

# RETROSPECTIVE REFLECTIONS ON PROFESSIONAL EXPERIENCES AND CAREER STEPS



John 88

Alpha en Omega

Lithography 25/31 81 x 81

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## 1. The reason for this document

I took the initiative to write this document after having been inspired by a retrospective report, written by Mats Lundeberg, a former professor in Information Analysis, who described the development of his profession and his career. Mats was one of the pioneer teachers in the brand-new field of Computer Sciences and Information Analysis, that started 1966 in at Stockholm Royal Technical Institute and Stockholm University. I myself was one of the first fifty students at the time. Regrettably I could not finish this study because of my removal to another part of Sweden which meant that I switched to Business Economics.<sup>1</sup>

## 2. Similarities and differences

I found some interesting parallels between Lundeberg's career and my own. One big difference, though, is that Mats during his whole life stayed being a scientist and kept to the rules of that profession and that I lived in 'the free world' and did not need to keep to the strict rules of science. For instance, I did not need to provide evidence for everything I wanted to express. I could trust on my intuition and even elaborate on non-scientific models. They just needed to fit in in my reasoning and own a kind of 'face value', such that they could help me effectively express my thoughts and insights.<sup>2</sup> This gave me more freedom in my explorative thinking than a scientist would have.

The most significant similarities between Lundeberg's voyage and mine lie in the processes:

- You start focusing on an unexplored professional field and, in order to dig deeper into it, you will, in one way or another 'freeze' the context: you take it for granted, including the so called 'user need' the main reason for elaborating on how to deliver value. But when you're done with your analysis and prepared to deliver, you start to discover that your user has no clear picture of his need.
- In your job to meet the requirements you have asked the questions **What** and the **How**. The questions **Why** and **For what Purpose** you have, up till then, only asked downwards and not upwards.
- And now you understand that the user context needs help in defining its needs; and you finally start to analyse in the context system and do the job of your client. Until you get to the point of delivering there and you discover that the needs over the 'parent context' are unclear as well, and so on.

There is a big difference between being a scientist and being a 'free man'. The scientist does not take over responsibility, but a free man can: just jump into the context system and take charge. When my bosses or customers discovered that I understood their system and their needs even better than they did, they asked me to assist them, either as a temporary interim manager, or as their close assistant (second man in charge, COO, or Machiavellian advisor). In such roles you often had great indirect influence, which gave you the power to realize the necessary changes. A similarity, of course, between Lundeberg's and my career was that we both took the consequences of our findings and started to analyse in the context system. Which meant that Professor Lundeberg also switched to the next level context: from being a Computer Sciences professor to being a professor Organizational Development at the Stockholm School of Economics.

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<sup>1</sup> You can read more about my career steps on the web page <https://www.ld-toolbox.com/en/-/ldpes-founder-23976640>

<sup>2</sup> Some examples: the non-scientific theory of Hersey & Blanchard on Situational Management and the Gaia theory (see for instance *Peter Russell: The Global Brain – Speculations on the Evolutionary Leap to Planetary Consciousness*), but also many of the 'eureka' publications with models that under a given period seem to be groundbreaking, but in time prove to be a management fad ('a term used to characterize a change in philosophy or operations implemented by a business or institution')

### 3. What happened to IT?

#### *Period 1965-2000 (the initial 35 years)*

Mats Lundeberg and I speak about the same period: from mid sixties until 2020 (more than 50 years). In the early days we used different words for the field, while most of the different IT-related professions did not exist yet. But one thing Mats and I have in common: we were there from the early beginning !

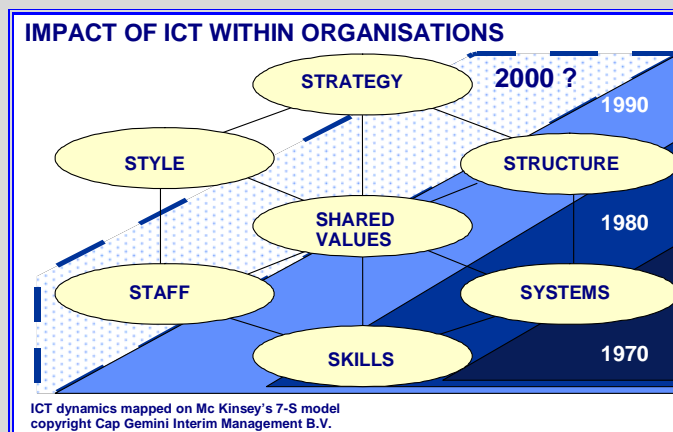
I described in my book<sup>3</sup> (year 2000) how I have experienced the importance of IT for organizations and pictured the application of IT in organizations as follows:

Investments in ICT are not restricted to the structural aspects of the internal organisation: they now have major consequences for the organisation's external relationships as well (which, as I have said, are often by no means as external as they used to be). In some sectors ICT is thus already a component of strategic importance. Before considering the consequences of this, however, we need to step back in time to the era when ICT was not yet a crucial element in society and organisations (and in the relationships between them). A brief look at the historical development of ICT and its effects on organisations—and the organisation of business processes—is necessary if we are to get to the bottom of today's challenges. For this excursion I shall employ McKinsey's famous 7S model, used a lot by change managers to plot the various facets and interrelationships of an organisation. The 7S model has been criticised in the past, particularly on account of its static nature.

If we look at the increasing effect of ICT on the various facets of an organisation, however, we see a clear progression between the various S's (see the picture).

In the 1970s information technology (IT) was largely synonymous with the "mechanisation" of administrative processes (S for systems):

Accounts and Wages Departments were particularly affected by IT. In the 1980s organisations felt an increasing need to integrate systems that had been developed separately: it was a serious problem that the concept of an employee was defined differently for Payroll purposes than for Personnel purposes. Organisations reacted against the "island computerisation" that had been introduced over the previous years and tried to achieve a more integrated approach with umbrella IT plans. In the 1990s there was growing awareness that ICT offered great scope for dramatically improving business operations: to put it another way, to the interest that existed in the application of ICT was added a new interest in the way in which it could be embedded in business processes. Business Process Redesign/Reengineering (BPR) was the new magic word, and ICT became extremely important to the development of organisations. Over the next decade ICT will undoubtedly penetrate even further into the heart of organisations. The superseding of the old IT by the new acronym ICT indicates what is going on: the increased integration of information technology and communications technology will contribute significantly to the creation of "virtual organisations" and complete "virtual chains".



Today, anno 2020, we know that my vision became real and that all organizational functions now are very depending on IT. Or, in fact, the other way around: IT has become the kernel in any organisation.

It is a good thing that some people try to focus more on the importance of the human factor and tell us that the development must be controlled with the human needs in mind.

Human flexibility and creativity will still be needed for years to come.<sup>4</sup>

<sup>3</sup> Even if my publication *Management Sourcing, een strategisch vraagstuk in een veranderende markt*, 2000, *Scriptum Management* was written in Dutch and I did not have the intention to bring it out in English. I was wise enough to have an English copy of the text.

<sup>4</sup> An interesting example of this is the book *Humanification, go digital, stay human*, written by my coachee Christian Kromme. The book was published in April 2017, some weeks after Christian had started with the LDT-based Career Counselling program. After the publication of *Humanification* Christian became world famous. He is a popular keynote

In my publication, I also warn for an overfocus on technology. You may compare it to the current discussions on Artificial Intelligence, in which I see an unhealthy overfocus on the 'Algorithmizing'.

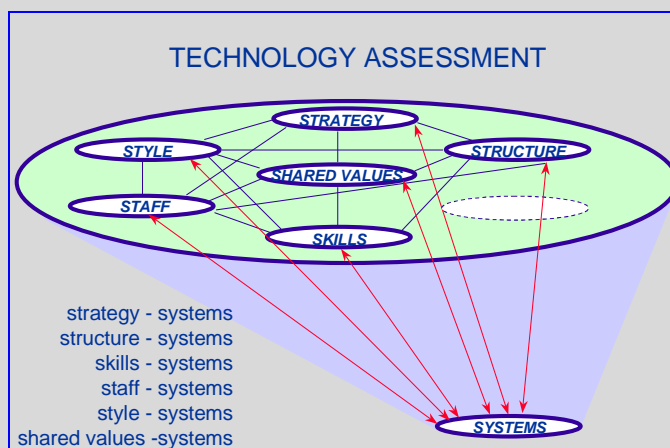
In my publication (in year 2000) I also warned for the risks of overestimating the competences and contribution of system developers.

The lightning-fast development of ICT (the growth of e-commerce on the Internet is an obvious example) is forcing organisations to push through more and more changes increasingly quickly. The changes in turn call for more and more technology and technological innovation in the organisation. Caught up in the whirlwind, organisations often underestimate the extent to which an organisation's systems are intertwined (sometimes invisibly) with all the other organisational aspects and the operation as a whole. This failure to appreciate the cross-linkages in the organisation is a constant source of problems in the increasingly common change processes (see the picture).

This is what makes technology assessment — deciding what physical ICT systems the organisation needs and how people in the organisation should deal with them — a much more complicated affair than just replacing the parts of a machine.

When trying to solve the organisational problems there is a danger that the IT people will continue to look at them through their IT spectacles and see technology as being at the heart of all change.

There is also the danger that general management will evade the increasing entanglement of organisational issues with ICT and hive off important issues to the specialists. Anyone managing change processes needs to have more than just technological know-how; too much focus on such know-how is not the right basis.



Too much expertise in a particular field can even be a handicap. Nor is mere knowledge of the market, the running of the business and the product or service—or any other kind of knowledge—enough. Nowadays a change process of any importance in an organisation affects all aspects, especially the way in which people function.

The interface between management and ICT is a crucial one in virtually any change and any innovation initiative and controlling activities here is an increasingly important area of concern for senior management.

### **Period 2000-2020 (the next 20 years)**

What happened to IT in the twenty year after the publication of my book, I will describe from the perspective of organizational development.

I will do that by referring to my vision on leadership in a changing world.<sup>5</sup>

#### **Leadership in a changing world**

##### **Leadership and the quality of leadership**

Leadership does not just refer to the person or persons at the top of the organisation.

Leadership is much broader and more widespread, and it is multi-dimensional.

The quality of leadership demonstrates itself in different ways:

- At the individual level through the behaviour of every individual leader.
- At the team level through the successfulness of management teams.
- At the organisational level by the leadership culture and the core values of the organisation.

speaker all around the world. If you have become curious, you can download your free copy of the electronic version of Humanification from his website: <https://www.ld-toolbox.com/en/innovation-change/the-nature-of-innovation-36476944>

<sup>5</sup> See the LDpe website: <https://www.ld-toolbox.com/en/-/our-vision-about-leadership-24492298>



### Professional leaders

Leaders are not just the people with a formal leader's role.

Also leading professionals (for instance leaders in sales, account development, organisational change, program- and project management, leading consultants, etc.) have a strong influence in shaping the leadership culture. This happens in a natural way when leaders personally set the standard, being followed by the people around them, by setting the living example and by the way in which they inspire people, both inside and outside the organisation. These leaders create the professional image of the organisation in its markets.

### Good leadership

The developments that have led to a global economic crisis have caused a lot of doubt about the honesty and integrity of leaders and to suspiciousness about what drives them, their greed or their passion for the good of the organization and the society. Only when their cause is sound, we should call them true leaders.

Besides leaders should:

- inspire the people in the organization.
- ensure that the organization is sensitive to its surroundings, adaptive and cohesive.
- ensure that those concerned have a strong feeling of identity, an identity they are proud of.
- ensure that the organization is tolerant: there is room for variety, expressiveness, creativity and entrepreneurship.
- create preconditions for effective communication within the organisation and ensure that the 'language spoken within the organization' is consistent and coherent.
- develop and implement clear criteria for identifying, assessing, deploying, developing and supporting talent.

But also this: leaders are human, also good leaders make mistakes and can judge wrongly, but they are eager to learn from mistakes and appreciate the help from their colleagues and subordinates.

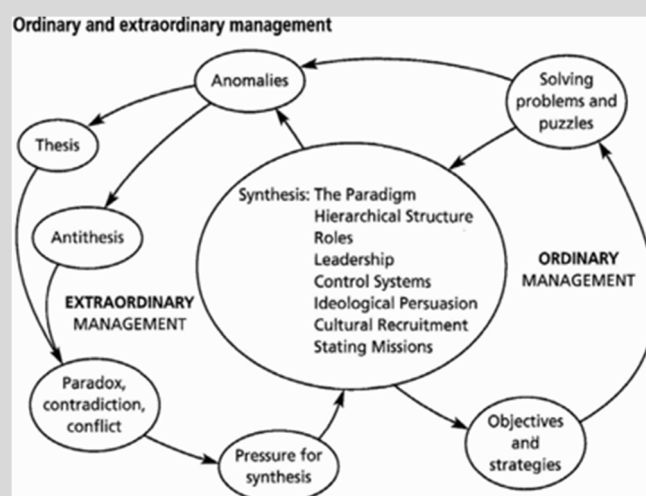
### Management focus versus Strategy focus

Leaders have to manage, i.e. control the organizational processes. Management is an integral part of leadership.

In his publication about Strategic Management\*) Ralph Stacey makes a difference between Ordinary Management and Extraordinary Management. With Ordinary Management he means the management focus on the ongoing production and delivery process, and with Extraordinary Management he means the Strategy cycle of adopting the changing environment and reshape the enterprise.

One of the effects of the revolutionary impact of the internet society is *that the frequency of the strategy cycle has increased from once every 5 year 20 years ago, until a continuous occurrence in today's evolving developments.*

\*) Ralph D Stacey, Strategic Management & Organizational Dynamics, Financial Times Management 1993, 1996, ISBN: 0 273 61375 8



### Brains versus Heart, Rational versus Emotional

In their struggle to survive, organizations and their managers have become more result focused. The pursue, to measure and quantify progress and results creates a tendency to accentuate the measurable, material part, while *short term considerations tend to overshadow the immaterial, visionary, emotional and long term topics of leadership.*

Leaders have become more rational and *'brains tend to dominate the heart'*.

Many executive training programs try to emphasize the need for the brains-heart balance, while stressing for more reflection about the leader's role, his interaction with the people around him, and his anticipation on the organizational change in its rapidly developing environment.

The good thing about such training programs is that they take the individual apart, separated from the hectic of the operations and by that create an environment that promotes reflection, but the bad thing is that when the training program is over, the leader gets immersed again in the stir of the day-to-day's business and many times forget about the lessons (to be) learned.

## Future Developments: Continuous Innovations

Today's IT developments are an integral part of organizational development, which is an integral part of continuous innovation.

### The importance of Innovation for the development of the world and societies

#### How innovation emerges

Innovation is the combining and recombining of ideas, when people meet and exchange ideas.

Although one would wish to start innovation by 'pushing a button' or even deliberately design innovation, it is not that easy. Innovation seldom happens top-down planned but it comes bottom-up emerged from the interaction of ordinary people. It is the result of human action, not of human design, created by trial and error."<sup>6</sup>

I am fully convinced that innovation mainly is a product of human interaction. And, important enough to say, diversity may be one of the most important ingredients when innovation leads to new ideas.

#### Better preconditions for innovation because of diversity

Every person will be, based on his/her personality, be biased, when considering solutions for a challenging problem; different personalities tend to arrive at different solution alternatives. Only teams that are able to conduct a thorough dialogue on the pro's and cons of the extremes of a paradox (or a complex problem) will be qualified to find the innovative solution alternatives.

Because of a deeper dialogue on paradoxical different solution directions, an inventory of the pros en cons of these alternative directions can systematically be made in this way.

### Speculations on how we can organize for continuous innovation

The life-cycle of products and services



When we discuss innovation, we tend to think that innovation is something extraordinary, outside the scope of how organisation's must be organised.

But today we witness how many organisations suffer and even go bankrupt when they persist in running their business 'as usual', even if the lifetime of their products and services clearly runs out.

Above we referred to Stacey's model of Ordinary and Extraordinary Management in which he describes the Ordinary Management cycle as running the operational process of the business and Extraordinary Management as the strategic cycle of innovation and change.

**We stated that 'One of the effects of the revolutionary impact of the internet society is that the frequency of the strategy cycle has increased from once every 5 year twenty years ago, until a continuous occurrence in today's evolving developments.'**

Still today, most governance systems, KPI's (Key Performance Indicators) and appraisal systems (including bonuses for management) refer solely to the Ordinary Management cycle.

In recent literature, three types of innovation (three horizons) have been defined and, below, I have plotted them in Stacey's Extraordinary Management cycle.

<sup>6</sup> Matt Ridley, 2015, *the Evolution of Everything. How new ideas emerge.*

Horizon 1:  
Incremental Innovation  
lengthens the existing S-curve of the company and its products and services.

Horizon 2:  
Building new Business  
Extending business and positioning in changing markets by newly developed products and services.

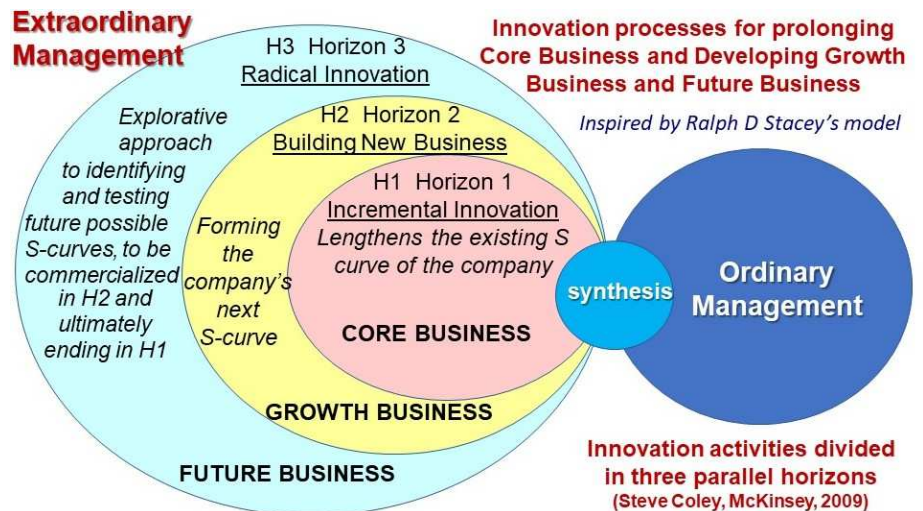
Horizon 3:  
Radical, Disruptive Innovation  
Identifying new development possibilities and creating new markets, based on new technological development and evolving consumer behaviour.

An organization with ambitions to keep up with developments and wishing to be or become an important player in the current and future markets, will need to organize for it. Besides having a smooth, functioning ('agile' and 'lean') Ordinary Management, it needs to organize its Extra-Ordinary Management.

This organization needs to continuously develop its innovation competences.

The innovation process will be organized as projects, and here it is important to compose teams in a clever way, with the right type of competent people.

My company, LDpe, focuses on the design of successful innovation teams, enabled by the unique Leadership Development Toolbox (LDT).



#### IMPORTANT INNOVATION CAPABILITIES - Jaruzelski & Dehoff 2010

<b>IDEATION</b>	<ul style="list-style-type: none"> <li>• Supplier and distributor engagement in ideation process</li> <li>• Independent competitive insight from the marketplace</li> <li>• Open innovation/capturing ideas at any point in the process</li> <li>• Detailed understanding of emerging technologies and trends</li> <li>• Deep consumer and customer insights and analytics</li> </ul>
<b>PROJECT SELECTION</b>	<ul style="list-style-type: none"> <li>• Strategic disruption decision-making and transition plan</li> <li>• Technical risk assessment/management</li> <li>• Rigorous decision-making around portfolio trade-offs</li> <li>• Project resource requirement forecasting and planning</li> <li>• Ongoing assessment of market potential</li> </ul>
<b>PRODUCT DEVELOPMENT</b>	<ul style="list-style-type: none"> <li>• Reverse engineering</li> <li>• Supplier-partner engagement in product development</li> <li>• Design for specific goals</li> <li>• Product-platform management</li> <li>• Engagement with customers to prove real-world feasibility</li> </ul>
<b>COMMERCIALIZATION</b>	<ul style="list-style-type: none"> <li>• Diverse user-group management</li> <li>• Production ramp-up</li> <li>• Regulatory/government relationship management</li> <li>• Global enterprise-wide product launch</li> <li>• Product life-cycle management</li> <li>• Pilot-user selection/controlled rollouts</li> </ul>

## 4. My career in retrospective

Generally, I see my professional career as a series of 10-years periods, starting with a big fundamental step of change (often combined with a paradigm shift) and under each of the periods some three or four steps, most often changes of roles or changes of responsibility.

Period 1943 – 1963	Early youth, adolescence and education in Amsterdam, the Netherlands
Period 1964 – 1973	Career start in Sweden, pioneer in IT, Programmer, systems designer, Project leader and Manager Systems Development
Period 1973 – 1983	Manager Systems Development, IT manager, Trouble-shooter, Internal Interim Manager (CxO), Leader Organizational Change
Period 1983 – 1993	Branch Manager Capgemini, Division Director, Manager of Change in large mergers and organizational change processes
Period 1993 – 1996	Leader for Capgemini's Service Development Benelux
Period 1997 – 2002	Founder and leader Capgemini Interim Management Benelux
Period 2003 – 2008	Vice President: HR-director Capgemini Continental Europe & Asia Pacific Project leader Global Leadership Development Inventor and developer The Leadership Development Toolbox
Since early 2008	General Manager Leadership Development processes and enablers BV

My Curriculum Vitae thus follows my changes in life orientation and below I will describe the changes between the different periods.

1962 – 1967 My breakup from the Netherlands and the start of a professional career.

### ***From Student to Professional***

The period after passing Highschool (1962) would start with 9 months of waiting before enlistment for compulsory military service. But I did not want to just sit and wait for. I decided to travel (hitchhike) through Europe.

Because I was born from a poor family, I did not have any money and needed to earn it first. Thus, I started working in a bakery in Stockholm as assistant and dishwasher. And after 3 months, I hitchhiked further to many different countries. To begin with to Scandinavia, Germany, Austria, the Balkan (behind the Iron Curtain): Slovenia, Croatia and Serbia. Thereafter to Italy, France, Switzerland, Germany, the United Kingdom, Belgium and back to Holland. Since I was short of money and had made some debts, I needed to come back to Sweden to earn some money before my enlistment. In the winter 1962/63 I travelled back to Sweden, to take on a job as a cleaner and again as a dishwasher. I liked Sweden and decided that I would come back there for my University studies.

When, in October 1964, I moved back to Stockholm, together with my Dutch fiancée Helena (my wife since 1965), my intention was to study Mathematics.

Hard times, because of hard labour, and I did not have time to follow the lectures. But the hardest obstacle of all was that I did not master Swedish yet.

However, I was lucky! Since I was an educated meteo-soldier, I succeeded in obtaining a temporary job as meteo-assistent in the Swedish Weather Agency (SMHI), with the promise that I would get a permanent job, if I would manage to quickly learn Swedish.

SMHI ran, together with the Swedish Road Building Agency (Statens Vägverk), one of the first datacentres in Sweden, and I became a data-operator on a very large primitive computer.

When Statens Vägverk decided to set up its own data centre, they asked me to follow and become responsible for the set-up of their administrative data routines.

In 1966 I joined, as one of the first fifty students, the Computer Sciences study at Stockholm University and the Royal Technical Institute.



1967 – 1973 Leading people, being a manager

***From Technique focus to People focus***

My wife and I wanted to start a family, but the housing situation in Stockholm was difficult. So, I found an advertisement about a role as project-leader IT at Uddeholms AB in the province of Värmland ('house available') and I applied for the job.

We moved to the Swedish inlands fall 1967. Our son was born summer 1968.

My role as IT-project-leader for the Steel sector went quite well.

Because I'd had to quit the Informatics study in Stockholm<sup>7</sup>, I switched to Business Economics. Every second year this study started in Hagfors, but the school lacked teachers for two brand new subjects: IT and Administrative Rationalization. I applied and got the job, which meant that the study could take a start, with me teaching my own class in those two subjects.

Soon I was asked to become a systems development manager. For me, this meant a new paradigm shift: people are more complex than information systems. So, along with the economics study I also started to study ***Personnel***.

1973 – 1983 Back to Holland

***From manager to Leader***

Uddeholms AB, that just had celebrated its 350 years anniversary, was in bad weather. Growth had changed into decline and cost-cuts. I, being a very young manager decided to explore the market. It showed that I was very popular, both in Sweden, Denmark and the Netherlands. A head-hunter contacted me for an interesting job in Hollands largest and fast-growing retail conglomerate, Vroom & Dreesmann. They wanted me to organize their IT. So, together with my family, I moved back to Holland.

I managed the job well enough for top management to invite me to become a crisis manager as the CFO for Dixons, a newly acquired company with large problems. Overnight I became 'trouble-shooter for the board'. And soon after more projects were added to that. I became the Administrative Director for the division Hard Goods. While doing my job, I gradually discovered a new kind of world in the top of the organization, with a number of 'top management diseases'.<sup>8</sup>

Anton Dreesmann was well-known, as a patriarchal employer, but also a charismatic and paranoid leader.<sup>9</sup> And I worked quite close to him and little by little, I started to ask myself whether I really belonged. I decided that I rather would work for an organization, not only with the challenges of growth, but where people were the most important asset.

1983 – 1993 ***From leader to entrepreneur***

I got many interesting job options, again in Sweden, Denmark and the Netherlands/ The CEO of Capgemini Netherlands called me and offered me 'a job I couldn't refuse' and I decided to accept.

I became branch-manager, responsible for a large part of the organization, which consisted of about 150 consultants. Internationally Capgemini employed at that time 3.500 - 4.000 consultants. Nowadays more than 250.000.

I contributed to a fast growth, because I understood the importance of developing talented people.

In 1987 I created the division Public Services, and in 1988 I added Management Consulting to our portfolio.

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<sup>7</sup> Mats Lundberg himself had helped me with the final registration of the exams I had passed.

<sup>8</sup> See <https://www.ld-toolbox.com/en/teameffectiveness/preconditions-for-a-well-funtioning-team-33079256>

<sup>9</sup> He was not only responsible for the extensive growth of the organization, he also initiated (some years after I had left) the companies decline and tragic downfall. Today, nothing is left from this, once very successful, company.

1993 – 1997 ***From entrepreneur to Manager of Change***

By the end of the eighties and early nineties, I became Manager of Change for two larger mergers and, in between, turnaround manager for one of Capgemini's divisions. And, after that the Vice President for Capgemini's Service Offerings and the Capgemini Academy. After this, I thought that I had seen almost everything....

1997 – 2002 ***From Change Manager to Businessman***

One thing I had not experienced yet: To create a company from scratch. So, I told my boss that I intended to leave the company. His answer was challenging: 'Capgemini does not want to lose you, and I know that whatever you do, will be in the interest of our organization. You may do whatever pleases you, as long as you earn back your own salary!'

I decided to define the program 'Positioning and professionalizing Capgemini's Management Services'<sup>10</sup> and create the company Cap Gemini Interim Management. This company delivered 'temporary executive management' in the top segment of the Dutch market. With a special Management School, we developed a strong focus on building competences for interim managers. Actually, the 'normal' Capgemini managers attended this Management School at least as often as our Interim Management network. We also supported the assigned interim managers with a new kind of coaching, 'shadow management'<sup>11</sup>.

2003 – 2008 ***A focus on Leadership and Leadership Development And an international career***

After Capgemini's merger with the Management Consultant of Ernst & Young the board of Capgemini Benelux asked me to set up Leadership Development. The concept we realized was successful enough, such that we also could sell it to one of our larger customers.

Already while leading Capgemini Interim Management, I had discovered the need for an instrument and I created the Leadership Development Toolbox.(the LDT), based on a personality assessment. The difference with all other instrument, this one was meant for the assessed leaders, to help them accelerating their development. With the Capgemini University I set up the first module of the Team Effectiveness program.

Further, I was asked to become the HR director for Capgemini Continental Europe and Asia Pacific, and soon after that I also become the project-leader for Capgemini's Global Leadership Development. The LDT became kind of a backbone for the leadership program and almost 2000 leaders (from Vice Presidents to emerging leaders) became users of this toolbox.

2008 – nu at the age of 65 (at that time) people were suspected to retire. I bought out the toolbox and started Leadership development processes and enablers (LDpe). With this company I continued to build out the LDT, which you can witness on the website [www.ld-toolbox.com](http://www.ld-toolbox.com).

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<sup>10</sup> My publication 'Management Sourcing' was also delivered as part of this program.

<sup>11</sup> As a result of our success, I was interviewed in Fast Company, in an article about turnaround management: 'Masters of Disaster'. In this article the idea about shadow management was mentioned, which lead to a broad interest by interim managers all over the world.



## 5. Conclusions

Every change requires a new type of awareness. Old paradigms need to be replaced by new ones. This is true in life, it is true for companies and organizations, and it is true for societies.

For some, the change process may feel painful, but for the ones who can feel secure during the change, it may mean new chances and challenges.

I myself have had the opportunity to be part of one of the human history's important societal changes, the introduction of ICT, for which I am very grateful. And just now, in this period of time, we can witness the spectacular start of 'The Global Brain' era.<sup>12</sup>



**J.C.A. Michielsen 1986    The Awakening Brain    Acrylic paint, paper on panel 122 x 122**

<sup>12</sup> Peter Russell: *The Global Brain – Speculations on the Evolutionary Leap to Planetary Consciousness*.