Four future scenarios for businesses
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Being an entrepreneur means looking ahead. The important question is not just what does the client want now, but what does the client expect from your company in the future. There are many other developments which can affect how you run your company both now and later. Some of these are known to us. For instance, population ageing and the resulting expected tightness on the labour market. Consider also the demands that society and the environment will increasingly place on your business strategy. But there are also many uncertain variables, and the only thing we can be sure about is that they will determine your situation and ours in the future. Unknown quantities, such as energy sources, the depletion of natural resources and climate change, which are difficult to anticipate.

How will our world look in 2030? This is a question that has been occupying our economists for some time. Which countries will form the major power blocks in twenty years time? Will the European Union still exist? Will the euro be a global currency or merely a vague memory? Will we have a peaceful society, or will there be another Cold War? Will there be enough food to provide for a growing global population? Will we have found adequate alternatives to the finite supply of fossil fuels? And what about our economic structure? Will the growth of services in the Netherlands have continued? And how sustainable will our economy be?

Of course nobody knows the full answer to these questions. Yet to gain some understanding of the future, we have developed four possible scenarios of how the world could look in twenty years. Our projections revolve around two variables: conflict versus harmony and evolution versus revolution. The interaction of these two variables has resulted in four scenarios, each of which sketches a possible state of the world in 2030.

Capricious Consent is the scenario of a rapidly changing world with optimal cooperation and a dynamic society. Agile Antipoles is a world where conflicts at all levels go hand in hand with technological breakthroughs. Slow Strife depicts a sharply polarised world, with little forward movement. And finally, Flowingly Forward is a world based on consensus, characterised by gradual, though steady development.

It is not implied that these four scenarios constitute the only possibilities for the world in 2030. They merely provide a handle to take a peep into the future, and illustrate in so far as possible, the extremes of what might be reasonably possible. To be more optimistic than Capricious Consent or more pessimistic than Agile Antipoles would be unrealistic. You may perhaps feel a connection with one of the four scenarios - or even more than one. At any rate, we hope this study will help you to reflect on your long term
strategy. Or at least to face the future with courage, even though not every scenario paints a pretty picture. And each scenario contains challenges - some of which you may well have anticipated already. Because as we have said: being an entrepreneur means looking ahead. I wish you wisdom and success in this challenge.

Piet Moerland
Chairman of the Executive Board
Rabobank Nederland
Introduction

Businesses in the Netherlands are facing a number of strategic challenges in the years ahead. Population ageing, the advance of China and the emergence of other countries, ICT developments and energy and environmental issues will all exert some degree of influence on the sphere of activity of Dutch businesses in the coming decades. The extent of this influence is, however, uncertain. Consequently, there is a need to create a clearer picture of all the variables and possibilities. Where might these lead to: What are the limits? What is beyond the bounds of possibility? And all things considered, how can businesses best act to anticipate these key uncertainties?

IN2030 is a scenario study that depicts how the situation might be for businesses in 2030 on the basis of four scenarios. Not only do we thus place future developments in a broader perspective, it also becomes clear how future scenarios can vary and what the driving forces behind these differences are. Issues such as the sustainability of food production, energy resources and knowledge development are explored against a backdrop of societal and (geo) political movements, as well as technological and demographic developments. More concretely, the four scenarios contain an analysis of developments in six business sectors in the Netherlands.

Which sectors will show the most growth in 2030? Will Dutch industry be able to keep up with the increasing competition from the Asian countries? What will the consequences of demographic shifts be for the public sector?

In order to map the long term development of the various sectors of industry, we will first look at the development of labour productivity. Important factors in this respect are a favourable innovation climate, investment in education and schooling and embracing new technologies. It must also be asked, to what extent do increasing affluence and lower prices lead to greater demand for certain products? Finally, the international competitiveness of Dutch businesses is important. For each scenario, different factors can determine the future development of the sectors of industry.

IN2030 also has its limitations. Our primary interest is in developments that reflect the relevant situation in broad brush strokes. This means that some topics cannot be dealt with in detail, which would be impossible with a time frame of 20 years. We hope that IN2030 will inspire further reflection on possibilities for the future, including uncertainties and opportunities.

1 In the Spring of 2011 the book ‘IN2030: Vier vergezichten voor 2030’ will be published, which will contain detailed projections of living, working and doing business in the Netherlands in 2030.
An uncertain world: the driving forces

How will the world look twenty years from now? While we cannot expect a precise answer to this question, there is much to be gained by addressing it. We know that the world is changing in a number of ways. Some structural changes are fairly clear, such as population ageing and a shortage of natural resources. Other issues are less clear. These include technological developments, societal trends and the global balance of power. These driving forces, both certain and uncertain, will shape the world in which entrepreneurs will soon have to try to operate successfully. One could devote entire studies to the issues and trends that may play a role in the coming twenty years. Here we limit ourselves to a brief description of the issues that we consider to be the most important.²

The earth’s population increasing and getting older
The global population is set to increase by around a quarter in the next two decades. This will have major consequences for demand on our natural resources and for the sustainability of quality of life on earth. There is considerable diversity in global demographic trends. While Europe, but also China are grey ing, India has a rapidly growing, but relatively young population. In the Netherlands we have become accustomed to population growth for the past hundred years. It will be quite a challenge in the years ahead to change our mindset to thinking in terms of a contraction.

Shifting balance of power – stable relations?
It is virtually undisputed that the global economic balance of power will shift to the east during the next twenty years. But what will this mean for the world order and for international trade? Will the east overshadow the west? Will we move forward harmoniously? Or will the conflicting interests lead to a fragmentation of global power? Of course, these developments will be driven and influenced by other trends as well. How countries and power blocks relate to each other will largely determine the playing field for economic progress and free trade.

European (dis-)integration?
The process of European unification commenced in 1957. Since then, further integration has taken place, step by step, culminating so far in the introduction of euro notes and coins in 2002. But where do we go from here? The Greek crisis has made it abundantly clear that European integration could still be derailed. Could the eurozone or the European Union fall apart? Or will we remain on the path of further integration, one step at a time? Will Europe choose to grow strong together, or will it be ‘every country for itself’?

Fossil fuels running out
While the demand for energy continues to grow, energy sources are becoming increasingly depleted. What is to be done? Should we seek to save energy, or concentrate on searching for alternative resources? And if we opt for the latter, will these be environmentally friendly alternatives, such as biomass and solar or water-powered energy, or will the focus be on nuclear energy? Clearly, the energy question constitutes one of our most daunting challenges. It is also clear, that much has to be done. And this is one of the main uncertainties we face, which could

² For the more comprehensive background studies, see: www.rabobank.com/kennisbank
easily give rise to international tensions. These considerations apply not only to fossil fuels, but also to a greater or lesser extent to other minerals, metals and non-metals. Some of these, such as lithium and phosphorus are scarce, and are found in just a few places globally—a potential source of conflict, if no alternatives for these commodities can be found.

Challenges for the food and water supply
The growing world population and the rising average standard of living mean that the food supply and the availability of clean drinking water may become crucial factors in the future development of societies. Because the rapidly growing global population is gradually becoming better off, the average diet is also changing. This is chiefly reflected in increased meat consumption. Animal husbandry requires more land as well as more water. Climate change is also creating a water shortage. In 2030, it is likely that half of the world’s population will live in an environment of water stress. How is this to be resolved? By jointly seeking an efficient distribution of production and using new technological developments? Or will it be every country for itself? These are fundamental questions that determine the future.

Technological Developments
There is no doubt that technology will continue to play an important role in society in the future. However, technological innovations that are initially heralded as breakthrough developments often take longer to be universally embraced than expected. After all, we still don’t fly by helicopter to work every day, contrary to what was believed would happen fifty years ago. On the other hand, twenty years ago, people had not anticipated the technological revolution of the internet. What we do know with certainty, is that communication and information technology in particular will continue to radically change our world during the next twenty years. We should also expect other breakthrough technologies, which we will not explore in detail here, but we will assume (in some of our scenarios) that these innovations will be mainly in the field of energy.

Working differently with fewer people
Our productivity in twenty years time will largely depend on how the above trends pan out. There will be a lot of factors impacting on the labour market: population ageing, technological developments, more extensive global economic integration and societal developments, all of which will influence how and where we will work and how and what we will produce in the future. Will we all be on flexi-time? Will the trend of an increasingly service-based economy continue? Or have we reached the limit in this respect? Will the Netherlands still be able to compete with other countries? And will our population still be sufficiently well educated in the future? These are all questions that need to be addressed.

Two core uncertainties, four scenarios
Some of the developments outlined above are unavoidable. Others are very uncertain. What they have in common is that they are all important factors in creating a picture of the world, Europe and the Netherlands in 2030. Combining all these factors and issues would lead to an endless number of possible future expectations. That is the reality. So in order to create a handle to enable

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3 According to the Food and Agriculture Organisation, water stress occurs when there is less than 1,700 m3 of drinking water available per person per year. See also: Food and Agriculture Organisation, Coping with water scarcity, Challenge of the twenty-first century, World Water Day 2007.
some consistency in describing possible developments, we have opted to map our future projections on an axis: two dimensions on which the above listed topics pivot. This produces four very different scenarios for the world of 2030. Each of these reflects the limits of what might be reasonably possible.

The axes are designed to highlight processes and developments, rather than focusing on the concrete trends and issues, as described above. How these trends and issues pan out will depend on the interaction between the axes. The vertical axis represents the degree of harmony in which developments take place and how processes evolve. Harmony and conflict are the two extremes on this axis. Harmony stands for a peaceful society, consensus and cooperation. Conflict implies a more polarised society, with each individual for himself and less emphasis on collective interests.

The horizontal axis represents the degree to which developments and processes occur gradually (or explosively): revolution as opposed to evolution. Revolution stands for rapid breakthroughs, extreme peaks and troughs. Evolution means more even-keeled and longer lasting developments and processes. Thus the four squares created by the axes form the basis for four scenarios in 2030. The harmonious-revolutionary square contains the world that we describe as *Capricious Consent*. This is a dynamic, uncertain, but harmonious world where technological progress and the further integration of the global economy play pivotal roles.

The world in the bottom right square is one of major conflicts and changes. It is a world of *Agile Antipoles* with considerable polarisation both in and between countries. In the bottom left square (Conflicting-Evolutionary on the axes) there is a world which seems to be stalling. Locked into a new east-west polarisation, international dialogue fails to produce new solutions. We call this scenario *Slow Strife*. Lastly, above this we find *Flowingly Forward*, a more sustainable world in which the search for progress is based on consensus.

**Using the scenarios**

Because very long-term developments are shrouded in uncertainty, scenarios are used to try to navigate the distant future. The above four scenarios are not intended to predict the future, nor are they the only possible situations for the world, twenty years from now. However, they are consistent possible scenarios, in which one picture is not more or less likely to occur than another. The scenarios have been created by making various assumptions about the core uncertainties that are central to the future issues being illustrated. The assumptions are wide-ranging, therefore producing four very different scenarios, which reflect the considerable degree of uncertainty involved. The scenarios thus represent the limits of what is reasonably possible. They are designed chiefly to be an aid to companies in formulating strategic decisions, and to be used as a reference framework which looks beyond the direction of existing trends. Each scenario indicates where the best opportunities might lie. Some of these may be surprising.
Figure 1: Core uncertainties and four scenarios

Harmony
Flowingly Forward
Capricious Consent
Evolution
IN (2013(0)
Revolution
Slow Strife
Agile Antipoles
Conflict

Source: Rabobank
Capricious
This world is driven by primarily economic considerations. It is a multipolar world, which means that more than two economic powers – or countries – exert a major influence. Countries prefer to work together, because they realize that this is the best way to further their interests. Changes take place explosively and rapidly. Tensions are resolved in a harmonious manner and do not escalate into large-scale conflicts.
A multipolar world

The world of 2030 will no longer have a unipolar order in which the influence of the United States is decisive (end of Pax Americana). This will be due not so much to a weakening of America's power, but to the rapid rise of new players on the global stage. Thus the economic, political and military power will be divided across a number of states (figure 2). In 2030 China will be the world's largest economy. Beijing will have implemented radical political and economic reforms. To the satisfaction of the United States and Europe, China switched to a flexible exchange rate policy in 2022. Its neighbour, India, has succeeded in positioning New Delhi as the political and cultural bridge between the United States and China, while Bangalore has become a global centre of information technology. The strong Chinese economy is good news for Japan. Tokyo is therefore keen to invest in a good political relationship with Beijing and greater access to the Chinese market. This culminates in a free trade agreement between these two countries in 2025.

Thanks to its pro-western government, in power since 2020, Russia has made a remarkable transition to democracy, positioning itself as the growth engine of Eurasia and central Asia, and strengthening its links with Europe, and to a lesser extent with the United States. In 2030 Brazil is the fifth largest oil producer in the world and has evolved to become a regional power player, having orchestrated the political and economic integration of Latin America in the past twenty years.

The focus of international collaboration is on economic issues. In 2020 a new, somewhat watered down world trade agreement was signed, but is bolstered by far-reaching bilateral and multilateral accords. Regulation of the financial sector has been kept to a minimum and is chiefly aimed at creating a level playing field and adequate safeguarding of client protection. In 2028 Basel IV is succeeded by Beijing I, because the Bank of International Settlements has since moved to China.
The United States of Europe

The individual member states of the European Union have reached the conclusion that institutional reform and voluntary surrendering of their national sovereignty is the only way to consolidate their influence on the world stage. Thus the transformation to the United States of Europe was completed in 2027. Politically the Union is structured as a federation: a central government heading a large number of states that are relatively independent. The European Commission has been converted into a full-spectrum government, carrying out European policy on international affairs, economic affairs and defence. The European Parliament is a national house of representatives, while the European Council is now the European Senate. The creation of the United States of Europe has given Europe a degree of power on the world stage that matches the economic weight of the region. An increasing number of countries are holding their reserves in Euros. In 2020, the United Kingdom, Sweden and Denmark introduce the euro. Three years later they are followed by the Czech Republic, Poland and Hungary. The Balkan states join the European Union in 2025, followed by Turkey in 2028. Negotiations with Ukraine about accession are in progress (figure 3).

Energy crisis averted

Summit meetings between the major powers do not longer focus exclusively on trade agreements; bilateral agreements are now being hammered out about the energy supply. The rise of both China and India has exacerbated the global shortage of natural resources, putting pressure not only on the supply of oil and natural gas, but also on water, important metals such as zinc and copper and minerals such as phosphates.

Amid these problems, solutions will be found in technology. Strategic alliances will be formed in order to invest in expanding the existing production capacity of the relatively cheap oil and gas fields in Russia and the Gulf region as well as developing the deep sea oil...
fields off the coast of Brazil. China’s growing need for commodities has led Beijing to undertake an active role in West Africa. The Chinese are investing considerable sums in exploiting oil and gas resources off the coast of Nigeria. Another example is the mass exploitation of shale gas, of which the United States, China, but also Poland have considerable reserves. Shale gas is proving a major competitor to the other fossil fuels.

At the same time, countries have a desire to reduce their dependence on energy. Political leaders worldwide are relying on technological breakthroughs and on market forces to achieve this. Market effects are contributing to a cleaner atmosphere, because the harmful by-products of CO₂ and other greenhouse gases are fully factored into pricing. Technological laggards are dependent on the trade in CO₂ emission rights and can barely keep their heads above water. Against this background, the importance of nuclear energy in generating electricity has grown to 25% by 2030. Thanks to technological advances, the predictions of a reduced and vastly more expensive energy supply by 2025 have remained unfulfilled, and the feared energy crisis has been averted.

**Safeguarding the food supply through technology**
Because of the growing world population, combined with economic progress, not only is demand for food rising, but the type of food sought is changing, due to dietary modification. Since there is little scope for increasing the water supply as well as the land available for food production, the focus is shifting to the second generation of genetically modified crops, which can use the scarce input factors much more efficiently than existing varieties. The food strategy, especially of countries and regions with a low level of self-sustenance, such as China and the Middle East, is characterised by bilateral agreements and strategic alliances with large-scale food producers concentrated in Latin America. This strategy will strengthen the south-south trade flows at the expense of the traditional north-south trade in foodstuffs.
In the heat of competition

For companies, *Capricious Consent* means a highly competitive environment, but one that contains many opportunities. Labour, raw materials and capital are plentiful, putting new investment opportunities within the reach of many. It will be essential to operate efficiently and flexibly. The commercial services sector is growing prolifically, while the agricultural and industrial sectors have to contend with strong international competition. However, the added value of these sectors continues to rise, because they produce high-quality products and knowledge and they serve niche markets.
The surface area indicates the extent of the opportunities contained in the dimensions that determine the environment of companies. The higher the score on a specific dimension, the greater the opportunities or the smaller the constraints.

Source: Rabobank

Labour: flexible and diverse

In 2030 the labour market will be much more flexible and ‘loose’ than is currently the case. This is virtually inevitable in a world in which economic interests demand the integration of economies worldwide and where technological innovations are taking place rapidly and explosively. With a social security system that encourages a return to work, long-term unemployment will drop to minimal levels. Employees will also change jobs often. The era of permanent contracts is over. The employee is an entrepreneur and may choose to work for various companies simultaneously for the duration of a project. Self-sufficiency is essential, while attachment to a single company will be less important. People’s incomes will largely consist of results-based remuneration on an individual basis.

The labour supply in 2030 will differ in many respects from the current situation. The downsizing of collective benefits will contribute towards inducing older people in the Netherlands and Europe to continue working until the age of 70. By comparison, the pensionable age in Japan has been raised to 75. Besides the elderly, women are entering the labour market in greater numbers, and they are more highly educated. Instead of working part time, more women are working full time. Thanks to the process of internationalisation, expansion of the EU and the accompanying free movement of labour and relaxed immigration policy, the labour supply in 2030 will be culturally more diverse than is now the case. In this scenario, the effect of population ageing on the labour supply is more than compensated for by the rise in labour force participation and the accompanying broadening of the tax base.

Two decades from now, half of the workforce will be employed mainly in the high-tech sector, ICT, accountancy and finance. In this scenario, highly qualified employees will traverse the globe and on account of the strength of the economy they will be in great demand but in short supply. At the same time, there will be considerable private investment in human capital, because the returns gained from education will be considerable, due to the wide discrepancy in incomes.

Cheap raw materials and financing

The shortage of raw materials will not be a problem for Dutch companies in 2030. At the same time, the investment in reducing the materials and energy required for production will reap rewards, as not only output, but also the transport of goods can take place at a much lower cost.

The complete liberalisation and globalisation of the financial markets in this scenario means there will be no limits on capital movement between countries. Consequently, companies and financial institutions can choose the country and currency in which they seek to borrow or invest money. The larger and more accessible markets will permit the use of more profitable investment opportunities, irrespective of their location. As a result, the share of bank credit in the total financing of medium-to-large Dutch companies will decline from over three-quarters nowadays to a little over half in 2030.

The search for access to knowledge and new technologies will lead to an ever increasing flow of capital from the emerging economies to the West. Besides investment in the national economy, considerable investment will take place globally via sovereign wealth funds. Consequently,
the management of many Dutch companies will be decided not only by American and European investors, but increasingly also by investment companies in Moscow, Beijing and New Delhi.

A world of unlimited possibilities

This dynamic world is driven primarily by economic considerations. The rise of new global powers goes hand in hand with the emergence of new influential companies and networks. Twenty years from now, these will have matured into true competitors to western enterprises. Thus, the amount of competitive pressure felt by companies in this scenario will act as an incentive towards improving efficiency and will force them to continually update their technology and organisational methods. Because technological progress is taking place at such a fast pace, this requires a large degree of flexibility, an efficient organisation of ICT processes and high-quality human capital.

Progressive specialisation means that tasks or actions in a production chain of a growing number of products will increasingly be divided up and spread throughout the world. Thanks to improving communications technology and relatively low transport costs, location will no longer matter so much. Schiphol airport and Rotterdam port are major junctions for the international transport of both people and goods. At the same time, an enormous consumer market is opened up to Dutch internationally operating companies. Between now and 2030, over one billion Chinese and Indian citizens will join the important middle class consumer group - double the current number.

With the blurring of national borders, the boundaries between companies are also being eroded. In 2030 companies and employees will operate in a number of global networks of businesses, research institutions and suppliers, in order to obtain maximum benefit from the information and knowledge from the different organisations in the network. Large companies that don’t succeed in linking into the global networks they need will not stand a chance in this scenario.

Structure of the economy

In *Capricious Consent* the Dutch economy is growing rapidly, at a rate of approximately 3% annually, albeit with large fluctuations. This growth rate is comparable to that of the 1990s, and can be attributed to a flexible labour market with a relaxed (knowledge) immigrant policy and strong technological advancement. Substantial global economic integration reinforces this trend.

Growth in the agricultural sector is lagging behind that in the rest of the economy. As against the liberalisation of trade and the opening up of new sales markets, there are spatial limitations that threaten to curb the growth of this sector. The discontinuation of subsidies in the wake of reforms to the common agricultural policy of the European Union and its further expansion likewise cause agricultural activities to shift to the east. Dutch agribusiness in this scenario plays a chiefly European pivotal role in the area of marketing and distribution of market garden and dairy products, quality production and high-end knowledge and innovation. Accordingly,

Figure 5: Employment and labour productivity by sector in 2030

The size of the balls in the figure indicates the size of the sector in terms of added value. This added value is determined by the deployment of labour and capital. The X axis represents the average change in labour productivity per annum in the 2010-2030 period. The Y axis indicates the average annual change in employment in the 2010-2030 period.

Source: Rabobank
the sector will undergo a further shift from production to services, as has been the case across the board for some time. Although the biobased economy has been gaining importance globally, the Dutch agricultural sector will only benefit from this to a limited extent. The government does not envisage a role for itself in this area. On account of the continuing above-average rise in labour productivity, employment in the agricultural sector will have dropped by some 20% by 2030 (figure 5).

In this scenario, it is the industrial sector that is most exposed to international competition. The process of offshoring and outsourcing a major part of production throughout the whole world will continue unabated. The rising standard of living worldwide will lead to growing consumption of luxury goods, while the consumption of necessary goods - often industrial products - will lag behind. As in the past, this sector will undergo a metamorphosis during the coming decades. In 2010, Dutch industry will concentrate mainly on the production of high-end goods and will concentrate on niche markets. The cross-border urban triangle of Liège-Maastricht-Aachen will specialise in advanced nanotechnology. The industrial sector will continue to grow in terms of added value at a rate of 2% annually. However, employment in the sector will decline as a result of strongly rising labour productivity, partly thanks to ICT applications and relatively cheap financing.

In this scenario, the number of households in the Netherlands will increase, albeit at a slower pace than previously. This is partly a consequence of labour migration. The continuing growth will feed demand for housing, which will benefit the construction sector. Despite the high economic growth in this sector, demand for office space will be low in 2030. Combined with a fairly low rise in labour productivity, employment in construction will increase somewhat. In addition, the number of companies operating in this sector will increase. The trend that has become apparent in recent years (self-employed workers who hire out their services) will continue.

The services sector will grow prolifically in Capricious Consent. Communication services and transport are rapid growers, as are services related to knowledge, such as in the area of technology and agricultural technology. Demand for services will increase thanks to ongoing globalisation and the fact that the Netherlands is moving further up the production chain, as well as rising general affluence. The more affluent an economy, the more demand shifts from goods to services. The widespread use of ICT will improve labour productivity in the transport sector and communication services in particular. This means the rise in employment in services will be less prolific than that of the added value. In this sector, the number of businesses will grow strongly as a result of the network economy (figure 6).

Figure 6: Development of the number of companies by sector

Source: Rabobank

At 20%, employment growth will be largest in the health care sector. Because health care is carried out mainly by people, it is difficult to achieve greater productivity in this sector. Consequently, more than half of all new jobs are created in this sector. Demand for long-term care in particular will increase in this scenario, due to population ageing and technological advances. Because of the prolific growth in affluence, households will have sufficient means to pay for care. As against rising expenditure on healthcare, savings will be made in the area of administration costs as a result of a downscaling of the welfare state.
Few companies have updated and adapted themselves to changing circumstances as much as DSM. The company’s history dates back to 1902, when the Dutch State Mines were founded. Coal gas is a by-product of the coking process, when large quantities of coal gas are released. DSM makes ammonia from these gasses, which is a chemical feedstock for the production of nitrogen fertilisers. This was the first step in a diversification process that ultimately meant that the company successfully survived the closure of the coal mines. After the Second World War, DSM exploited the growing interest in synthetic materials with its production of industrial chemicals and raw materials for synthetic fibers and threads. When the last state mine closed down in 1975, the company rapidly switched its focus. In 1989 DSM was floated on the stock exchange.

“In the 1970s and ‘80s, DSM implemented organisational changes in order to realise adequate scale, more guaranteed sales and diversification in high-quality synthetic materials and fine chemicals. In the 1990s we sought to find a better match between research output and market requirements; we then shifted our focus to developing products with a high added value: products for the pharmaceutical and food industries and high-end synthetic materials for the automobile and transport industries, electro-technology and the electronics sector. Every three to five years we hold a ‘Corporate Strategy Dialogue’, in which over 50 people meet to map the future direction of DSM. We also conduct interim evaluations to ascertain whether the strategy is still correct, or whether adjustments should be made. The world is constantly changing and it is important to anticipate these changes. In executing our strategy for 2010, DSM underwent a rapid process of internationalisation, both in the area of personnel and in the field of production activities. In 2007, we accelerated the processes of conversion to Life Sciences and Material Sciences, and for the coming years we have a strong focus on growth. This focus majors on three global trends: Global shifts in population concentrations and new technologies, especially in the communications industry; Climate and Energy; and Health and Wellness. Our evolution would not have been possible without vision, the willingness to change, a highly innovative capacity, a strong focus on the changing requirements of our clients and our deeply embedded roots in society.”

Hans Vossen (DSM)

“You have to constantly anticipate change”
International tensions are running high. There are hotbeds of strife all over the world. Some of these concern ethnic or religious issues, but also the scarcity of natural resources is leading to conflict between countries and regions. Protectionism is the order of the day. The European Union has fallen apart, and the world lives in a continuous state of distrust, high alert and fear. Strict security measures are deemed essential. The gap between incomes is large, and because technological advancements are not being shared, there is fierce competition on the technological front.
A chaotic world

The global financial crisis of 2008/2009 left a legacy of international currency warfare, a wave of short-sighted protectionist measures and trade boycotts. The financial world is localised and volatile. Globally a large number of banks have been nationalised, while the international capital market has been reduced to regional markets. The global economy has entered a downward spiral. In 2018 the World Trade Organization was disbanded, and emerging economies have exited from the World Bank and the International Monetary Fund. In 2023 the United States government is declared officially bankrupt, and the country loses ground in economic and political weight and importance. The era of the dollar as a reserve currency is over. However, an alternative has not yet emerged, since even the euro no longer exists.

In a simultaneous development, trade boycotts and the closure of the main export markets in the western world hamper the rise of new powers. But the failure of the latter to implement political and socio-economic reforms is also holding them back. The Chinese government has its work cut out in containing social unrest throughout the country. The streets of Beijing are full of millions of protestors on a daily basis, and anti-western sentiment is spilling over. The Indian government, on the other hand, is struggling with rising poverty (figure 7). A large number of factories in the sub-continent have ceased to operate and many former engineers are reduced to working a patch of land outside the city. Russia is effectively bankrupt and is torn by corruption and ethnic tensions. The country is headed for a new dictatorial regime. In Latin America, Venezuelan socialism is spreading to other countries, erupting in class struggles, particularly in Brazil and Argentina. In this scenario, Africa is likewise the scene of conflict over access to scarce natural resources. Nigeria is now the fifth largest supplier of oil to the United States, while China is also trying to gain influence in the West African state.

Figure 7: A world seething with conflict

Source: Rabobank
**Euro fairytale over**

The European Economic and Monetary Union fell apart in 2025. The Mediterranean euro countries were forced by severe financial problems to leave the eurozone and introduce their own currency: the medi (figure 8). Ireland decides to re-introduce the pound sterling. The fragmentation and political disintegration means an end to the European Union. The result is a bank-run, particularly in the new medi zone, an unprecedented loss of both confidence and affluence and an accumulation of tensions. European Union member states in Central and Eastern Europe drift further from the Union and focus their attention increasingly on collaboration with each other. The Northern European states continue with the euro and try as best they can to bolster economic relations in their own region. However, the position of European countries is weakened by population ageing and the failure to implement necessary reforms. Europe closes its borders, in order to protect its social security.

**Virtual escape**

Besides the division between the haves and the have-nots - chiefly determined by geographical boundaries - the gap is widening within countries between the connected and the disconnected. Where physical barriers are increasingly difficult to overcome, the virtual world reigns supreme. This is driven not so much by commercial motives, but more by escapism: highly educated young people of generation Z (born between 1994 and 2012 approximately) are escaping the hard reality of life and opting for a virtual, parallel life, where they enjoy greater freedom and have more control over their existence. Building on the many social networks, they create complete virtual societies for generation Z members throughout the world. Communication is not a problem, thanks to the availability of excellent translation programmes. Yet this escapism has its limitations. The virtual economy is constrained by the physical boundaries of the ‘traditional’ world. Moreover, various governments will try to curtail the power of this virtual world, resulting in an unproductive rivalry: new security technologies are soon hacked into.

Figure 8: Monetary union disbanded by 2030

![Monetary union disbanded by 2030](Figure8.png)

Source: Rabobank
and the economy. This leads to growing trade conflict between the two currency zones as well as to a cooling of the relationship with the United States by 2030.

**Scarcity of natural resources: impetus for technological breakthroughs**

There is little focus internationally on long term cross-border issues, such as safeguarding energy and the depletion of natural resources. The energy supply is becoming increasingly uncertain and the price of raw materials is soaring. In order to reduce energy dependence, western countries in particular are investing in energy-saving technologies and alternative energy sources, such as bio fuels, with the desired results. Government intervention is considerable. Public-private partnerships and subsidies on energy-saving products support this trend. Investment in bio fuels pushes up food prices, exacerbating the instability in a number of African countries. Some Asian economies are investing chiefly via sovereign wealth funds in resource-rich African countries, in exchange for natural resources. Governments are keeping a lid on the price of strategic resources via price regulation and subsidies.

**Self-sustenance a priority**

Owing to the lack of international coordination, countries have devised their own food strategy and policy, focusing on achieving a stable internal food supply and likewise stable domestic food prices. Negative effects of the food strategy can easily be passed on externally. Countries with a low level of self-sustenance - including China and the Gulf States - have undertaken large-scale food production for their own population in other countries. Thus Chinese companies are active in the agricultural sector in Mozambique and Namibia. This leads to rising tension and increased protectionism on international agrimarkets.
Business in chaos

For companies, the *Agile Antipoles* scenario is a question of survival. Dutch companies will be hit unprecedentedly hard by a combination of major international tensions, division within the monetary union and protectionism. Domestic demand has stagnated, international markets are inaccessible, the energy supply is uncertain and capital markets are fragmented and highly volatile. Private investment is R&D is negligible, the government stimulates investment in the high-tech industry. The commercial services sector is shrinking, while agriculture and industry are showing some limited growth, because domestic demand for these products has not entirely fallen away.
Demand for labour is limited
The trend towards deglobalisation, combined with major international tensions and the disbanding of the eurozone will inflict heavy damage on the open Dutch economy with its internationally oriented business sector. Consequently, demand for labour will contract. However, because the expected shift of industrial production to low-income countries has not taken place, nor have the agrimarkets been thrown open, the decline in demand for low-qualified labour in the world of Agile Antipoles will be less marked than in the other three scenarios. At the same time, owing to the substantial downsizing of social security, the labour supply will increase, particularly among older people and women. The pensionable age in 2025 will be 70 years in the Netherlands and Europe. And although this is high, it is still five years younger than in Japan. On the other hand, the increasing labour supply will be curtailed by the discouraged worker effect, which means it will be less marked than in Capricious Consent. The long-term unemployment rate will be high. Ultra short employment contracts will be a main feature of the jobs market.

Natural resources and capital: no more plenty
In this scenario, access to natural resources is becoming increasingly uncertain, with soaring prices as a result and hence also higher production costs. This will only be partly offset by more efficient use of energy, thanks to substantial government investment.

Because of widespread protectionism, international capital flows - in so far as these still exist - are subjected to strict regulation. The disappearance of the common currency has put an end to the integration of financial markets within the eurozone. Moreover, banks, especially in the new medi-zone are confronted with mass withdrawals of savings. This will have a knock-on effect on the availability and cost of financing for the business sector. Not only will new opportunities for profit then disappear, but the disciplining effect of the international capital markets on company management is lacking. Although the lending capacity of banks has been severely reduced, companies have little alternative but to opt for the tightened and more costly bank financing.

As soon as a job is done, employees are set aside. Once they have found themselves on the sidelines of the labour market, many people will fail to re-enter the employment process. This is the downside of economic flexibilisation: jobs are scarce, social security is limited and many workers are the victim. The difference between insiders and outsiders on the labour market is considerable. The disbanding of the monetary union has also put an end to the free movement of labour. This is particularly disadvantageous for highly educated workers. Immigration is also subjected to more stringent regulation, which means that the inflow of knowledge migrants will be virtually zero in 2030. As a result of the above described developments, combined with population ageing, participation in the workforce will be lower in 2030 than in 2010. In this scenario there is less investment in human capital, because of a lack of public funds and a low expected private return.
Closed doors everywhere
With uncertainty abounding and costs soaring, the globalisation of production processes has ceased. In some places the opposite development is taking place: where governments consider production processes to be vital, instead of being internationalised, these are subjected to national regulation. Protection of vital companies via state support and legislation is increasingly common - even nationalisation. This is most often the case among companies that supply electricity, water and food, as well as telecommunications companies, airlines and banks.

The tensions between regions and countries have induced internationally operating enterprises to withdraw from unsafe areas and abandon both sales markets and production locations. In fact, in this scenario, there will be lots of smaller companies, because of the lack of both major international competition and an international playing field. Furthermore, domestic demand will stagnate, while new markets remain closed. These smaller businesses are often part of a network that seeks to profit from pooling the available knowledge and production chain.

Despite, or perhaps because of the considerable uncertainties and volatility, technological progress is relatively strong. Yet technological breakthroughs are unbalanced, are mainly government driven and take place chiefly in the area of bio and nano technology, energy and advanced computer technology. New developments are often born from fear and suspicion. Over time, many of these innovations only reach companies that have good government connections, with clientelism playing a prominent role. Thus a level playing field for competition is far from the truth. A lack of international cooperation hampers the exchange of knowledge and the implementation of foreign innovations. Likewise, the fragmentation of global markets means the returns from these innovations are disappointing.

Structure of the economy
In this scenario, the Dutch economy will struggle. On balance, there will be no economic growth by 2030, with the intervening period consisting of alternating periods of growth and contraction. The stagnation of international trade and the disbanding of the eurozone will have left a negative legacy for Dutch companies.

For industry and agriculture, this may contain some opportunities, but only in the absence of better ones. Accordingly, the agricultural sector will encounter reduced competition on the domestic market, but will have little or no access to new markets. The same will apply to industry, with virtually no opportunities for development in growth or niche markets. The partial collapse of the eurozone will not help, needless to say. As opposed to this, outsourcing or relocating of production will proceed slowly in Agile Antipoles. However, partly thanks to public investment, energy-saving technology

Figure 10: Employment and labour productivity by sector in 2030

The size of the balls in the figure indicates the size of the sector in terms of added value. This added value is determined by the deployment of labour and capital. The X axis represents the average change in labour productivity per annum in the 2010-2030 period. The Y axis indicates the average annual change in employment in the 2010-2030 period.

Source: Rabobank
will advance, which will be to the benefit of Dutch chemical and high-tech companies. On account of these opposing forces, growth will be slight in both industry and agriculture. And employment will fall in these sectors, owing to the above average rise in labour productivity (figure 10).

For agriculture and industry it is partly a long-term process of re-evaluating core activities, given the changing environment, both nationally and internationally. Entrepreneurs who succeed in completing the transformation process as well as companies with a trustworthy image will be the ones that do well. Trust is key in this scenario.

Apart from the agricultural and industrial sectors, there will be some limited growth in the healthcare and government sectors. Population ageing is the main reason for growth in healthcare. Because of the overall lack of economic growth in this scenario, there are little means available to stimulate quality improvement and technological progress in this sector. In a world where conflict, fear and distrust prevail, government spending on security will rise. Employment will increase somewhat in areas such as defence, police and law enforcement (figure 11).

The problems facing the construction industry are of a much larger scale. With the population of the Netherlands in decline, the number of households falling and little demand from businesses for new buildings, times will be tough for the construction sector. Little support can be expected from the government. Consequently, the sector will contract significantly, with a considerable shake-out in the world of contractors, particularly in the area of commercial real estate.

The commercial services sector will also undergo contraction in this scenario - an unprecedented situation in the post-war period. This will be largely due to limited domestic demand (putting pressure on the retail trade) plus the lack of an external growth impulse. The only business to show growth in this sector will be communications technology.
CheapTickets.nl is a business venture of the Beins Travel Group which was originally set up in 1971 in the Dutch city of Oosterhout and was taken over in 1996 by Lex Beins and Ton Berends. While the majority of travel agencies opted to expand by opening offices in various cities, the Beins Travel Group decided to concentrate its expertise in one location and to explore other growth opportunities. Since 2001 the company has been selling tickets online. With the Internet making huge advances, Beins wholeheartedly embraced the new concept.

“In 2006 we realised that if we wanted to be a big player in the market, we would have to make significant investment. It was all or nothing. We invested all our profits in a marketing campaign, in order to gain as much exposure as possible within a short period: ads on radio and TV, billboard posters along the motorway. Flexibility is a key factor in this story. It is important to be able to act and respond promptly as situations develop. Selling airline tickets was a conscious decision. It is a straightforward product - the price of every airplane seat can be compared - and it is a market with an upside. Because online ticket sales are booming, the entire organisation has changed. We used to have lots of staff working behind the counter; now there is a complete call centre, and even a branch in Curacao to facilitate evening calls. When things were going well in the Netherlands, we explored possibilities for expanding abroad. The first place we looked at was Germany. However, as we know, a good football club in the Netherlands will not necessarily be a success in the Champions League. Germany was lagging behind in internet connections and online payment systems - two essential pre-conditions for selling online tickets. In 2008 we beefed up our team with a new CEO: Raymond Vrijenhoek. It’s his job to keep the team together and to be in charge of communication, so that Ton and I are free to engage in scouting activities and explore more countries - to become true Champions League players.”

Lex Beins (CheapTickets.nl)

“It was all or nothing”
Slow
**Slow Strife** is a bipolar world. As in the last century, tensions abound between East and West. However, now it is China and the United States that oppose each other. International organisations such as the International Monetary Fund and the United Nations continue to be dominated by the West. The arms race has evolved into rivalry over economic sanctions and strongly protectionist measures. Regionalism has become the norm. It has become impossible to avert the energy crisis. There is an increasing shortage of food and clean drinking water, and the gap between rich and poor, as well as between the generations is widening. Amid interminable discussion, these opposing forces lead to long-term stalemate situations.
Regionalism the norm

From the 1950s through the 1980s it was the United States and the Soviet Union that opposed each other menacingly during the Cold War. Half a century later, history is repeating itself, albeit with China now facing down the United States. The western economic system, based on market mechanisms is opposed by the state capitalism of new global players (figure 12). The West, and in particular the United States, is reluctant to share its influential position with the newcomers. The former cannot be relied on to support the necessary reforms within international organisations such as the International Monetary Fund, the United Nations and the World Bank, required to make room for new world powers. In 2030 the world is looking back on two ‘lost’ decades.

Asian countries are investing increasingly in strengthening political and trade links with the surrounding countries. ‘Easternization’ is an increasing trend. The main current of globalization has unleashed an opposing current of individuality and diversity. In 2018 the Asian Trade Organisation is set up in Beijing, and the Asian Economic Region is a fact. China, Russia and the Gulf States form the global economic space with Dubai and Doha as major financial and transport hubs intended to compete with New York and London. Scarcely two years after the Asian Trade Organisation has been formed, the Asian Security Council is set up - a counterpart to the UN Security Council - for the purpose of tackling security issues in the region. Because the security commitment of the United States in the region has weakened, Japan decides to seek collaboration with Beijing concerning regional security issues.

In the absence of a world trade agreement, international free trade in agricultural products and services fails to get off the ground. Bilateral agreements are reached, but trade barriers remain in place between the Eastern and Western trade blocks. There is a dearth of agreements on issues such as environmental and climate policy.

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Figure 12: The world divided into two trade blocks

Source: Rabobank

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Four future scenarios for businesses
Slow Strife
intellectual property rights and capital movement, which leads to a counter-productive rivalry in legislation and regulation between both trade blocks.

**European Union: status quo unchanged**
The role of the European Union in this bipolar world is relatively small. The bureaucratic and untransparent approach taken by Brussels in reaction to the global financial crisis of 2008/2009 has further strengthened the member states in their resolve to hold onto their sovereignty and concede less power. Moreover, economic integration with the Eastern European member states and further deepening of the internal market are fraught with difficulty (figure 13). Expansion of the European Union has been halted. At the same time, the north-west of Europe is intensifying its trade relations with the United States. Far-reaching bilateral liberalisation has resulted in a new transatlantic market without trade barriers. Consequently there is growth in the trade of services in particular, as well as greater labour mobility; however, a lack of reform is preventing the European economy from being sufficiently competitive and flexible to fully benefit from this development. The European financial sector is also subject to more stringent regulation compared to the United States. Encouraged by the strengthening of the transatlantic market, north-western Europe in particular finds itself leaning politically more and more to the United States.

**The energy crisis is a fact**
Access to natural resources is severely hampered. In and around the year 2030 three-quarters of oil and gas reserves worldwide are located in politically unstable regions. The problems are not only of a geo-political nature, but are also related to difficulties surrounding the necessary (coordinated) investment in the exploration and exploitation of new energy fields. For this reason, there is insufficient investment in the deep-sea fields of Latin America and in expanding the existing capacity in Russia. The Eastern trade block has managed...
to secure a degree of access to natural resources by strengthening relations with Iran and Russia. Although insufficient to meet its energy needs, this development has the effect of exacerbating tensions between West and East. For this reason, China - like the United States and some European countries - is investing in the heavily polluting but cheap coal industry. The costs of resource depletion, as well as environmental, health and external productivity effects are not factored in, because this is not internationally enforceable. Industrialisation conducted on the basis of non-sustainable methods ('business as usual') will lead to public health problems, and consequently to higher health costs and lower labour productivity.

**Food certainty**

Food certainty and food safety are of greater strategic importance in this bipolar world than in the other scenarios in terms of the balance of power and the posturing between the power blocks. As with the other natural resources, access to food is also of strategic importance: ‘food is policy’. International agricultural trade between the two power blocks is limited. This means that some specialisation processes are brought to a halt. European agricultural policy is of strategic importance for the Dutch agricultural sector. Protectionist subsidies lead to sub-optimal production and exacerbate the water shortage. Patterns of food production and consumption change slowly, which means that the global production of food will lag behind demand. The amount of agricultural land needed will increase.
A shortage of labour, an energy crisis and a fragmented capital market. These are tough times for businesses. Trade between two power blocks is hampered by inefficient regulation. The transatlantic market offers only some compensation. Although company investment in R&D is negligible, the rivalry between the two power blocks is a catalyst for development in the arms industry, space travel and medical technology. Production in the agricultural and industrial sectors is more or less stable, while commercial services show a fluctuating development.
Figure 14: Limited opportunities for companies

The surface area indicates the extent of the opportunities contained in the dimensions that determine the environment of companies. The higher the score on a specific dimension, the greater the opportunities or the smaller the constraints.

Source: Rabobank

Sluggish labour market

In a bipolar world, with a clear division between the eastern and western trade blocks, North-Western Europe, including the Netherlands, strengthens its trade relations with the United States. This transatlantic collaboration results in higher employment potential and greater labour mobility than for instance in Agile Antipoles. But because the government has failed to address its soft social policy and make the labour market more flexible, there is less growth in the labour supply, especially of older people and women. Accordingly, in this scenario, the pensionable age only reaches 68 years in 2050. The failure to implement reforms to the Dutch labour market means that it is difficult to combine work and private life (financially). Consequently large numbers of women opt to reduce their working hours or to leave the workforce altogether. The influx of migrant workers is insufficient to compensate for the growing shortage of labour, particularly in the public sector, and moreover leads to tensions in society. In this scenario, there is greater investment in education than is the case in Agile Antipoles because government spending is higher and the expected private returns of extra schooling are greater in a climate of slightly better economic growth.

Energy crisis and fragmented capital market

Access to natural resources is limited, both for geo-political reasons and on account of a lack of coordinated investment. Using cheap coal is the alternative. Nonetheless, production and transport costs are rising. At the same time, there is only limited investment in ICT and innovation, severely curbing the development of more efficient and flexible production processes.

The financial sector is regulated along the fault line of the two power blocks. Yet within these blocks regulation is far from harmonious, which has consequences for business financing. In the first place, the capital market is less deep than in Capricious Consent which pushes up the financing costs of large companies. And Chinese investment in Dutch companies is curbed by regulation. Secondly, the stringent regulation of the European banking sector has reduced the lending capacity of banks. While this can be partly offset by loans from United States’ banks, which are less strictly regulated, Dutch SMEs will continue to feel the squeeze, as they are dependent on financing from domestic banks.

East versus West

Owing to the rocky trade relations with China and India combined with less integration with Eastern Europe, both an important, growing import partner and an emerging export area have disappeared. This puts the Dutch trade position and Dutch affluence under pressure. One of the major bastions of economic growth in the past twenty years in the Netherlands has been toppled – i.e. the inward processing of goods from Asia to the European hinterland. Increased transatlantic trade can only partly compensate for this loss, because fundamental reforms to the Dutch economy are slow to be implemented. Furthermore, an acute shortage of natural resources, particularly in the West, is impacting negatively on economic development. In this scenario, Dutch international competitiveness as well as its logistic position has
lost much ground. The attractiveness of Netherlands as a location for basing business is also reduced, due to factors including inefficient regulation, tightness on the labour market and insufficient private investment in R&D. And Dutch businesses that are operating internationally are hampered by the fragmented regulatory frameworks between the two power blocks. Mergers and acquisitions are time-consuming and expensive, leading to an increasing number of loosely arranged joint ventures that are less efficient and less profitable. Attempts to access the sales market in the opposing power block are opposed by means of the extra regulation. Because it will be difficult for large corporations in the Netherlands to operate in this environment, the suppliers, the SMEs won’t have it easy either.

Technological progress is limited in this scenario. Owing to a lack of knowledge exchange, limited sales fields and the partial protection of patents, private investment in R&D is negligible. Governments are promoting innovation in their own trade block by setting up R&D centres with the help of subsidies. At the same time, the rivalry between the two trade blocks is an enormous catalyst for a number of industries, such as the weapons industry, space travel and medical technology.

Structure of the economy
During the next twenty years, the Dutch economy will grow at only a piecemeal pace, at a rate of less than 1% per annum. The disappearance of sales markets as well as the poor development of competitiveness will be mainly to blame. The lack of global trade agreements and the reform of the European common agricultural policy will contribute to a deterioration of international competitiveness in the Dutch agricultural sector. Agricultural exports outside the European Union (circa 20% of total exports) and agricultural imports of animal feed products will be hampered by protectionist measures. Thanks to its pre-eminent knowledge base, however, the sector will have succeeded in maintaining it strong position on the European market, therefore remaining stable on balance.

The industrial sector in the Netherlands, traditionally export oriented, will suffer due to the protectionist measures in this scenario and the difficulty in accessing the sales markets in the eastern trade block. Dutch industry will also have to battle with a shortage of natural resources, accompanied by rising commodities prices and more expensive financing. Consequently, the sector will have to focus on producing high-end goods and on servicing niche markets. In this scenario that will be more of a challenge than in *Capricious Consent* although the government-subsidised R&D centres may help somewhat. In *Slow Strife* production will remain fairly stable, given a rise in labour productivity, which will also lead to a decline in employment in the industrial sector (figure 15).

The construction sector is struggling and is losing ground. Because the rise in the number of households and income growth are low, demand for buying houses is falling back. The low economic growth, combined with

![Figure 15: Employment and labour productivity by sector in 2030](image-url)

The size of the balls in the figure indicates the size of the sector in terms of added value. This added value is determined by the deployment of labour and capital. The X axis represents the average change in labour productivity per annum in the 2010-2030 period. The Y axis indicates the average annual change in employment in the 2010-2030 period.

*Source: Rabobank*
an unfavourable climate for basing business, has pushed down investment in commercial property. Construction is further hampered in this scenario by inefficient regulation and unsatisfactory licensing policy.

The services sector shows a fluctuating development. While the transatlantic market has led to growth in services in particular, the lack of reform in the Dutch economy means it is not competitive or flexible enough to benefit from this trend. The services that mostly depend on the domestic market, such as commercial services, are growing in a piecemeal fashion. The same is true for the retail trade. In 2030, Dutch households will have scarcely more disposable income than today, which means total market volume will have expanded little. However, communications will still be a growth market. And trade and transport will fare better in this scenario than in Agile Antipoles, although the growth rate will be lower than is currently the case, on account of the lower level of world trade.

In 2030 there will be more employment in the government and health care sectors than in 2010. The share of the public sector in total employment will increase by 5% (figure 16). In particular, spending on health care, education and innovation will rise, with increasing financial problems for the government as a result. The health care sector will be marked by a hybrid mixture of market forces and state intervention. For example, new technology, originating from the United States, will not be entirely financed by public funds. However, this will lead to increased bureaucracy, curbing the hope for rise in productivity.

Figure 16: Employment development by sector

Source: Rabobank
Wolters Kluwer was formed in 1987 from a merger of the publishing company founded in 1889 by educator Aebele Kluwer, and Wolters Samsom (a combination of the publishers Wolters, Noordhoff and Samsom). By 2010, after a series of international acquisitions and expansion, Wolters Kluwer has evolved into a global, modern, professional (online) information and software services provider, servicing many professional fields, including the legal, fiscal, financial, administrative, HRM, medical and commercial professions.

“Twenty years ago, clients received everything on paper. Since then, the importance of online and software products has grown exponentially. Now, 55% of our turnover is electronically based. Only about a third is paper-based. The remainder consists of services related to internet and software. No matter what part of the world our clients are in, they want more solutions for better, more efficient and more accurate work processes. For instance, a surgeon wants to be able to use a system to record what has just taken place in the operating theatre and to complete the invoice directly. We convert the details into a workflow. For the hospital, the advantage is that part of the back-office can be reduced as many administrative processes are no longer necessary. At the same time this growing diversity means building a relationship with the client. Finding out how the client wants to receive the information. In what format? And what are the priorities? The client becomes an increasingly important player in the entire process. We conduct a lot of research with and about the end user. Because it is the client who determines a major part of the end product, it is important to involve him as much as possible in the process. You need to know how the client thinks and translate that into software and content. This is what makes Wolters Kluwer so unique, and what keeps clients loyal to us. Every year more and more people are renewing their subscription to us, mostly through a positive response to electronic products. This is where growth is - which also has a cultural dimension. Americans and Asians are generally more willing to go digital. The drive in our clients to constantly stay up to date is crucial to our existence.”

Boudewijn Beerkens (Wolters Kluwer)

“Translating clients’ preferences into solutions makes Wolters Kluwer unique”
This world is characterised by a strong commitment to improve the effectiveness of international organisations and to tackle cross-border issues in the area of energy and climate management and security. At the same time, decision-making progresses slowly, because so many interested parties are involved. Consensus is sought on virtually all issues, which holds up the entire process of seeking solutions. Technological breakthroughs are few and far between and focus mainly on improving production processes.
The West reaches out

By 2030, China, India, Brazil and Russia have evolved into influential world players (figure 17). The Chinese government has succeeded in embracing an open door policy, without jeopardising the political monopoly of the Communist Party. India is able to profit from the ongoing division of labour through knowledge technology and investment in infrastructure. At the same time, however, the country is still combating security problems, environmental pollution and over-population. China and India are engaged in rivalry over exerting influence in the region and around the Indian Ocean, with its strategic shipping routes for trade and the food and energy supply. In 2030, Russia still has no separation of powers or Trias Politica. The country was and is a steered democracy with a steered economy, but is regarded as a stable and reliable supplier of energy. In Latin-America, Brazil’s efforts to engineer an economic union are curbed by political instability and fragile law enforcement in the region.

In 2030, the United States is still the world’s economic, political and military superpower. Together with Europe, America is willing to support new global players in international organisations and forums, allowing them greater influence. In 2015 an initial round of discussions commences, with a view to reforming the UN Security Council. In 2027, Brazil, Japan and India have acquired permanent seats with veto rights. After 26 years of negotiations, Russia has been admitted to the World Trade Organisation. Illustrative of the Western olive branch is the close collaboration between NATO, Russia and China with a view to resolving conflicts such as those in the Middle East and Central Asia.

In 2025 a supra-national supervisor is set up, in which the International Monetary Fund and the Bank of International Settlements are subsumed. This is in response to the dissatisfaction of new world players concerning their ‘ceremonial’ role in the International Monetary Fund. Five years later, in 2030, thanks to the efforts of the new global powers, a new world trade agreement is...
signed at last. But because it will take until then for the new agreement to take effect, there will be no breakthrough in international free trade in agricultural products during the coming two decades.

**Political integration in Europe - a bridge too far**

In response to the financial crisis, the European Union has further deepened its monetary and economic integration. National markets for energy, services and government spending have been opened up. A sound internal market plus harmonised regulation have reinforced European competitiveness and made Europe into a major economic player on the global stage. Croatia joined the European Union in 2017, while relations with Turkey are being intensified (*figure 18*).

By contrast, political integration is proceeding less smoothly. Within the European Union, France and Germany are heading initiatives to achieve closer cooperation in the areas of foreign policy, immigration policy, defence and security. This has led to the formation of the European Council for Defence and Security in 2020.

**Scarcity of natural resources: putting a brake on sustainable growth**

The depletion of fossil fuels virtually comes to a head in 2030. Peak oil is now behind us. Because the geo-political landscape has been relatively stable for twenty years, the energy shortage has so far not become explosive. For the past two decades governments have been occupied with creating a climate that stimulates the long-term investment required to develop energy-saving technologies. By 2030, the permitted level of CO₂ emissions around a third lower than the level in 2000; this has been brought about by high CO₂ levies and expensive CO₂ rights; many processes are already low carbon or even no carbon. Cradle to cradle is the norm.

China, the United States and the European Union entered a collaboration ten years previously in the area of

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**Figure 18: European Union in 2030**

![Map of Europe showing EU and areas of close cooperation](source: Rabobank)
energy-saving technology, which is financed by the Chinese sovereign wealth fund, China Investment Corporation. Although this initiative goes a long way towards reducing energy intensity, it is not sufficient to substantially lower dependence on fossil fuels and other natural resources. High energy costs mean it is cost-effective to use biomass (such as plant or animal residues) for non-food applications. The focus on a biobased economy constitutes only a partial solution to the energy problem. Even with substantial government support, only a small part of the economy can be biobased by 2030.

**Food certainty through regulation**

The steady economic growth and the growing world population mean not only more demand for food, but demand for a different type of food, due to dietary change. However, the scope for additional food production is limited, and as is the case with population growth, is unequally distributed throughout the world. At the same time, there is optimal international coordination in tackling the food shortage problem. Multilateral organisations, including the Food and Agriculture Organisation, the World Bank and the World Trade Organisation have a broad support base with the involvement of many countries. Accordingly, there is support for the formation of a strategic supply fund of agricultural staples including grains and oil seeds. The aim is to promote stability in the food markets and mitigate the effects of price shocks on basic foodstuffs. The additional food required for the growing and changing global demand will be created via innovation, leading to higher yields from the existing production.
For companies, this scenario can best be described as ‘business as usual’. A shortage of labour and of natural resources is only being partially addressed. Capital flows are being subjected to regulation at the expense of new profitable investment opportunities. That said, companies are able to operate in an environment of economic stability and flourishing world trade. Better use is being made of existing ICT applications. In this scenario, the commercial services sector is performing better than average, while the industrial and agricultural sectors show only limited growth. Thus we see a continuation of a process that has already been ongoing for several decades.
The surface area indicates the extent of the opportunities contained in the dimensions that determine the environment of companies. The higher the score on a specific dimension, the greater the opportunities or the smaller the constraints.

**Source:** Rabobank

**Labour market reforms go ahead**

From a European and international perspective, the government finds itself impelled to introduce labour market reforms, in order to increase workforce participation. While these reforms have been announced, the transition phase is lengthy, because of a delay in reaching agreement among all the parties involved. In this scenario, solutions are sought in the consultation process, rather than in decisive government action. The pensionable age in the Netherlands only rises to 68 in 2040. Consequently, workforce participation by women and older age groups in particular rises only gradually. Businesses will have to invest considerably in recruitment in order to replace the outflow of workers. In order to compensate for population ageing, educated young migrants from Turkey, the Middle-East and Asia are welcomed into the labour force. Twenty years from now, a significant percentage of the population will be employed in the high-end knowledge sector, specialising in services, such as ICT, accountancy and finance. Because the European internal market is fully integrated and the international environment is stable, it will be relatively easy for (highly educated) employees to take up employment worldwide. With the integration of ICT applications continually improving, it will be possible for most companies to allow distance working and flexible working hours. The labour market is gradually evolving into a flexible market.

The government ensures a well educated workforce. However, with a still generous social security network, the incentive for schooling is no greater than is now the case. This results in a certain income gap, but is also a curb on the growth potential of the Dutch economy.

Scarcity of natural resources and regulated capital flows

The scarcity of natural resources almost reaches a head in 2030, driving up energy prices further. This has serious consequences for transport and production costs. In *Flowingly Forward*, the financial sector is subjected to strict regulation, which reduces the lending capacity of the banks. Likewise, the international capital markets are being regulated more closely, particularly regarding the transparency and comprehensibility of financial products. This limits the availability of capital to some extent, which is again reflected in financing costs. The regulatory system also explains why the sovereign wealth funds from the new world powers have difficulty in establishing a foothold in western countries. Nonetheless, plenty of large Dutch companies find their way to the international capital market. As a result, profitable investment opportunities are increasingly availed of, although it means that a greater number of Dutch companies come under the control of foreign shareholders. For the SMEs, little has changed in their scope for sourcing financing. Access to the international capital market is difficult for small and medium enterprises, which leaves them dependent on bank financing. However, those with a good business plan can still obtain loans.

**Stable economic environment**

Because this world is a relatively stable one, entrepre-
neurs will be reluctant to depart from their comfort zone and make changes to their strategy. After all, their strategy will be successful for a long time in this slow-to-change environment. Innovation will be gradual, thanks to the predictability of the competition and secure sales markets. The emphasis in this respect will be on process innovation: how to make production as efficient as possible. In a stable economic climate, it is easier to apply existing technologies to production processes, particularly in the services sector. ICT plays an important role in issues concerning setting up companies and further specialisation. However, because transport costs are relatively high in this scenario, there will be a limit to the globalisation of physical production chains.

Meanwhile, the Dutch export sector will profit from the growth in world trade. Internationally, the Netherlands will continue to play an important role in the area of financial services, water management, the creative industry and the agricultural sector. The Hague will increasingly profile itself as the judicial capital of Europe, making Netherlands an important base for international organisations. The Netherlands will also continue to play a major role in the redistribution of goods from its ports to the European hinterland. However, the limits to the physical infrastructure are becoming apparent, while solutions are hampered by stringent environmental regulations and the slow pace of decision-making processes.

Structure of the economy

In this scenario, the rate of Dutch economic growth is around 2% per annum. This is a solid performance, which is only possible thanks to global economic development in a stable environment, improved integration of ICT in business processes and the arrival of migrant workers to swell the numbers on a tightened labour market.

The agricultural sector will continue to emphasise high-end product knowledge and will succeed in further boosting productivity and remaining competitive. The government will try to stimulate this by broadening the knowledge base via the establishment of knowledge networks. The sharp rise in labour productivity will lead to a drop of some 20% in employment in the agricultural sector. Thanks to ongoing upscaling, the number of agribusinesses will decline by over 35%. While part of the sector, such as (greenhouse-) horticulture and floriculture can benefit from the expanding international sales markets, the low price elasticity of agricultural products means the sector as a whole will profit little from the rise in consumer income. Growth in the sector is curbed by strict environmental policy as well as spatial limitations, leading to a relocation of agricultural activities to Eastern Europe. On balance, Dutch agriculture will be ticking over modestly in 2030 (figure 20).

![Figure 20: Employment and labour productivity by sector in 2030](image)

The size of the balls in the figure indicates the size of the sector in terms of added value. This added value is determined by the deployment of labour and capital. The X axis represents the average change in labour productivity per annum in the 2010-2030 period. The Y axis indicates the average annual change in employment in the 2010-2030 period.

Source: Rabobank

The curb on agricultural activities in the Netherlands will have a knock-on effect on the Dutch food and stimulants industry. The new emphasis on biomass will only partly be able to compensate for this. Furthermore, the
global increase in affluence will translate into more robust trade in services, compared to industrial products. Because global competition is intensifying, Dutch industry will focus mainly on a number of niche markets. Accordingly, the Netherlands will be the main supplier of high-end products for German industry. And Dutch industry will benefit from improved ICT applications, making production processes more efficient. In addition, Dutch companies will relocate part of their production abroad, further continuing the upscaling process.

The combination of rising incomes and a slight increase in the number of households will push up demand for housing-related services. However, there is no question of a building boom. In this scenario, the emphasis will be on sustainable construction. In both the commercial property market and the residential property market, there will be a shift in emphasis from large-scale new projects to inner-city construction and renovation. A further continuing trend in the construction sector will be that of a growing number of self-employed and freelance individual operators (figure 21).

In this scenario, the commercial services sector is performing better than the sector average in the economy. In Flowingly Forward the last remaining impediments to a true internal market for services have been removed, which means free movement of services between the member states has become easier. Together with improved integration of ICT applications in business operations, labour productivity in the commercial services sector has increased. Expanding world trade has boosted demand for services related to distribution and transport, wholesale and communication. The relatively robust domestic demand has also boosted the turnover of retailers and financial services. The services sector will see an increase in the number of businesses, particularly small operators, reflecting the growth of the number of independently operating self-employed or freelance individuals in this sector.

ICT applications will likewise be successfully integrated into government services. This will make the public sector more efficient than is now the case, in 2010. However, it will be difficult to improve workforce productivity in the health care sector. As a result of population ageing combined with technological progress, health care expenditure will grow. In the area of defence, a common defence policy will be formulated, which will push up Dutch spending in this area towards the European average. Increased employment in the public sector will be the result.

Figure 21: Development of the number of businesses by sector

Source: Rabobank
Ruud Sondag (Van Gansewinkel)

“Cradle to cradle requires a long-term vision”

The name Van Gansewinkel is known to the Dutch public mainly for its waste collection trucks. Every day around 1,600 vehicles are on the road to collect waste (aka: raw materials) from businesses and households. However, the company is not merely a traditional waste collection business, it is a leading name in the field of waste processing and recycling - a knowledge organisation with a sound understanding of materials and logistic systems. Its home market is in the Benelux, but Van Gansewinkel is also active in France, Portugal, the Czech Republic, Poland and Hungary.

“Initially we specialised in the logistics of waste collection. Now, in 2010 we still collect waste, but now we are engaged in processing it to make raw materials and sustainable energy. This requires a great deal more in the area of knowledge and capital. To complete this transformation requires adaptability, vision and determination - both from our employees and from the stakeholders. The success of this transformation was not immediately visible. On the contrary in fact; money had to be invested first. But we believed in the concept and stuck to our guns. To us, waste is not just residual matter, it is the start of a valid new cycle. In a world where natural resources are scarce, we strive, together with our clients, to make as many waste products as possible suitable for meaningful re-usage. This means that working for and towards a sustainable society is at the core of our business. Thankfully, more and more companies are recognizing the validity of this objective. And we are still looking ahead - perhaps not as far as 30 years down the road, but we are mindful of the societal, economic and geo-political developments that may affect our business. We embrace the cradle to cradle principle, and together with our partners we seek out products and services that are designed to be used anew, via biological or technical recycling, for the same or a different purpose at the end of their initial life cycle. However, design and production processes cannot be changed overnight. Cradle to cradle requires a long-term vision.”
Four very scenarios have been described above. Average annual economic growth in the Netherlands could be 0% or it could be 3%, and income differences and workforce participation are larger in one scenario than in another. Likewise the pace of technological development and the extent of international competition vary per scenario. Clearly then, each scenario has its own set of implications for the various business sectors.

Figure 22 shows that the health care sector will continue to grow in each of the scenarios during the coming two decades. Demand for care will continue to rise apace with population ageing, progress in medical technology and increased affluence. These trends are present to a greater or lesser extent in all four scenarios.

Industrial production will increase in all the scenarios because the sector will specialise in high end products and niche markets. For agriculture, the picture is similar. In the past, various branches of industry relocated to low-income countries; however this does not mean that industry will disappear completely from the Netherlands. Granted, some sectors will have been lost by 2030, but others will have been gained in their place.

Because the industrial and agricultural sectors increasingly specialize in knowledge products, such as R&D, the distinction between industry and services will become increasingly blurred. Thus in all the scenarios, the future of the Netherlands will be that of a service-based economy to a greater or lesser extent. The importance of the commercial services sector will increase according as ICT applications become better integrated in production processes, and the easier it becomes to provide cross-border services within the European Union, plus the more international trade expands. This means that employment across the sectors will increasingly shift from agriculture and industry to health care and commercial services - a trend that has been visible for some decades.

What does all of this mean for you as an entrepreneur? Although we cannot be sure how the Dutch economy and businesses will be in two decades time, the sector developments show that there are opportunities. Figure 23 shows that the greater the surface area, the more opportunities there are for companies. The first scenario, Capricious Consent, offers the most possibilities; however this does not mean that being an entrepreneur will be easiest in this scenario. After all, a turbulent and highly competitive environment demands greater flexibility.
from an enterprise. The greatest uncertainties are found where the differences between the four scenarios are greatest, as shown in figure 23. This mainly concerns the development of sales markets, both at home and abroad, technology and the supply of natural resources.

![Figure 23: Comparing opportunities in the different scenarios](image)

**Source: Rabobank**

It is extremely important for an entrepreneur to formulate a strategy to be able to benefit early from opportunities, but also to be prepared for the uncertainties that a changing future may hold. The right way forward will depend greatly on both the sector concerned and the entrepreneur’s own judgement. An important consideration that determines the choice of strategy is vision for the future. What do I expect the future to hold? What are the major trends? Where are the markets heading?

The major changes in the economy and in society demand greater adaptability, a differentiating strategy and greater cooperation between companies. Companies with a flexible organisational structure, one that can be adapted to changing market circumstances will be the ones to succeed. This means that in the future, a company will increasingly seek to link in with a flexible network of suppliers, producers, vendors, clients and partners. Exploring new markets, investing in R&D, an efficient energy and natural resources policy and better integration of ICT applications are essential elements of the strategy of the future. For many companies, it will not suffice to assume that there is plenty of growth in just the Dutch market. The health care sector is an exception to this. Strategy planning requires the input of educated knowledge providers, which requires ongoing investment. Other challenges will be contained in the ageing and shrinking labour market. The result to be achieved by a company will increasingly depend on flexible cooperation with parties within one’s own network, and on investment in innovation and human capital.

The entrepreneur of the future is someone who is always looking ahead. Where is that point on the horizon? And what is the best way to get there? If you keep your eye on the ball, you will be able to react to the challenges that arise both sooner and later.
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