Chapter 1
The Age of Transformation

Introduction

Whether you are a pessimist or an optimist, there is one thing we all agree on: things are changing. The world as we know it would not be the same in the near future. A transformation is taking place, and it is going to affect all of us.

In the pessimistic view, it is inevitable that the world as we used to know it no longer exists. Mankind has created a mess in the ecological system. We are squandering our planet’s resources and violating nature, which has provided us with everything we need for so long. The pursuit of wealth has resulted in an increasing gap between the rich few and the poor masses. Our privacy is at risk with the widespread use of social media and video cameras on every street corner. Unhealthy lifestyles have caused an epidemic of obesity, and despite the advances in medicine and technology the elderly still are not living happier lives than before. The habits that we developed long ago of gathering food and the necessary supplies to exist have developed into just gathering stuff we rarely use. We have lost touch with nature, so we do not have a clue about what it takes to produce the stuff we buy and consume. We are using up natural resources at a speed that is completely out of tune with the rate at which they were formed. So the pessimists are warning us: we are racing full speed ahead on a dead-end track. So we had better brace ourselves for the crash that is sure to happen sometime soon.

Optimists see things differently. The ongoing developments in technology provide us with ever more opportunities to face the challenges ahead. No problem is so big that we cannot solve it with all the ingenuity we have available. A crisis is something positive, because it drives us to use our creativity to find new solutions. The information age has brought rich and poor together: the world has become flat. People in the ‘western world’ are no longer tied to fixed jobs for life in corporate or governmental organizations. They take the opportunities of self-employment, and follow their dream of living a life in which they build on their strengths and have more freedom to choose what they do. Recent developments in the Middle East show that undemocratic regimes that have ruled for decades can
suddenly be overthrown by masses of people who—through social media—
understand that they are not alone. People in developing countries are no longer
stuck in poverty forever. All those with drive and a bit of money—whether it is
their own or a microcredit loan—can make themselves useful and contribute to the
world’s well-being. So optimists are encouraging us to prepare for self-manage-
ment and empowerment, and to start contributing to and benefiting from the
plentiful opportunities that lie ahead.

Both these views are valid, and they are not mutually exclusive: we do not have
to choose because…

Threats…

Plenty has been written on the multiple crises we are currently experiencing. The
economic crisis has not gone away. Experts may differ in how they describe it—a
double dip or an L-shaped recession—but what they do agree is that it will take a
while before the economic markets are back to where they were before the bank
-crashes. If they ever do that…

On the health front, we are confronted with viruses and bacteria that are
mutating and threatening to infect large numbers of people. We are living so
closely together that a virus could easily create an epidemic. Newspaper
headlines talk about a pandemic each time a new virus is discovered. In recent
years there have been SARS, bird flu and swine flu, making it clear that we are
very vulnerable as a species. We are threatened by things we can hardly
control, but even where we can control our health we do not necessarily seem
to care too much. Many people enjoy unhealthy lifestyles, with unbalanced
diets causing malnutrition, and not having enough physical activity. All this
results in too many people being overweight or even obese, with the associated
health effects.

Our population is ageing. Of course it is a good thing that life expectations are
much longer, thanks to better standards of living. Today, many conditions that
were fatal in the past can be cured or kept under control. Patients can live longer,
with a higher quality of life. But this is also a threat to the costs of the health care
system. Some predict that in a few years we will need almost half our workforce to
work in health care if we want to maintain the present care levels. Apart from the
fact that we would not be able to find so many trained staff at such short notice,
you do not need to be a wizard in business economics to calculate that we will
never be able to afford the associated costs. Solutions that aim to increase the
efficiency of health care actually reduce the amount of social contact between the
patient and the caretakers, which then increases the feeling of loneliness. Lonely
patients could feel more depressed and anxious about their health. This might in
turn lead to more frequent visits to the doctor and regular use of medicines, thus in
fact to higher costs of health care.
Whether mankind is the cause of climate change or whether it is caused by natural phenomena is the subject of ongoing debates. But whatever the cause, there are certainly huge disasters taking place in areas that looked so safe before. Floods, earthquakes, bush fires, tsunamis and volcanic eruptions are claiming many lives. Whole areas are affected, and many people have lost everything they had.

Some natural disasters are certainly out of our control, but that does not mean we are not responsible for squandering natural resources at a tremendous rate. While some cultures and people believe nature is sacred, they have long lost the power to protect it. Virgin forests are sacrificed for economic gain and to plant crops for biofuels. Not only are rain forests important for our oxygen, but nature in general also has a very positive impact on our general well-being. So the disrespect we are showing might not turn out to be such a good idea.

Wherever there is gas, oil, gold, diamonds, gallium, uranium or whatever resource to be found, we swoop on it and extract it. And although we are becoming more efficient by the day, prices of commodities are going up as demand soars. The list of minerals that will be scarce in the foreseeable future is constantly increasing. This trend will certainly affect the availability of materials for all kinds of products.

Social cohesion is also under threat. In the pursuit of wealth, people at all levels take decisions that seem to mainly address their own interests. People who are only looking for the fastest way to fill their own pockets are managing institutions with the responsibility of caring for the weakest members of society. When management of institutions and companies alike show this kind of behavior, we cannot expect employees to keep working for the greater good of society. It is almost as if you are a complete dummy, just working hard and not taking any short cuts to achieve your personal goals ever faster. As a result social fabric is weakening, with fewer people feeling inclined to take care of each other.

… Are Opportunities

So we can choose to be paralyzed in despair, or we can choose to see the abundance of opportunities that these multiple crises bring. Many innovative solutions have been found in times of crisis. There is a growing awareness that things need to change. More and more people are willing to invest time and resources in making a change. And as many examples have proven, the problem is not the lack of financial resources but rather a lack of creativity to think differently, and to find new solutions that may start small but can grow into a sustainable ecosystem that develop further over time.

Just one example: Muhammad Yunus visited the poorest households in the village of Jobra, Bangladesh, in 1976, where women made bamboo furniture. These women had to take loans from moneylenders at extreme rates to buy the bamboo, leaving them barely any profit to live on. So he decided to lend US$ 27 out of his own pocket to 42 women. Subsequently he was able to get a government
loan to extend his clientele, and in 1983 he founded Grameen Bank. Today the bank has lent more than $8 billion to 8.1 million borrowers, 97% of them are women, and changed the lives of 80% of the Bangladeshi families. This example shows that starting small can create a big impact.

What is different in tackling societal challenges, compared with traditional engineering, design or business challenges is that they need a more holistic view of how the solution needs to be defined. A traditional engineering or design problem can be solved at the level of a product. Although engineering or design problems can be challenging because of contradictory requirements, the solution can usually be found within the scope of the product itself, and so the decision can be taken by the lead engineer or product manager. A business problem at the level of a company and its market can usually be solved within the scope of the decisions that a manager can take. But finding real solutions to societal challenges requires the consideration of all these aspects at the same time; it crosses the borders of a single decision-maker. It requires knowledge at the level of the user of the prospective products and services, the level of the organization that will bring those products and/or services to the market, the level of the ecosystem that links the various products and services to their users and other stakeholders, and the level of society that will reap the benefits of the solution. By linking the views, opportunities and resources of these levels, the goal becomes clearer and solutions can be strengthened.

This may look like an insoluble problem, but in fact societal challenges provide tremendous opportunities for business [11]. Social innovations are motivated by the goal of meeting a social need. They aim to fill the gap between what there ought to be, between what people need and what they are currently offered by governments, private firms or non-governmental organizations [4]. Social innovations bring new ideas that improve quality of life. This concept is different from business innovations, which aim to create a profit for a specific company. Yet the concepts are overlapping and social innovation provides opportunities for business to go hand in hand with improving quality of life [10]. This business potential is real—not just an opportunity to do a charitable favor to society, as is unfortunately too often the current practice in many social responsibility programs in companies [11].

Solving societal challenges requires a good understanding of what prospective users are faced with. For example, a good understanding of the experience of elderly people who regularly take medicines and visit their physicians could reveal that at a deeper level they feel lonely and anxious about their health. Alternative solutions to medication and physician visits could then include addressing their loneliness. Solutions at this level would not only increase the quality of life of the patients, but would also decrease the healthcare costs.

Innovation can also start at the level of the company. Continuous development of technologies makes new solutions feasible that were previously beyond imagination. Business opportunities can be found in the links between the emerging technological solutions and the challenges in society. We can also start at the level of societal challenges, with brainstorming, for example, on solutions to improve
quality of life or ways to reduce the ecological footprint of citizens in developed countries.

Good solutions are those that create value both at user level and for the organizations providing them, without harming the planet. But we need more than just good solutions.

**Paradigm Shift**

What is needed is aiming higher than just providing good, although partial, solutions. Partial solutions will never radically reduce the energy consumption of the world’s citizens, while radically improving quality of life at the same time. We need more than partial solutions to achieve that.

The conventional business perspective shows that we are fine if we address a big enough target customer group to buy a solution at a price that gives us a good margin over the development and production costs. But to make an impact at societal level, we need as many users as possible to adopt the solution and keep on using it. This means two things: we need to make a compelling offer that users are willing and able to buy, and moreover we also need them to use it extensively. For example, to tackle obesity among children we could launch a game that needs them to be physically active. If we take a narrow view, we can claim the product is a success if more than the expected numbers are sold at the recommended retail price. But in a wider view, it can only be a success if the children are indeed more physically active over a longer period of time and eventually loose weight. So it is not enough just to sell those products, they also need extended usage to provide longer-term societal benefit. And to do that, the game—in this example—has to create sustainable behavioral change in the children using it.

The societal challenges that we currently face are not isolated problems that can be solved by single solutions sold just like ‘normal’ products. We need to change the behavior of as many people as possible to make an impact. Energy scarcity cannot be solved just by a few people who drastically change their behavior, and nor can it be solved by everyone doing just a little. As David McKay put it: “if everyone does a little, we’ll achieve only a little” [3].

To change the behavior of people on a larger scale, we need to provide solutions that they love to use. Using the product or service should provide a positive experience; one that persuades them to use it more often, for a longer period of time. It also means that the organizations involved in providing those products and services need to benefit from the solution. The business case should be sound, so that they get a return on investment within a reasonable timeframe. But the business model should also allow them a sound business in the longer run.

The ultimate solution is therefore the one that provides a pleasurable experience for end-users, with the ability for the organizations involved to do well, sustainably. Only in this way will there be a big enough positive impact at societal level, and will real transformation take place.
Towards the Transformation Age

There are signs that the paradigm shift that is needed is already taking place. It is the next one in a series of paradigm shifts that have happened in the last few decades. From the agricultural economy we went into the industrial economy. From the industrial economy we went into the experience economy. From the experience economy we went into the knowledge economy. And now we are entering the transformation economy. To understand the impact of this, let us first look back at those earlier shifts.

**The Agricultural Economy** In the rural, agricultural economy people made a living by growing and selling crops and livestock at the market. As they were dealing with living things, they were largely dependent on the seasons and climate influences. Although some may reduce the task of agriculture to the production of food (as an industrial process), a wider view shows that it also contributes to other things [13]: it keeps man in touch with living nature, of which he is and remains a highly vulnerable part; it contributes to humanizing man’s wider habitat; and it brings forth food and other materials that are needed.

If production of those goods is in line with consumer demand, farmers can have a good living. But this came to an end when the drive to increase productivity led to investments in machinery, and ultimately to overproduction. Prices dropped, and the necessary investments made the costs higher. It became harder to have a good living with farming. At the same time a shift to an urban, industrial economy was taking place, and for many farmers it looked more attractive to abandon their farms and move to the city in pursuit of jobs in industry.

**The Industrial Economy** The urban, industrial economy differs from the agricultural economy in many ways. The focus on production of non-perishable goods and commodities such as textiles, coal and metal meant larger volumes could be produced and kept in stock or be distributed over larger distances. Investments in technology such as steam power, together with the availability of cheap labor from farmers migrating to cities, made it possible to achieve economies of scale that allowed both greater quantities and higher quality at the same time. The revolution in transportation through the construction of canals and roads, as well as the railway system, increased the ease and speeds with which raw materials and finished goods could be transported to and from the urban centers.

The industrial revolution caused unprecedented changes in society, changing the whole way of life for many people in an unusually short period of time. Where earlier, extended families stayed in the same area for many generations, people suddenly became more mobile and bonds with the extended family became less strong. Workers sold their labor in return for a wage or salary, and were no longer free and self-sustaining. This lead to criticisms, as in some cases workers were exploited. The factory working environment was often harsh: noisy and dangerous, with mind-numbing repetitive tasks. Nevertheless, the industrial age saw a vastly improved standard of living for many people.
For companies, the increasing competition from global companies has caused tremendous pressure on the price and quality of their products. Availability of goods from countries with lower wages has made companies in the West shift their manufacturing operations out of the Western world. Looking for alternatives to build a sound business, many have shifted focus to create higher added value through services and experiences.

**The Experience Economy** The growth of services as a sector is a logical consequence of the decline of industrial activities. Services are considered as economic goods consisting of labor, advice, managerial skills etc. [7]. Service industries account for an ever-increasing proportion of the national income in nearly all developed countries. Services differ from the production of goods in a number of respects [5][14]: their intangibility; the fact that customers are directly involved and participate in the delivery, and therefore the production and consumption takes place simultaneously; their perishability; and the differences in experience of different consumers. Where competition is strong, and customers can choose from a wide variety of offers, it becomes important to distinguish the offering. The distinguishing factor in services is the experience. Buyers of experiences want to be engaged by what the company reveals over time. Companies strive to stage customer surprise, exploiting the difference between what the customer gets to perceive and what the customer expects to get [9]. This is quite a contrast with the ‘industrial’ notion of customer satisfaction that strives to meet the expectations of larger customer groups. In creating an experience a personal element is taken into account, and the aim is to surprise the customer. For returning customers, it also means that the company has to keep a record of the past experiences of each specific customer because just providing exactly the same as in the past might not create the desired surprising effect. To continue to appeal to customers, organizations need to carefully manage the experience they create.

**The Knowledge Economy** The knowledge economy is part of the service sector, but distinct enough to be classified separately: the quaternary sector focuses on the knowledge-based part of the economy. It includes economic activities concerned with information: its acquisition, manipulation and transmission [8]. The category also includes the fast growing economic activities in the field of media. The knowledge-based economy generates information, rather than goods and services, and successfully creates new knowledge as the basis for new products and services [8].

The rise of knowledge-based services is enabled by the widespread use of information technologies. Accurate, up-to-date information from professional services such as news agencies, weather stations, national statistics institutes etc. is put online. The amount of data that is available online is growing very rapidly, and it can be used to provide knowledge-based services or to enhance existing services with additional information. For example a travel agency used to provide general climate information on the destination, but now the e-ticket comes along with accurate forecasts of actual weather conditions at the site.
Another enabler for the knowledge-based economy is the widespread use of automated data generation. In personal navigation, for example, the logging of the speed of mobile phone users on highways allows accurate, up-to-date estimation of travel times, with real-time allowance for delays due to road works, accidents or traffic jams. This information, provided to users of TomTom’s HD Traffic service, gives much more accurate indications of estimated travel times to specific destinations than average travel times.

A third factor that enables the knowledge-based economies is the ever-growing online community that contributes to building knowledge and making it available to others. A good example is the use of ‘wikis’: websites whose content can be changed and extended by users through their web browsers [5]. Wikis range from small ones for private, department or company use, right up to large, worldwide internet sites as Wikipedia, the popular internet encyclopedia. What makes these concepts different is that they are created by volunteers. The accumulation of small contributions by many individuals can create a tremendously rich wiki.

The knowledge economy also provides new opportunities for organizations. New ways of working together are enabled by technological advances, allowing radically superior forms of innovation. Cyberteams of self-motivated people with collective visions enabled by the web to collaborate in achieving common goals by sharing their ideas, information and work are innovating in collaboration. In these networks, knowledge workers collaborate and share in internal transparency. They communicate directly rather than through hierarchies. And they innovate and work toward common goals in self-organization instead of being ordered to do so. The World Wide Web itself and Linux are examples of successful innovations in such networks [2]. These examples also show that new business models came into use with the knowledge economy, and the traditional direct exchange model has been replaced by services that are offered for free, but have other ways to generate revenues such as through advertisements or ‘clicks’.

We are still at the beginning of the knowledge economy, and there are plenty of opportunities to further build new knowledge-based services, to innovate through the use of knowledge networks, and to use supercomputers to make sense of the increasing amount of available data. But some effects of the knowledge economy are already visible. Knowledge workers are much less dependent on their employers than they used to be in the industrial age. The investment needed to set up a business in the knowledge economy is extremely low: a PC with an Internet connection will do. For people who want more control over their daily activities, it is economically feasible to become self-employed and pick the projects they want to do. They benefit from more freedom in what they do, and when they do it. Knowledge workers are not bound by regular office hours. For companies this means additional flexibility. But there is also a challenge: they will need to stay attractive to the more flexible workforce, as good people are much more mobile than before.

The knowledge-based economy initiated the emergence of a fifth economy: the transformation economy.
**The Transformation Economy**  Although not officially announced as such, there are signs that the next important economy will be the transformation economy. For two reasons: it needs to be, and it can be. Transformation is defined as a marked change in form, nature or appearance [6]. A European Union think tank expects that the next 20 years will be disruptive: a new multi-polar world is emerging in which power is more diffuse and international dynamics is more complex, against the background of sweeping societal transformations that include an ageing society, declining domestic supplies of labor and technological and communications revolutions that are changing both private and professional relationships and imposing new patterns of life [12]. In this age, transformation will take place at societal level, through large numbers of individuals willingly contributing to it. This transformation is needed because of the abundant negative side effects of the industrial age: the threats referred to before are real. This transformation is also possible because by building on the knowledge-based economy, and on the willingness of many people to contribute to higher goals and live more meaningful lives, we can seize the opportunities.

To a certain extent, we need to re-establish the virtues of the agricultural age: reconciliation of man with the natural world. And as Schumacher already noted in 1973: this cannot be achieved by tourism, sightseeing or other leisure activities. We will need to focus all our actions to the three-fold ideals of health, beauty and permanence [13].

Pine and Gilmore define transformations as have lasting consequences beyond their consumption. Buyers of transformations seek to be guided toward some specific aim or purpose, and transformations must elicit that intended effect. A transformation requires a change in attitude, performance, characteristics or some other fundamental dimension; it affects the very being of the buyer, in fact the customer *is* the product. The change has to be permanent; if it is only temporary and not sustained, then it was not really a transformation but merely a momentary uptick along the same old journey [9].

This description provides a good insight into what we need to achieve. Typically the aspirations that we need to address should contribute to society as a whole. They include aspirations like changing our energy consumption, reducing our ecological footprint or living a healthier lifestyle, with a more balanced diet and more exercise. We will need to understand the personal differences between individual people, and to address these in the offering. ‘One size fits all’ is a concept that already became outdated in the experience age, and it is even more important to make sure that individual differences are addressed if we want to create sustained behavioral change.

The transformations we are aiming for will have to provide interesting and meaningful challenges for the collaborative innovation networks that generate ideas, as well as sound business for the organizations that provide the solutions. In fact transforming propositions need to provide value at different levels: for the user, for the organization and for society at large. These different levels of value are explored in more detail in the next chapter.
Figure 1.1 shows an overview of the most important distinctions between the economies described in this chapter. The table is an extended version of the one provided by Pine and Gilmore [9]. For each of the economies, the figure shows how value is created from a people as well as a business perspective.

The answer to the current societal problems is not another economic reform. On the contrary, a dynamic equilibrium between the economic, social and environmental dimensions needs to be restored [12].

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