”. The strategy has been characterized as multi-domestic where the MNC seek to combine efficiencies of global and local markets. In manufacturing industries, core components and sub-systems are produced at a global scale in few locations, whereas assembly and local adaptation is done on a country-by-country basis. Global outsourcing of products and components has also been central feature of multi-domestic MNCs.
The Transnational Corporation (TNC)
The transnational model came up as an answer to increased globalization, and with the advent of more sophisticated MNCs in the 1980s, with highly dispersed networks of subsidiaries. A central feature of the model is that it not only involves global efficiency-seeking but also global innovation and tapping for global reach. The primary concern of the TNC strategy is how to foster the development and integration of internationally dispersed resources and capabilities on a worldwide scale. Exactly how TNCs should go about learning and creating new practices on a global scale was mainly theoretically derived, underpinned by a few case studies.

In spite of its intuitive attractiveness, we would argue that transnational strategies have proven problematic. Attempts within TNCs to create new solutions through global teams have turned out to be miscalculations as a result of high costs and major delays. To learn and share across the globe is appealing, but it involves large costs and organizational barriers.

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We would argue that a majority of International Business scholars today are pointing to advantages of global strategies and structures akin to the transnational model. Even though we see few studies of these globally linked innovators, many scholars argue that it is only a matter of time and sophistication of the MNC. However, a number of traditionally under-emphasized factors should be considered when assessing the degree to which global innovation is or may become a major force in the MNC. First, introduction of internationally integrated innovation projects require implementation of systems that reward involvement in projects that are temporary and fall in-between national organizational entities. These systems seem hard to come by spontaneously, and many managers we have met testify that involvement in temporary projects without an organizational home does not help individual careers. Second, the cross-border context also adds complexity in that dispersed units tend to have their own identity and understanding of what constitutes an effective development process. Unless projects that cut across different national units are carried out with regular frequency, these differences will continue to have a negative effect on inter-unit collaboration and the effectiveness of cross-border innovation. Third, an important part of local knowledge creation and innovation is context dependent and therefore the absorptive capacity of other units of the MNC is limited, and fourth, information processing in the modern multinational is not necessarily based on objective data, and thus the difficulties involved in agreeing of what skills reside where, and lack of willingness to share it among subsidiaries (the NIH syndrome), will hamper any attempts of global innovation.80

The Multi Home-Based Corporation (MHC)
The MHC model builds on the notion that innovation is a highly complex and localized process, and that corporate units (both local firms and MNC subsidiaries) in various ways are entangled within their local clusters. Clusters range from globally competitive to more regional ones, and for MNCs it is critical to have major operations in world leading clusters, in their fields of technology. The model also builds on the notion that in order to stay competitive, it is not enough to assign a center of excellence status along functional lines to particular subsidiaries. The MHC tends to co-locate strategic resources (divisional HQ functions, divisional R&D, design, manufacturing etc.) into home bases. Just as firms once emerged in their home market, building a home base for further expansion, the MHC model takes this one level further and combines the MNC into a set of rather autonomous divisional home bases. We would hypothesize that this model is more attractive for MNCs from smaller home countries, where the original home base (i.e. home market) never had such a strong influence.

The strategy for success in an MHC is to both ensure innovativeness through insider positions in one or more leading clusters, and to ensure efficiency by means of a global strategy for production, sourcing and sales (Figure 4). As most MNCs are diversified to a certain degree, each line of business needs to find its home base. These home bases become more or less independent centers, developing their own strategies and organizational models. The home base unit (with business headquarters, R&D, design and in manufacturing industries core manufacturing operations) plays a global role. In addition, organizational resources, including sales subsidiaries and local partners involved in market penetration, are spread around the world to ensure maximum competitiveness through global efficiency and scale.

The MHC is a distinct model implying a certain set of strategic and organizational choices. It is different from the multi-domestic model in that it emphasizes the role of innovation. It is also different from the traditional home-country MNC as it allows for different home bases, not necessarily the original home country. It is also different from the transnational model in that it downplays globally linked innovation projects and intense skill transfers and cross-country combinations. Instead of building more and more complex organizational forms, in order to integrate complicated processes of innovation around the world, the MHC model puts emphasis on simple organizational structures, with clear home bases for each line of business, and a strict hierarchy between strategic activities critical for innovativeness (home base) and other activities critical for enhanced efficiency and competitiveness (sales subsidiaries and externally contracted partners). If there is a need for interaction between home bases, for technological or customer support reasons, the bases can be organized in such a way that dependencies become sequential, where each base has a clear mandate, e.g. for a part of the value chain. Simple interfaces are important in the MHC model to ensure efficient hand-off of the baton.

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It is often argued that MNCs invest abroad as a means to tap knowledge from host business contexts, and that the competitive success of the MNC can be explained by its ability to accumulate and integrate knowledge from different parts of the world.\textsuperscript{82} Thus, one would argue that with increased tapping of world-leading clusters, the modern MNC would not need any particular home bases. There are many studies showing increased levels of foreign patenting. That could be interpreted as knowledge creation in the MNC now being global. However, nothing is said whether 1) the new knowledge was later successfully exploited throughout the MNC, and 2) the new knowledge was a result from cross-border innovation and learning. If the answer to these two questions are negative, foreign patenting can be interpreted as a result of home bases, particularly if there is little or no overlap in the patenting (i.e. technologies) across subsidiary units.

**Solving a Dilemma**
The main argument for configuring and coordinating the MNC along the MHC model is to solve an apparent dilemma. Take the following example. A multinational firm is entering a foreign market and has built some local sales and service capabilities. The subsidiary unit has a clear target of penetrating the market. Technology and strategic resources reside elsewhere in the MNC. In the graph below we would find this unit in the lower right-hand corner (Figure 5), depicted as an outsider in the host cluster and insider within corporation.
The outsider position in the host business environment means that the subsidiary and its staff are not part of core networks (social clubs and informal networks etc.), and are less likely to be involved in innovation processes in the host cluster. For example, a European sales subsidiary in Tokyo of a foreign car manufacturer is not at all integrated into the automotive clusters of Japan, including the famous “Toyota City”. Over time, many of the world’s leading MNCs have built insider positions across a range of countries; either through long-term Greenfield investments or through M&A (Figure 6). It is common in high technology areas that global corporations acquire smaller companies in leading clusters such as Silicon Valley to access new technology and new customers.
So far this seems rather unproblematic. Through increased commitment in the host country the MNC builds more of an insider position, opening up for tapping of host technology and skills. To be an insider in a host cluster is essential to enjoy spillovers – and the MNC will end up with embedded subsidiaries controlling unique capabilities and resources. However, we argue that subsidiary units possessing unique technologies, resources and capabilities are likely to build semi-autonomous positions within the corporation (see the four arguments against globally linked innovation processes in conjunction with the TNC model discussed above). To share and link units in various ways becomes more problematic and often involves increased coordination costs. Thus, we expect such embedded subsidiary units to end up in the upper left-hand corner rather than the sought after upper right-hand corner (Figure 7).
IBM can be seen as an example of what we mean by the MHC model. When the company was more of a technology and product firm, some technologies and products were based in the US (mainframes), whereas others were concentrated in China (laptops). The laptop business was sold out to Chinese Lenovo in 2005. Now, as a software and service company, IBM has several bases, one of which is in China. The IBM China Research Laboratory in Zhongguancun Software Park, in Beijing’s academic cluster, specializes in speech and language technologies and cross-border e-business solutions for the whole of IBM.

In cases involving large mergers (Astra merging with Zeneca, Merck & Co. with Schering-Plough, Siemens with Nokia in the Telecom network business, Microsoft and Nokia in the handset business etc.), often leads to a duplication of home bases (R&D centers, regional headquarter units etc). With the MHC model we expect to see that duplication will evade when certain units, often through a process of internal competition, become stronger and other bases weaker. Product and technology mandates are shifted around to facilitate simplification and leadership transferred to one base. Finally, we expect the MHC model to be more common in industries where there are clear world leading clusters, i.e. “Hollywoods”, where the MHC model helps to solve the insider-outsider dilemma presented above. There are of course advantages and disadvantages with such a strategy and organizational model, but in the world of global competition facing MNC executives today, we would argue that this model has a lot to offer in both ensuring high levels of efficiency and high levels of innovativeness. Maybe MNCs from small home countries, with a less dominating original home base, have been more prone to go towards the MHC model, and could thus act as inspiring examples.
MNC need to innovate to survive and prosper, and in the light of this recipe, how can global firms handle the apparent need to both build on superior market contacts and internal resources concentrated to home bases? This is the question we turn to in our last Recipe XI.
Ingredients

- Multinational Corporations (MNC)
- Product development and innovation
- Global sensing
- Global commercialization
- Home base

During the past couple of decades there has been a large amount of literature dealing with cross-border product development and innovation processes in the multinational corporation (MNC). Mainstream literature has argued that geographically dispersed innovation activities now allow global firms to tap into leading clusters in every corner of the world, and leverage internal resources and capabilities on a global scale, resulting in unique advantages from multinationality, hard to match by local firms. However, our experience from talking to managers of MNCs, and through our research in the field, is that product development processes inside MNCs contains many more facets than just being global.

First, to engage in global product development can mean many different things; are such strategic resources and capabilities spread all over the globe? Are they linked in any important ways? And if so in what ways are internal subsidiaries and external partners involved in the innovation process – sequentially, pooled or in a reciprocal fashion? And second, if critical resources and capabilities are concentrated to a few “bases”, are these bases unique within the organization (what we referred to as home bases in Recipe X), complementing or competing? The issues and questions are manifold and it is my hope that this recipe will be of help when planning your strategy for product development in your global organization.

The Nature of the Product Development Process

To sort out the complexities involved in product development processes in global organizations, we must first get a grip on the innovation process as such. Three

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interrelated factors are traditionally associated with innovation processes in firms: 1) a high degree of technological and economic uncertainty, 2) a need for face-to-face exchange of information and tacit knowledge, and 3) interaction across functions within the firm and with outside firms and organizations (e.g. with research organizations, see Recipe VII) in the development process. Both technological and economic uncertainty are reduced by means of a trial-and-error and learning-by-doing processes. It involves frequent iterations about possible technical solutions and designs, and depends on the interaction between people involved in the product development efforts. Recurrent face-to-face exchange and creation of (often tacit) knowledge and “language” also provides an important foundation for communication in more explicit forms such as documents, drawings and blueprints. Part of the development work proceeds through interaction between the R&D, marketing and production departments (that can be more or less dispersed geographically), while other parts involve exchange and collaboration with external actors in the cluster, such as suppliers or customers. External knowledge is often critical. Here, old and well-established relationships and bonds form a foundation for creation and exchange of technological and related commercial knowledge, through informal and formal meetings, joint testing or common R&D projects. These relationships often survive from one generation of managers and engineers to another.

So with this in mind how should we plan for successful product development processes in our global organization?

In this recipe we will sort out how to combine your global networks of subsidiaries and partners with your strategic in-house resources for product development. The recipe explicitly addresses a need to strike a balance between local and global resources and influences in your organization. As a general rule global influences are critical during the initial sensing and concluding commercialization stages, whereas a local focus to a home base should take on a much more prominent role during the development stage (e.g. when specifying a platform), when the need for face-to-face communication in trustful relationships – inside and outside the organization – and continuous trial-and-error is at a peak.

The suggested model of product development indicates an “hourglass” profile, with a wide top and bottom, and a much narrower waist in terms of the geographical spread of resources and capabilities over the product development process.

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In the early phases many concepts and ideas are floating around at different levels and parts of the organization, many of which are competing. At some point the product development work needs to be focused. More strategic functions residing at headquarters (such as R&D departments in more traditional manufacturing industries) should now take the lead and work out platform specifications and develop beta versions. This is a very sensitive part of the product development process and should be kept close to the firm (obviously not the case with open-source software). As the product/business model has found its shape it is time to move over to the next phase – testing and commercialization. Again the geographical scope should naturally be widened, involving sales subsidiaries, distribution partners and joint testing (B-2-B and B-2-C) with customers and users around the world. At some point the product or business model is formally launched – for some firms at a single point in time and for others in a sequential fashion market by market depending on the circumstances.

The shape of the hourglass can vary; some have very thin waistlines (only one home base per product line/area of technology), and some have thin top shapes, where sensing and input in the early phases emanate only from the home base cluster, i.e. something of a flask shape. In Figure 2 we present three different models and based on our experience this Recipe clearly recommends the hourglass model. The tumbler model
using both internally and externally dispersed resources throughout the product development process, I believe, is much too costly and will lead to unclear organizational roles within the MNC.

**Figure 2  Four Different Models of Organizing Product Development in a Global Firm**

- **External Competencies**
  - Concentrated
  - Dispersed

- **Internal Competencies**
  - Concentrated
  - Dispersed

- **Concentrated (Cluster)**
  - Hourglass
  - Flask

- **Dispersed**
  - Tumbler
Do you wrestle with issues such as:

- Why is it that firms often seem “stuck” on a certain strategy? Why are we stuck? What are the opportunities to shift strategy?

- How should I go about developing an entry strategy into a new product market or a new geographical market?

- How can I grasp global competition? Is competition in our industry local, or multi-domestic or global? What can change that in the near future?

- Why do firms with a global strategy succeed or fail the in the light of industry competition?

- Why do firms based in certain business environments develop world leading products and services, while firms based in other business environments do not?

- What is the role – if any – of local clusters in today’s global economy and global markets and value chains?

- Why are not all industry agglomerations as dynamic as Silicon Valley? What does it take to tap into a leading cluster?

- How can we improve the dynamics of our cluster? What is the value of engaging in improving our cluster?

- How should we organize and specialize different subsidiary units in our global corporation?

- How should we organize product development in our global firm?

_About this cookbook_

*Use the Recipes and get inspiration and hands-on support!*