

# **THE POWER OF CUSTOMERS TO DRIVE INNOVATION**

**A Report by Business Decisions Limited for the Enterprise  
Directorate General of The European Commission**

**May 2003**

**Business Decisions Limited**

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## FOREWORD

Business Decisions Limited has produced this report on behalf of the Innovation Directorate of Enterprise DG in the European Commission, as part of the series of studies “relating to the implementation of the Community Innovation and SME Programme”.

A project team, consisting of Bruce Ballantine (leader) Bethan Devonald and Richard Meads, produced the report.

Associates from ten countries helped to produce the case studies and the national public policy monographs. I would like to thank them for their prompt, comprehensive contributions: Dr Rita Asplund, Juliet Carpenter, Dr Jacob Edler, Jokin Goyarrola, Francesco Grillo, Tomi Hussi, Dr Hannes Leo, Frank Skov Kristensen, Antoon van Luxembourg, Professor Vitor Corado Simoes, Rustam Lalkaka and Professor J.Ulijin. (Appendix I) I would also like to thank the companies who helped with the preparation of the case studies.

A multi-national Expert Panel supported the work of the team, and I would like to thank Philip Gamlin, Heinrich Hoefler, Timo Kekkonen, Beate Kettlitz, Herbert Steinwender, and William Stevens for their effective contributions – in writing, by telephone and in person. (Appendix II)

Finally, I would like to like to thank members of Innovation Directorate (Jean-Noel Durvy, Edward Phillips, Jose Ramon Tiscar and Aisling Quirke) for their comments. I would particularly like to acknowledge my grateful thanks to Klaus Schwall, the desk officer responsible for the project, who followed the project closely and provided many useful insights at strategic, tactical and administrative levels.

However, responsibility for the final report (particularly for any errors and omissions) remains with Business Decisions Limited alone.

Bruce Ballantine  
May 2003

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## EXECUTIVE SUMMARY

### 1. OBJECTIVES

Stimulating innovation is a central feature of the European Union’s Enterprise Policy because it is the most powerful long-term driver of economic growth and improvements in living standards. It is sustainable, however, only when companies convert new ideas into commercially successful products, services, and processes.

The innovation process begins with the emergence of new market opportunities, progresses through the process of developing new products and services, and finishes with customer and market acceptance.

To examine more closely the role of customers in the innovation process and to identify possible policy options, the Innovation Directorate of DG Enterprise supported a study on *“The power of customers to drive innovation”*.

This study had three principal objectives:

- To better understand the impact of customer-related factors on the innovation process within companies;
- To examine the current use of public policy initiatives which enhance the ability of companies to innovate in response to customer-based factors; and
- To identify public policy options for improving the ability of companies to involve customers in the innovation process.

The study involved: an extensive literature review; opinion surveys of 1 000 companies and 125 representative organisations in the EU and the USA on the role of customers in the innovation process; 25 case studies on the experience of companies with customers during the innovation process; and 12 country reviews of existing public policy initiatives to strengthen the role of the customer in the innovation process. The key conclusions of the surveys, the case studies and the country reviews have been integrated into the report (and its Appendixes). The complete texts of the case studies and the country reviews are included in a separate Annex to the report.

### 2. MAIN FINDINGS

*The study establishes that customers are of critical importance to the innovation process: they are the most important single driver of innovation. The study confirms that companies and representative organisations believe that governments can enhance the role of customers in the innovation process through public policy. It also highlights a number of priority areas for action identified by companies and representative organisations.*

#### 2.1. THE ROLE OF CUSTOMERS

##### *New Market Opportunities:*

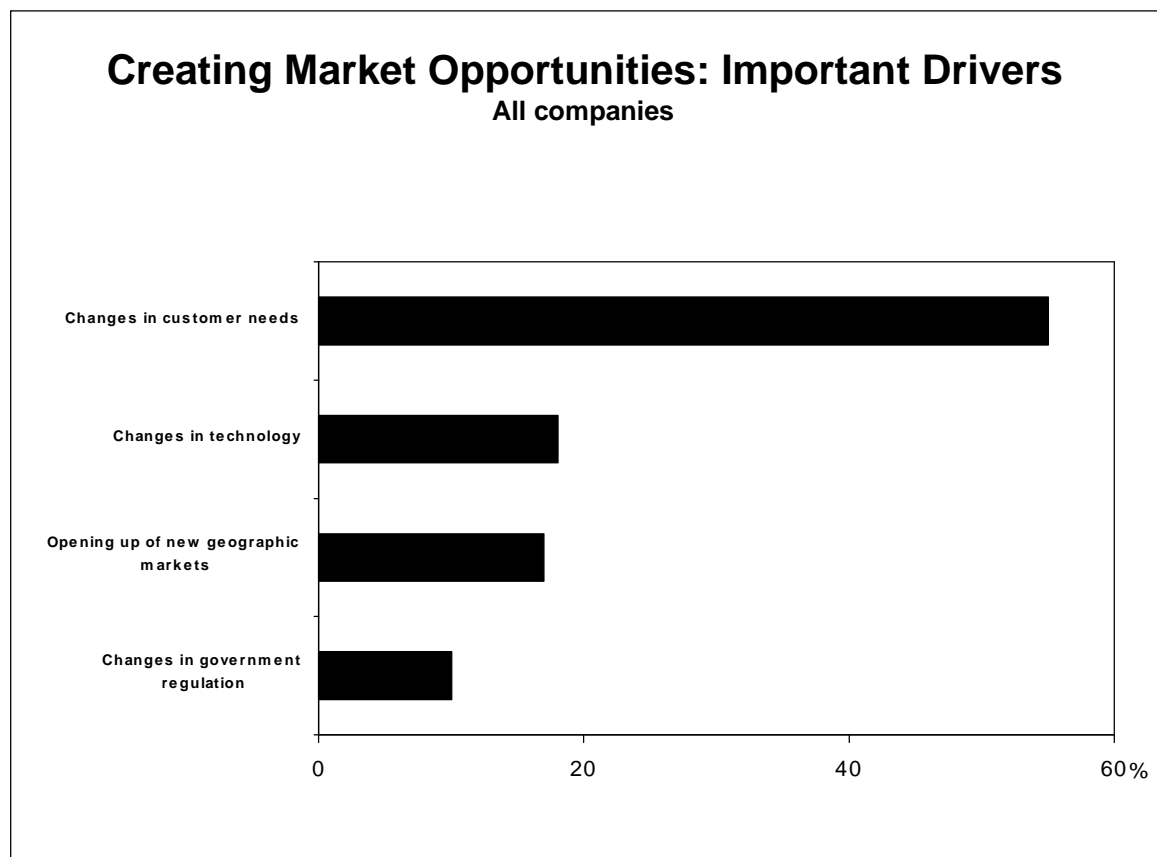
*Changes in customer needs are the most important drivers of new market opportunities for companies.*

The surveys show that changing customer needs are three times more important than other factors in creating innovation opportunities for companies.

In *Consumer Markets*, the most important factors affecting customer needs are changes in affluence and the growing concern with the wider quality of life amongst customers.

In contrast, the most important factors driving changes in customer needs in *Business-to-Business Markets* are the rapid development of new technologies, especially ICT, and the increased focus by customers on “core competencies”.

**Figure A**



**ADD REFERENCE - Source: BDL Survey of Companies for this study**

### **Companies involve Customers in the Innovation Process**

***Customers are involved in the innovation process within companies in a number of different ways.***

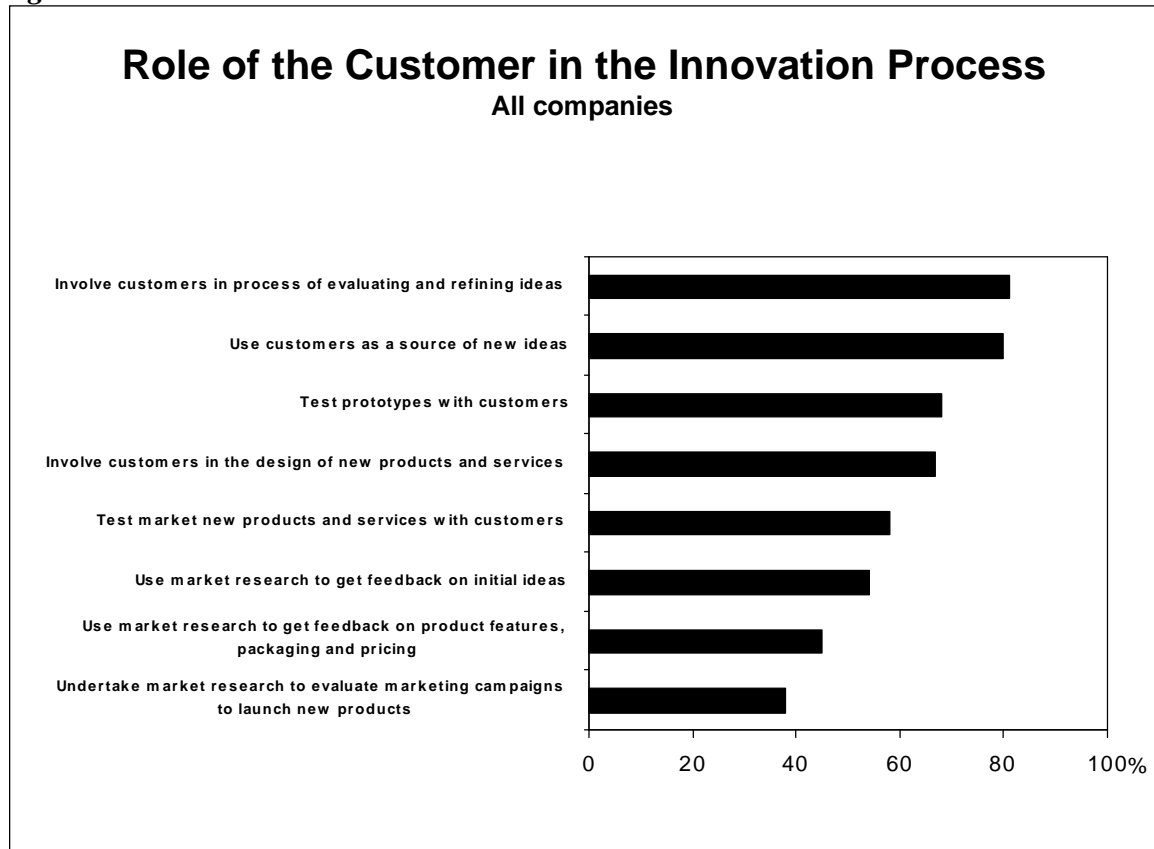
More than two-thirds of the companies surveyed report that they involve customers in:

- The provision of new ideas;
- The evaluation and refinement of ideas;
- The detailed design of new products and services; and

- The testing of prototypes.

Moreover, more than half the companies use customers to obtain feedback on ideas developed by the company and to test market new products.

**Figure B**



**ADD REFERENCE - Source: BDL Survey of Companies for this study**

### Market Acceptance

*Three factors stand out as the most important in influencing customers' decisions to buy new products or services:*

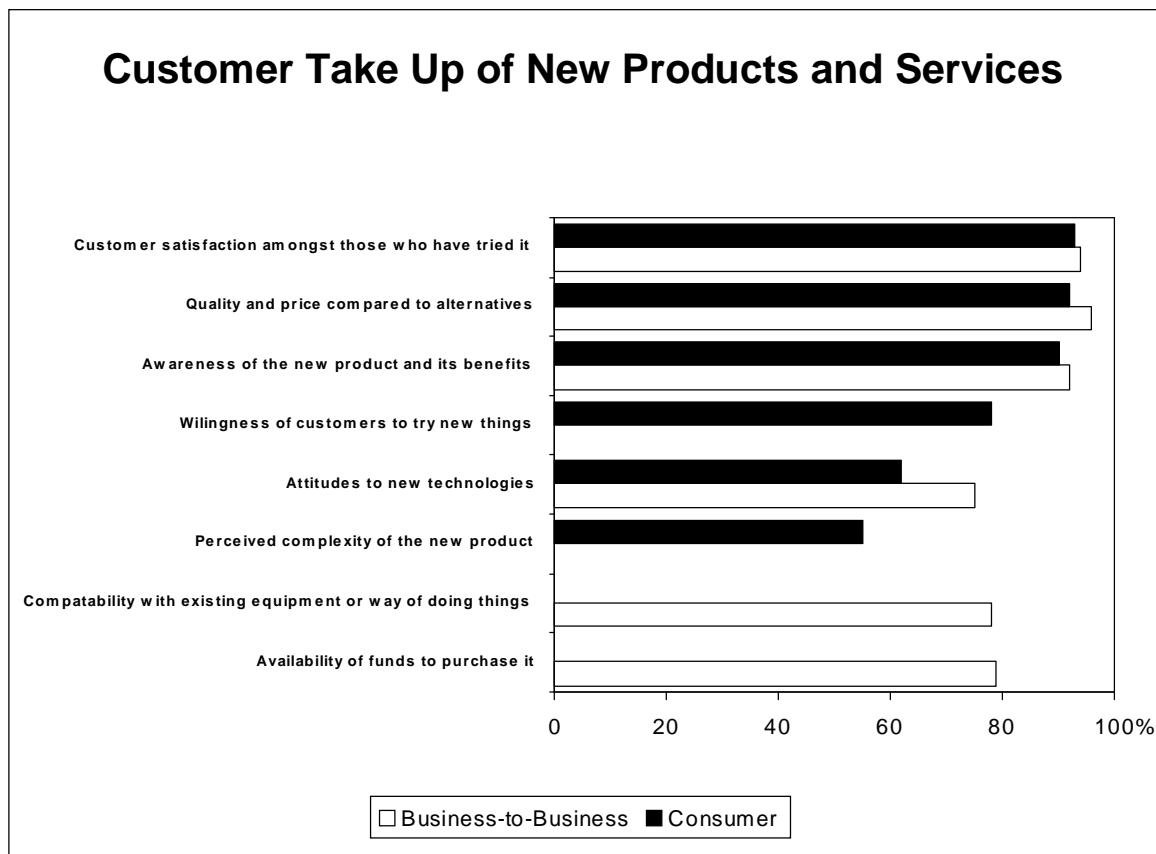
- Awareness of new products and their benefits;
- Quality and price compared to alternatives; and
- Customer satisfaction amongst those who have tried it.

In addition, in *Consumer Market*, the willingness of customers to try new things is important.

In *Business-to-Business Markets*, the availability of funds, compatibility with existing equipment or ways of doing things, and positive attitudes to new technologies are also important.

Moreover, “innovation-intensive” companies (where new products account for a large percentage of turnover) identify a number of structural and cultural pre-conditions that must be met before customers will purchase. Of particular importance are “soft” factors, such as favourable attitudes to risk-taking and new technologies and “pre-conditions”, such the ready availability of the skills and complementary assets needed to use the new products.

*Figure C*



**ADD REFERENCE - Source: BDL Survey of Companies for this study**

### **Customer-related Obstacles to Innovation**

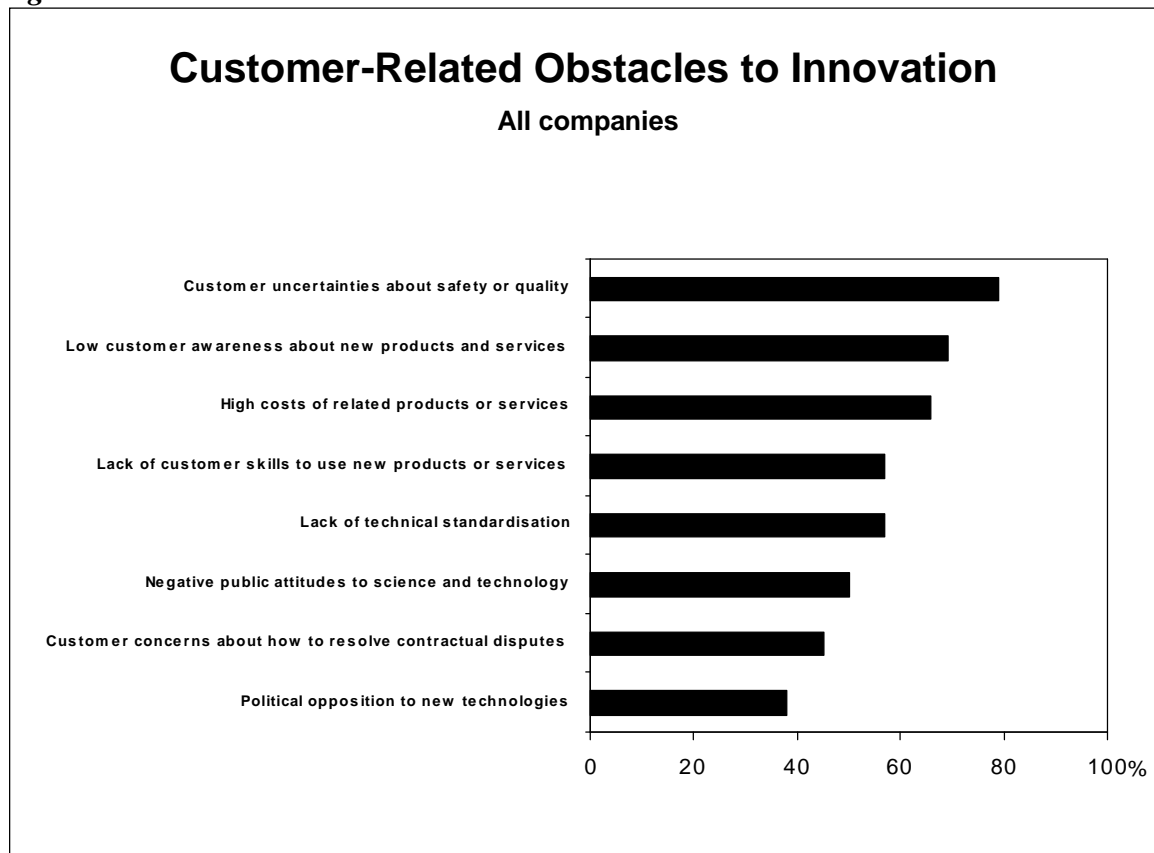
***Companies consider that there are a number of customer-related obstacles to innovation.***

More than two-thirds of the companies identify the most important customer-related obstacles to innovation as:

- Customer uncertainties about safety and quality;
- Low customer awareness about new products or services; and
- High costs of related products or services;

In addition, more than half the companies consider that there are obstacles associated with a lack of customer skills to use new products and services and a lack of technical standardisation.

**Figure D**



**ADD REFERENCE - Source: BDL Survey of Companies for this study**

## 2.2. THE ROLE OF PUBLIC POLICY INITIATIVES

Historically, governments have played an active role in fostering an environment in which innovation can flourish. They have focused principally on enhancing “framework conditions” and stimulating the development of supply-side factors, such as the availability of ideas, capital and skills.

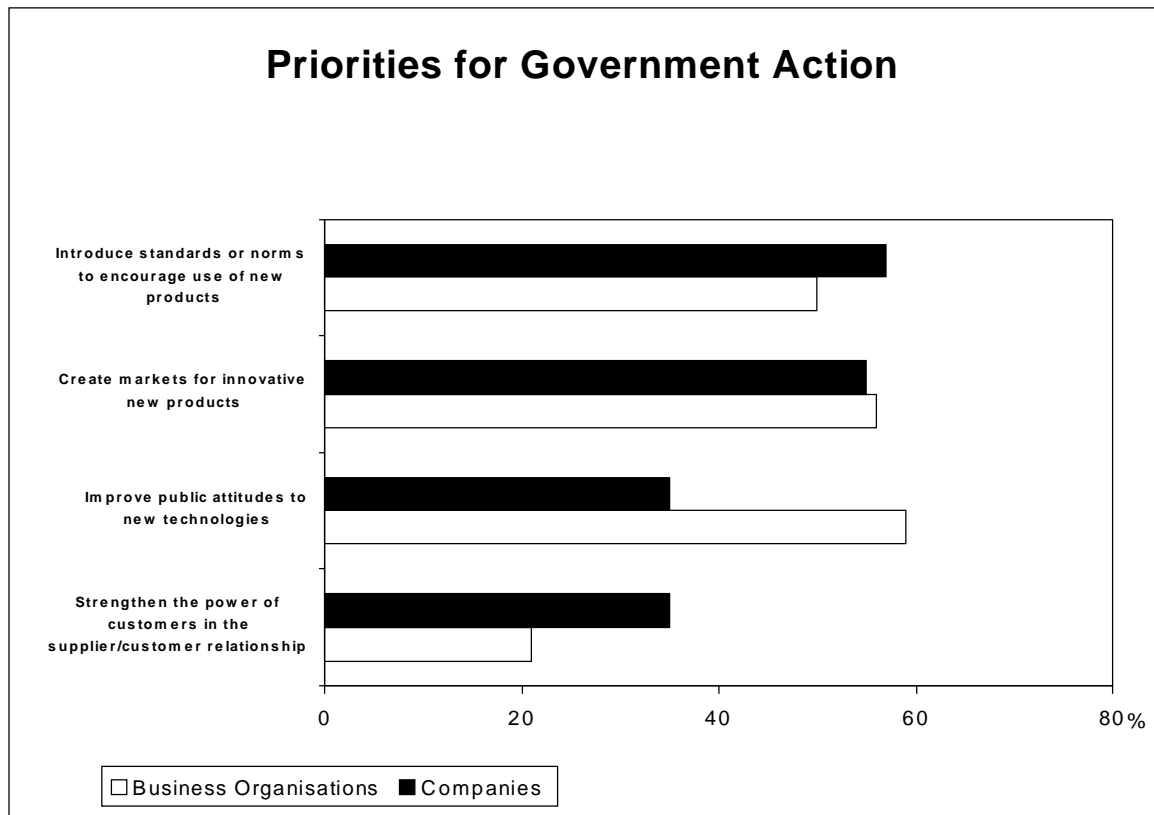
In contrast, few government policies have focused directly on stimulating innovation by strengthening demand-side factors, especially increased competition between firms and changes in the structure and nature of demand (“demanding customers”).

### *The potential benefit of government activities*

*Companies (and their business organisations) identify clear priorities for government action in the future.* They subscribe, in particular, to the need:

- To introduce standards and norms to encourage the use of new products;
- To create markets for innovative new products; and

- To increase public support for new technologies.

**Figure E**

**ADD REFERENCE - Source: BDL Survey of Companies for this study**

**Governments already undertake a range of initiatives**

*Governments already pursue a range of initiatives that help, indirectly, to strengthen the power of customers to drive innovation.*

These initiatives can be grouped into four broad categories:

- Building positive attitudes;
- Strengthening demand for goods and services (“improving market conditions”);
- Strengthening the power of customers to demand high-quality goods and services (“creating demanding customers”); and
- Enhancing “framework conditions”.

**A wider potential for public policy initiatives<sup>1</sup>**

<sup>1</sup> In its recent “Innovation Communication”, the European Commission also suggests several new directions for EU innovation policy development.

(<http://europa.eu.int/comm/enterprise/innovation/communication.htm>)

***Our study indicates that public policy could play a more important role in helping customers to drive the innovation process if governments strengthened three policy goals, which are of critical importance if customers are to stimulate the innovation process in companies:***

- The goal of creating “demanding customers”;
- The goal of improving the structural and cultural pre-conditions needed for the take-up of new products and services; and
- The goal of removing customer-related obstacles to innovation.

To this end, governments could build on the experience of various Member States in the following ways:

- ***By developing standards and norms*** to reduce uncertainties about quality and safety; to help customers to make informed choices; and to stimulate market development through greater compatibility with existing products.
- ***By providing political support for new technologies*** to ensure that consumers have a more balanced view of the benefits and risks of new technologies.
- ***By changing Education Policy*** to build positive attitudes to science, technology and risk-taking, and to develop skills needed to use new products and services.
- ***By enhancing Consumer Policy*** to improve the level and quality of information available to customers; and to provide consumers with “low-cost” ways to ensure that suppliers deliver on their promises.
- ***By adapting Enterprise Policy*** to help to “signal” the emergence of new markets; and to build the capacity of companies to involve customers in the innovation process.
- ***By establishing “Framework Conditions”*** to reduce the cost and expand the availability of complementary products and services; and maintain competitive pressure on suppliers.
- ***By implementing a number of organisational reforms***, to ensure central oversight of policy development and implementation and shared responsibility for the delivery of policies that help customers to drive the innovation process.

### 3. CONCLUSIONS

Customers are of critical importance within the “innovation chain” because they are an important driver of innovation; a major influence in the innovation process within companies; and the single most important factor determining whether a product or service is accepted in the market.

Our survey of companies and our case studies show that changes in customer needs are the most important driver of new market opportunities, which is, in turn, a principal driver of innovation.

New standards and norms, which help customers to make informed choices and reduce uncertainties about quality and safety, also play an important role in the development of new markets.

Moreover, customers are heavily involved in the process of developing and launching new products within companies.

But it is in the market acceptance phase that the role of customers is most pronounced: customers are the single most important factor in determining whether the market will accept a new product or service.

However, our research reveals that companies face a number of important customer-related obstacles to innovation. The challenge for policy-makers is, therefore, how to design programmes to overcome these obstacles and strengthen the role of customers in the innovation process.

We hope that this report will provide policy-makers with:

- A better understanding of the impact of customer-related factors on the innovation process within companies;
- Examples of public policy initiatives used by other policy-makers to enhance the ability of companies to innovate in response to customer-based factors; and
- A range of public policy options for improving the ability of companies to innovate.

## 1. INTRODUCTION

### 1.1. INNOVATION, CUSTOMERS, AND PUBLIC POLICY

Innovation is the most powerful long-term driver of economic growth and improvements in living standards. It encompasses the introduction of new and improved products, services, and processes in all sectors. It includes developments derived from investments in technology and other, less tangible, sources of knowledge, especially employees and customers. However, it is sustainable only when companies convert new ideas into commercially successful products, services, and processes.

It is, therefore, the activities of companies and clusters of companies that determine the level of innovation in any economy.

But the innovation process is no longer based on a linear process of “science push” or “market pull” within companies. Innovation takes place within a wider framework based on feedback and interactions between the different functions within a company and between the company and the wider “innovation system”, including its customers and its potential customers<sup>2</sup>.

Evidence from research confirms the importance of customers in the innovation process (See also Appendix III):

- Findings from the second Community Innovation Survey show that customers are one of the most important sources of innovatory ideas for manufacturing and service companies<sup>3</sup>.
- Work undertaken by the OECD and the European Commission highlights the importance of demand-based factors as drivers of innovation in the Service and ‘low-tech’ Manufacturing Sectors.<sup>4</sup>
- Research by Michael Porter of Harvard Business School identifies four broad attributes of a region or country that shape the environment within which company-level decisions take place<sup>5</sup>. These are:
  - “Factor conditions”;
  - “Related industries”;
  - “Inter-firm rivalry”;
  - “Demand conditions”, including the scale, mix and character of buyer needs.

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<sup>2</sup> See for example, Andersson T. ‘*Managing a Systems Approach to Technology and Innovation Policy*’ (OECD STI Review 22, 1999), OECD ‘*Creativity, Innovation, and Job Creation*’ (1997), OECD ‘*Managing National Innovation Systems*’ (1999) and Stevens C. ‘*The Knowledge-driven Economy*’ (OECD Observer, June/July 1996)

<sup>3</sup> CEC ‘*Community Innovation Survey 1997/1998*’ (1999)

<sup>4</sup> See for example, Hansen P. and Serin G. ‘*Will Low Technology Products Disappear? The Hidden Innovation Processes in Low Technology Industries*’ (Technological Forecasting and Social Change, 55, 1997), OECD ‘*Strategic Business Services*’ (1999), and Tether B., Miles I., Blind K., de Lison N., and Cainelli G. ‘*Innovation in the Service Sector – An Analysis of Data Collected under the Second Community Innovation Survey*’ (2001, a study for the European Commission)

<sup>5</sup> Porter M. ‘*The Competitive Advantage of Nations*’ (Harvard Business Review, March/April 1990), Porter M. and Stern S. ‘*Innovation: Location Matters*’ (MIT Sloan Management Review, Summer 2001), and Porter M. and Stern S. ‘*The New Challenges to America’s Prosperity – Findings from the Innovation Index*’ (1999, study for the US Council on Competitiveness)

- Work by UNICE identifies a series of major determinants of innovation in an economy. These “enabling conditions” include<sup>6</sup>:
  - Positive attitudes amongst citizens towards risk, enterprise, and new technologies; and
  - Favourable market conditions, especially the presence of demanding customers and “early adopters”.
- Recent research into sources of “radical innovation” highlights the importance of demand-based factors alongside changes in technology<sup>7</sup>. New opportunities emerge because of trends and discontinuities in industry structures driven by changes demography or attitudes, and because competitors redefine “market space”. In-depth understanding of customers, their needs, wants, attitudes, and behaviours, enables leading companies to re-define buyer groups; focus on customer needs rather than wants; and re-define traditional market segments.

Because of the importance of innovation for economic growth, governments play an active role in fostering an environment where innovatory activity can flourish. Historically, governments have sought to influence innovation by focusing on three principal supply-side factors<sup>8</sup>. Governments have:

- Invested in basic scientific research.
- Provided incentives to encourage companies to make investments in (applied) research and development.
- Encouraged the development of new technologies.
- Sought to create the conditions necessary to stimulate business innovation, including:
  - Properly functioning markets for products, labour, and capital;
  - Effective regulatory frameworks; education and training to up-grade skills; and
  - The protection of intellectual property rights.
- Improved the functioning of “innovation systems”, including strengthening technology transfer mechanisms and the capacity of organisations to absorb new technologies.

In contrast, few government policies focus directly on stimulating innovation by strengthening demand-side factors, especially through changes in the structure and nature of demand (“demanding customers”).

<sup>6</sup> UNICE ‘*Stimulating Creativity and Innovation in Europe – The UNICE Benchmarking Report 2000*’ (2001)

<sup>7</sup> See for example, Chan Kim W. and Mauborgne R. ‘*Creating New Market Space*’ (Harvard Business Review, January/February 1999) and Chan Kim W. and Mauborgne R. ‘*Knowing a Winning Business Idea When You See One*’ (Harvard Business Review, September/October 2000)

<sup>8</sup> See for example, Guinet J. and Pilat D. ‘*Promoting Innovation – does it matter?*’ (OECD Observer, Summer 1997) MERIT ‘*Innovation Policy in the Knowledge-based Economy*’ (2000, study for the European Commission), OECD ‘*Technology, Productivity, and Job Creation*’ (1996), and, OECD ‘*Industrial Competitiveness in the Knowledge-based Economy – The New Role of Governments*’ (1997)

At Lisbon, a new strategic goal for the European Union was established: to become the most competitive and dynamic knowledge-driven economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion<sup>9</sup>.

This goal can only be achieved by making Europe more innovative and entrepreneurial. Specifically, there is a need for a systematic approach to fostering entrepreneurship and innovation by encouraging risk taking, by building a dynamic enterprise environment, and by ensuring that companies have effective access to markets<sup>10</sup>.

As part of this process, the Innovation Directorate of DG Enterprise established a project to examine the role of customers in the innovation process and to identify possible policy options.

## 1.2. PROJECT OBJECTIVES

The project has three principal objectives:

- To better understand the impact of customer-related factors on the innovation process within companies.
- To examine the use of public policy initiatives to enhance the ability of companies to innovate in response to customer-based factors.
- To identify public policy options for improving the ability of companies to innovate.

## 1.3. THE ROLE OF THE CUSTOMER IN THE “INNOVATION CHAIN”

To meet these objectives, the research identifies the role of customers in the innovation process, and then determines the potential scope for public policy action to strengthen the power of customers to drive innovatory activity.

Evidence from a wide range of research suggests that customers influence innovation in three main ways<sup>11</sup>.

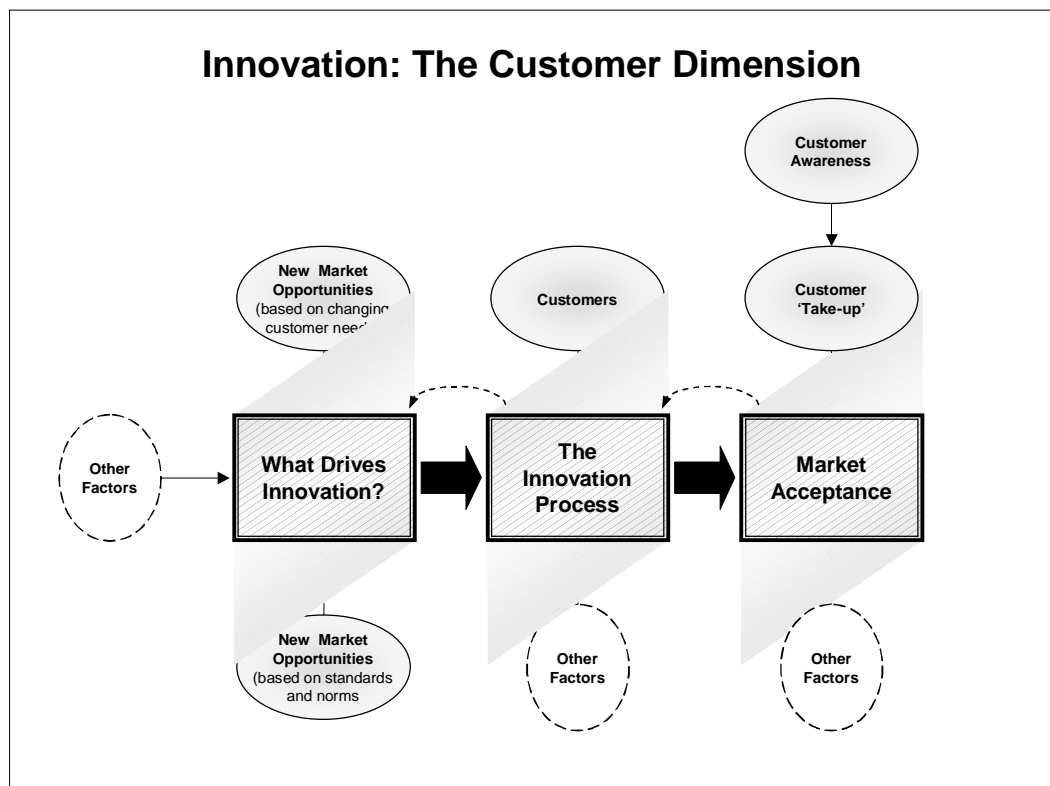
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<sup>9</sup> CEC ‘Lisbon European Council – Presidency Conclusions’ (2000)

<sup>10</sup> CEC ‘Challenges for Enterprise Policy in the Knowledge-driven Economy’ (2000, Communication from the Commission)

<sup>11</sup> See for example, Berthon P., Hulbert J., and Pitt L. ‘To Serve or Create? Strategic Orientations Toward Customers and Innovation’ (California Management Review, Fall 1999), Buzzell R. and Gale B. ‘The PIMS Principles: Linking Strategy to Performance’ (1987), Chan Kim W. and Mauborgne R. ‘Creating New Market Space’ (Harvard Business Review, January/February 1999), Clark K. and Wheelwright S. eds. ‘The Product Development Challenge’ (1995), Drucker P. ‘Innovation and Entrepreneurship: Practices and Principles’, von Hippel E. ‘Sources of Innovation’ (McKinsey Quarterly, Winter 1987), Kashani K., Miller J., and Clayton T. ‘A Virtuous Cycle: Innovation, Consumer Value and Communication – Research Evidence from Today’s Brand-Builders’ (2000, a study by PIMS and IMD for AIM), and Porter M. ‘The Competitive Advantage of Nations’ (1990)

Exhibit 1



This “innovation chain” begins with the development of new market opportunities; progresses through the process of developing new products and services; and finishes with market acceptance. Within this chain, customers are of critical importance.

- **Customers are an important driver of innovation:** New market opportunities emerge principally because of changes in customer needs. New opportunities also emerge because of the introduction of new standards and norms by governments and other bodies acting on behalf of citizens and customers.
- **Customers influence the innovation process:** They play a significant role in the development of new products and services.
  - They are an important source of new ideas in all customer/market sectors – incremental and radical innovations, high-tech and low-tech innovations, and innovations in Consumer and Business-to-Business Markets.
  - They assist in the process of new product development, particularly in the area of refining and evaluating ideas.
  - They assist in the specific design of new products or services.
  - They assist in the development of market launch plans.
  - They play an important role in test marketing.

- **Customers are the most important determinant whether a product or service is accepted in the market:** Customer awareness of the benefits of new products or services is a critical factor in determining acceptance. Moreover, the decisions of customers are the primary factor in determining whether a product or service is “taken-up” (purchased) or not.

## 1.4. PROJECT METHODOLOGY

### 1.4.1. Overall Approach

Our research uses this model to structure analysis of the scope for public policy to strengthen the ability of customers to drive the innovation process. For each part of the chain, the research identifies the influence that customers exert on the innovation process and examines how public policy initiatives might help. The research also identifies the principal customer-based obstacles to innovation, the range of existing policy initiatives, and the policy changes that companies want governments to introduce. Taken together, these findings provide the “building blocks” for the identification of possible future policy options to strengthen the role of customers in the innovation process.

### 1.4.2. Project Stages

Work was carried out in three distinct stages (See also Appendix IV):

- In Stage One of the project, we carried out a literature search. This enabled us to develop preliminary hypotheses.
- Extensive fieldwork was carried out in Stage Two, to provide a detailed understanding of the role of customers in the innovation process and to identify existing public policy trends and initiatives.
  - Surveys of 1,000 companies in the EU and the USA, and 125 Representative Organisations in the EU and the USA. (See also Appendix V)
  - Ten short case studies to illustrate the impact of customers on the development of new markets (See also Appendix VI), and 15 case studies to examine the role of customers in the internal innovation process within companies. (See also Appendix VII)
  - Twelve brief country reviews of existing public policy initiatives, ten Member States, the EU, and the USA, that strengthen the role of customers in the innovation process. (See also Appendix VIII)
- In Stage Three of the project, the findings were analysed, conclusions and public policy options were developed, and the final report was produced.

## **1.5. PROJECT MANAGEMENT**

A team from Business Decisions Limited (BDL) carried out the project supported by Abacus Research, an independent market research agency, and a network of country associates.

A Multi-national Expert Panel of experts from academia, business, business support organisations, venture capital, government, and consumer organisations supported the team's work.

## **1.6. Report Structure**

Chapters 2 and 3 outline the results of our surveys on the views of companies on the principal drivers of innovation – the importance of changing customer needs and the importance of standards and norms.

Chapter 4 outlines the role of customers in the innovation process while Chapter 5 covers the “market acceptance” process in more detail.

Chapter 6 outlines the views of companies and business organisations on the principal remaining customer-related obstacles to innovation, and Chapter 7 highlights the reform priorities of the business sector.

Chapter 8 provides examples of public policy instruments that help to strengthen the power of customers to drive innovation.

Chapter 9 suggests a number of major public policy options that governments could use to further strengthen the power of customers to drive innovation. Chapter 10 draws the key elements of the report together.

## 2. CHANGING CUSTOMER NEEDS

*Changing customer needs are the most important driver of new opportunities for companies.*

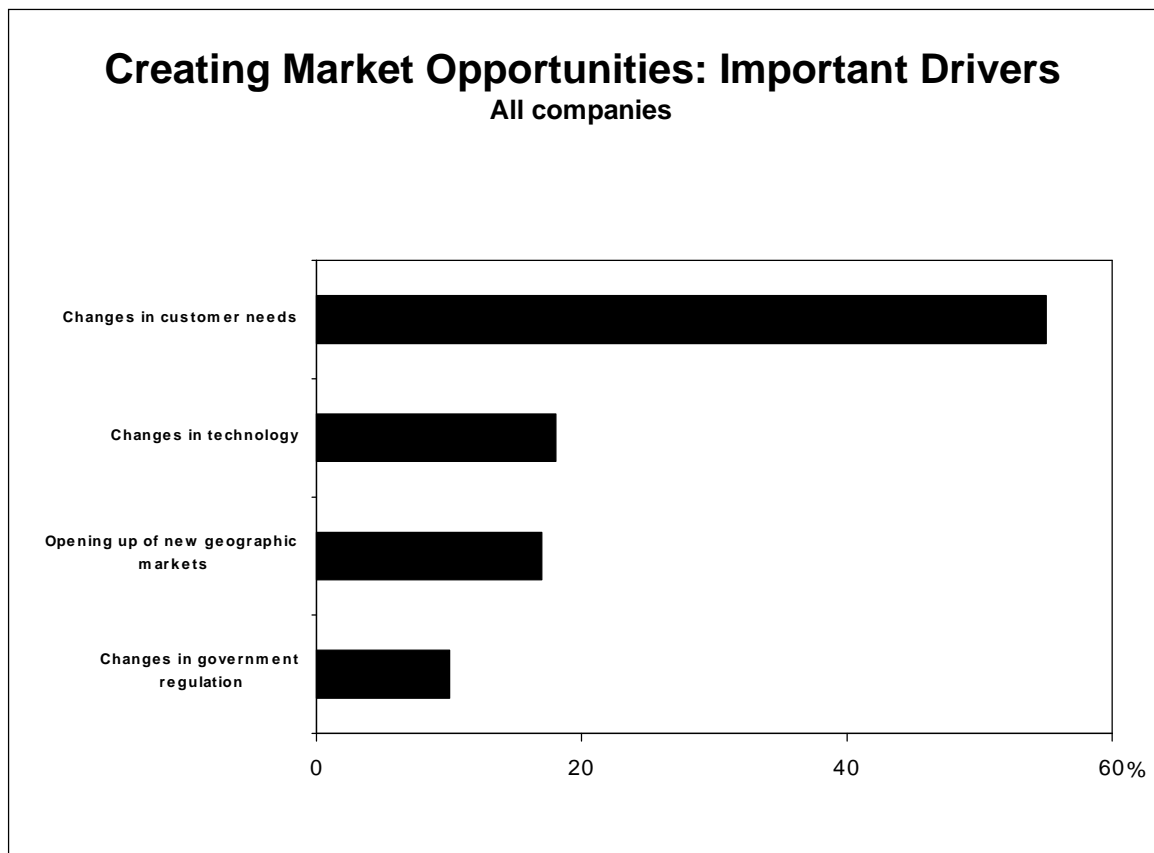
*The most important factors driving changes in needs in Consumer Markets (B2C), are increases in wealth and a growing concern with the wider quality of life amongst customers. In contrast, the most important factors driving changes in Business-to-Business Markets (B2B) are the rapid development of new technologies (especially ICT), and the increased focus by customers on “core competences”.*

### 2.1. THE KEY DRIVERS

Companies were asked which factors were the most important in creating new market opportunities for their companies.

Our survey shows that changes in customer needs are the most important single driver of new opportunities for companies.

*Figure 1*



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## **2.2. THE SURVEY**

### **2.2.1. Introduction**

In recent years, there have been significant changes in the patterns of customer demand in both “Consumer” and “Business-to-Business” Markets. These changes have presented major opportunities to innovators. Our survey identifies some of the key factors that lie behind these changes<sup>12</sup>. Different lists of factors were developed for companies serving the private (end) Consumer Market and those serving the Business Market.

### **2.2.2. Business-to-Consumer Markets**

#### **Overall Analysis**

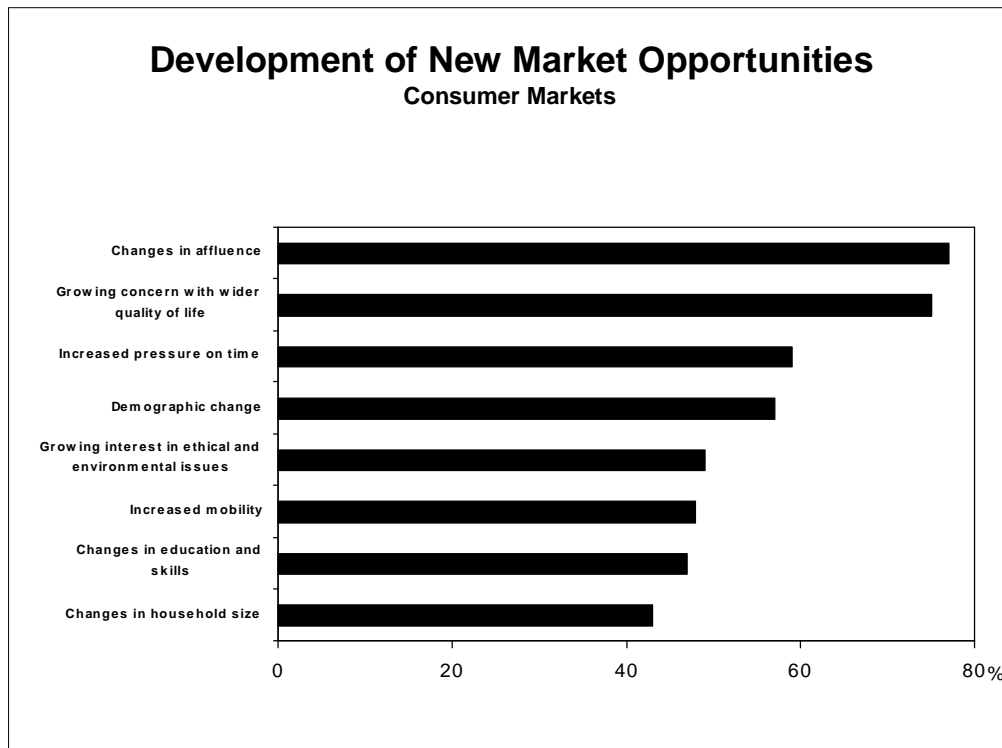
Consumer companies were asked which factors were the most important in creating new market opportunities for their companies in Business-to-Consumer Markets (B2C).

Our survey shows that changes in affluence and a growing concern with a wider quality of life are the two key drivers of market opportunities in B2C Markets.

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<sup>12</sup> See for example, Arthur D. Little ‘*Global Survey of Innovation*’ (1997), Day G. ‘*What does it mean to be market-driven?*’ (Business Strategy Review, Vol. 9, 1998, Hamel G. ‘*Bringing Silicon Valley Inside*’ (Harvard Business Review, September/October 1999), Hamel G. and Prahalad C. ‘*Competing for the Future*’ (1994), Henley Centre ‘*Planning for Social Change*’ (2000), Price Waterhouse Coopers ‘*Innovation and Growth: A Global Perspective*’ (2000) and Tersine R. and Harvey M. ‘*Global Customisation of Markets has Arrived*’ (European Management Journal, Vol. 16, 1998).

Figure 2



#### In Consumer Markets:

- More than three-quarters of all companies identified changes in affluence and growing concern with the wider quality of life as the most important trends in changing customer needs.

Earnings have grown at a faster rate than ever in the last 50 years and are now more than three times greater than the level reached in 1950, so that individuals spend relatively less on the basic necessities of life (such as food and housing). They now have more discretion over how to spend the remainder.

Increasing affluence has also encouraged people to take more interest in the wider quality of their lives, including, for example, health, personal security, the environment, and social relationships.

- More than half the companies mentioned the importance of “increasing pressure on time” and “demographic changes” as other important drivers of changing customer needs.

Working hours have fallen almost continuously during the last century, but demands on spare time have increased, because of increases in the number of people working (particularly married women who combine the dual roles of career-woman, and wife and mother).

The average age of the population has increased in the last half-century: fewer children are being born and people are living longer.

- Slightly less than half the companies mentioned the other factors included in the survey. These were:
  - Growing interest in ethical and environmental issues;
  - Increased mobility;
  - Changes in education and skills; and
  - Changes in household size.

The trends identified in the survey are reinforced by our Case Studies.

Steady growth in real incomes plus falling real costs of ‘necessities’ (especially food) has meant that discretionary income has grown significantly for most EU citizens since the Second World War. Household spending patterns have changed as a result. More income is now spent on products and services to satisfy non-functional needs, such as leisure, or to satisfy emotional needs, such as the desire for status or ‘self-actualisation’.

### *Exhibit 2*

#### **RISING AFFLUENCE**

A number of our cases show evidence of rising affluence enabling citizens to “trade cash for time” (Forecourt Retailing); to improve health and well-being (Health Foods); to enjoy new leisure experiences (Entertainment Software); and to enjoy leisure and pleasure in retirement (Retirement Communities);

Market Opportunity Case Studies

Moreover, an increasing number of consumers have, over time, become more concerned with the nature of the products and services they consume, and how they are produced. In part this is the result of increased affluence but it also reflects a change in social attitudes brought about by factors such as improved education and increased access to information.

### *Exhibit 3*

#### **GROWING CONCERNS WITH THE WIDER QUALITY OF LIFE**

The Health Foods case shows how there has been a growing awareness of the possible side effects of orthodox medicines and increasing knowledge about the potential benefits of natural healthcare. There has also been a growth in the level of interest in “self-medication”, which has led to growth in demand for homeopathic and herbal remedies.

Market Opportunity Case Studies

Another factor driving new market opportunities is “demographic change”.

Exhibit 4

**DEMOGRAPHIC CHANGE**

The case study on the US Retirement Communities Market shows that customer factors have played a significant role in driving this market, including the changing demographic structure of the US population; and improvements in life expectancy leading to the massive growth in the “seniors” age group forecast over the next two decades.

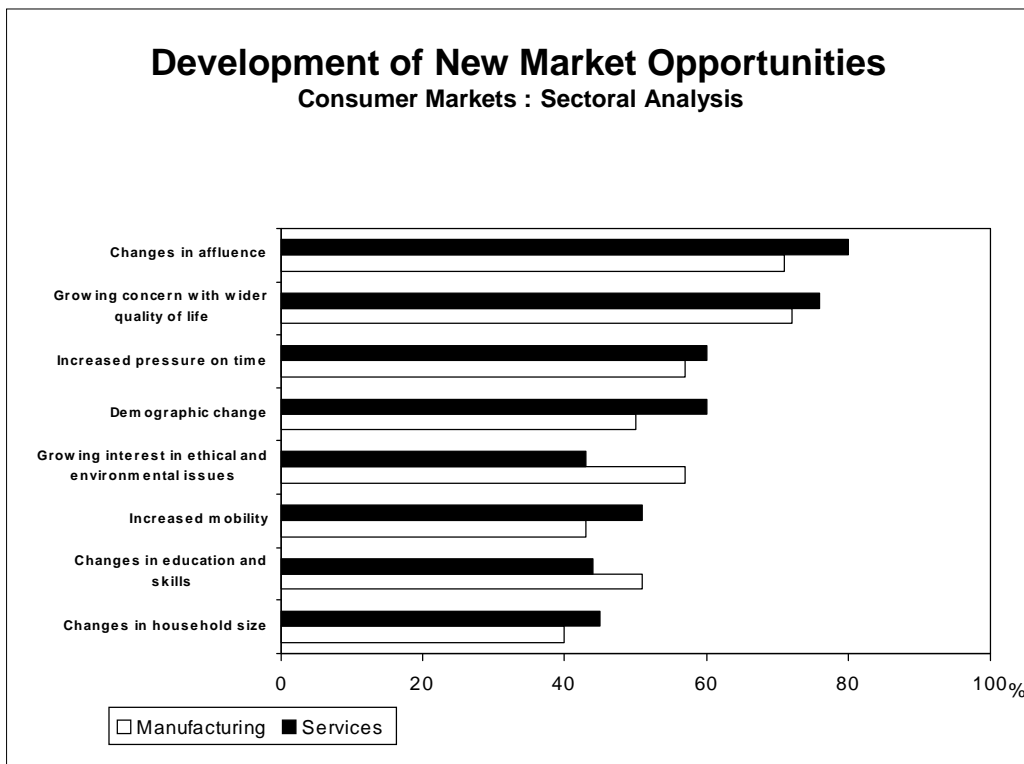
Other customer-related factors that have influenced the development of the market for Retirement Communities include: medical advances that have significantly prolonged the life of those suffering from chronic diseases; increasing levels of affluence that have enabled many Americans to provide better for their old age; the breakdown of the nuclear family and the increase in working women that have meant that it is often no longer practical for children to cater for elderly parents in the home; and the increasing demand for “Retirement Leisure” amongst the early retired “fifty-something empty nesters”.

Market Opportunity Case Studies

**Sectoral Differences**

Companies of different sizes hold similar views, but there are differences between companies in different sectors.

Figure 3



Service Sector companies place more emphasis than Manufacturers on:

- Changes in affluence;
- Demographic change; and
- Increasing mobility.

Whereas manufacturers place more emphasis than service companies on:

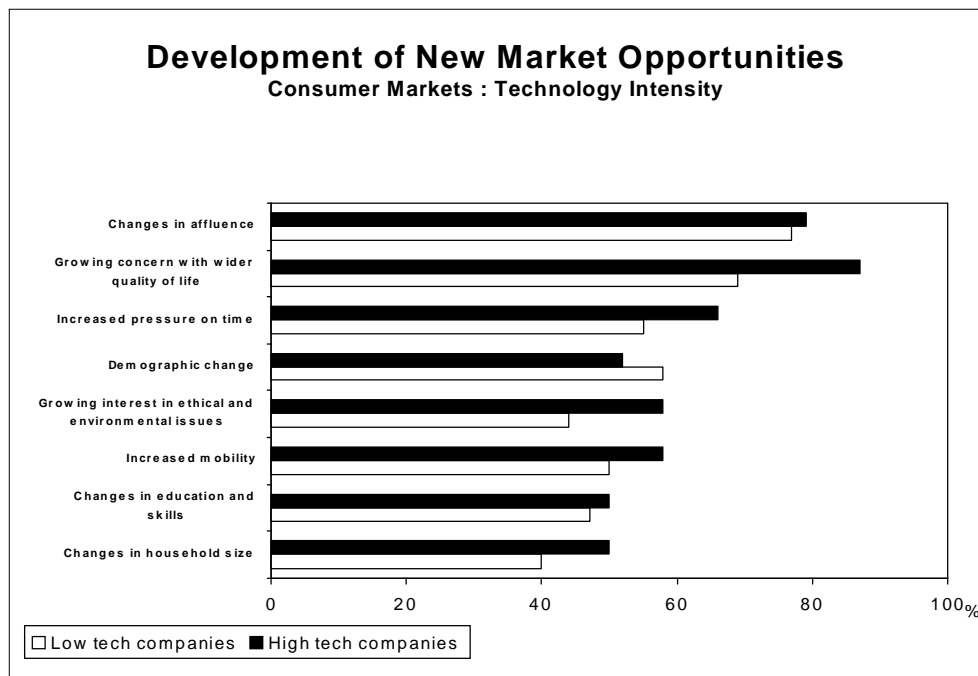
- The growing interest in ethical and environmental issues.

One reason for these differences is that the factors driving change affect different sectors in different ways. Rising affluence combined with an ageing population has, for example, tended to increase demand for services such as specialist retirement communities, mutual funds, and long-distance holidays rather than for manufactured goods, for example.

### Differences in Technology

Other important differences are to be found in the nature of the factors that influence the development of new market opportunities in “high-tech” and “low-tech” companies.

Figure 4



High-tech companies place more emphasis than low-tech companies on all the factors except one. High-tech companies particularly emphasise opportunities arising from:

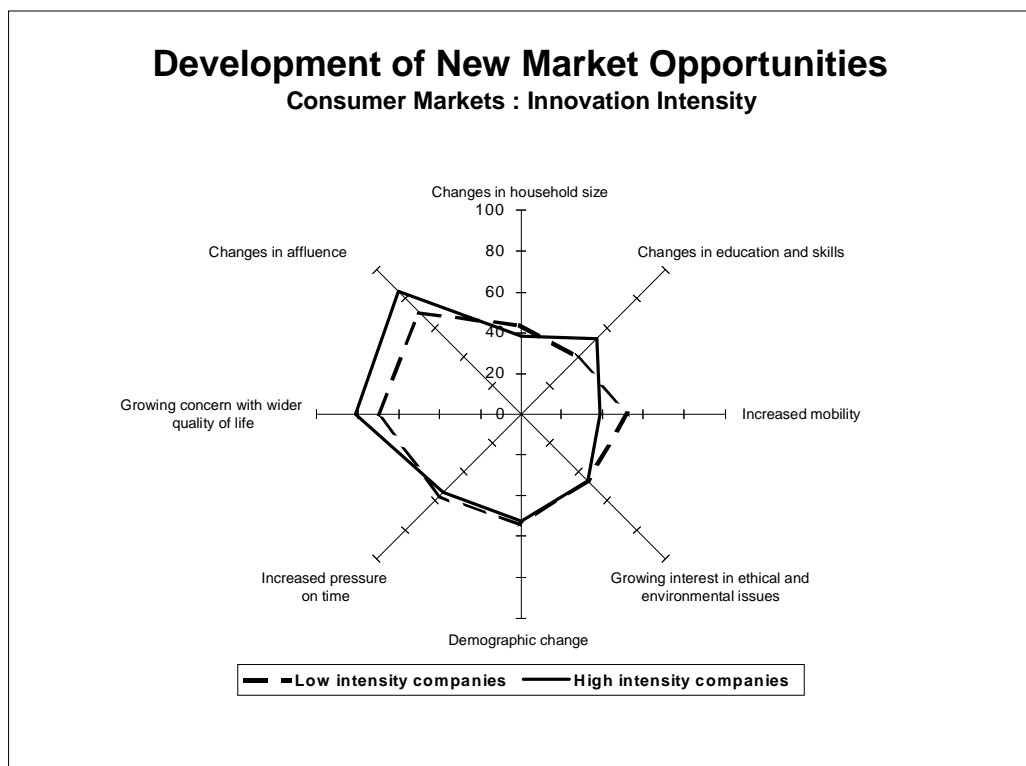
- Growing concern with the wider quality of life;
- Increased pressure on time; and
- Growing interest in ethical and environmental issues.

This reflects the extent to which successful investors in technology seek to take account of the potential customer-related applications of new ideas rather than solely technical excellence.

### Differences in “innovation intensity”

Other important differences in the nature of the factors influencing the development of new market opportunities in the Consumer Market are found between companies with different levels of “innovation intensity” (different levels of turnover coming from “new” products).

Figure 5



Companies with a high proportion of their turnover coming from “new” products (“high intensity” product/service innovators) tend to place more emphasis on:

- Changes in affluence;
- Growing concern with wider quality of life;
- Changes in education and skills.

This may be because developments in these areas offer the more significant opportunities for high-tech companies.

Companies with a lower proportion of their turnover coming from “new” products, on the other hand, place more emphasis on factors associated with increasing mobility.

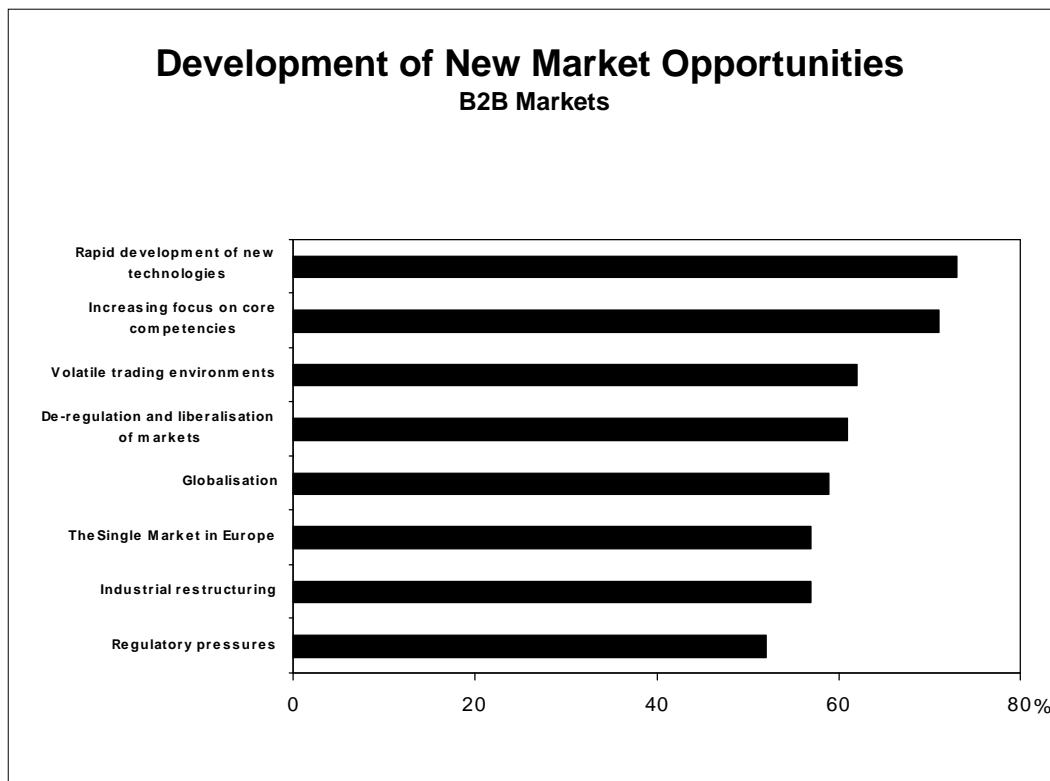
### 2.2.3. Business-to-Business Markets

#### Overall Analysis

Companies operating in the Business-to-Business Market (B2B) were asked which factors were the most important in creating new market opportunities for their companies in the Business-to-Business Market.

Each of the trends identified in the literature survey was mentioned by at least half the companies in the B2B Market.

*Figure 6*



The most important trends, which influence the development of new opportunities in the B2B Market, are the rapid development of new technologies and the increasing focus on core competencies.

- **The rapid development of new technologies.** The pace of technological change is accelerating. Not only does this open up new technical opportunities for satisfying existing needs, but it also creates new needs for customers and new opportunities for suppliers.

Our Plant Building case provides an excellent example of how changes in the production technologies used by customers in manufacturing industries lead to changes in customer needs and provide new market opportunities for their suppliers.

*Exhibit 5***RAPID DEVELOPMENT OF NEW TECHNOLOGIES: PLANT BUILDING**

The Plant Building case reveals that there has been a rapid increase in the complexity of steel production technology. This need has been met by significantly greater automation supported by complex IT technologies, such as expert systems. In turn, automation has been integrated into process control systems and combined with high-tech engineering tools such as computer-based simulation.

Because of these changes, it has become difficult and expensive for customers to retain expertise in all knowledge areas so that, in many cases, external suppliers of integrated systems now know more about process technologies in operation in individual companies than the companies themselves.

Market Opportunity Case Studies

- **An increasing focus on core competences.** The basis of competition in many industries is moving away from “hard” factors, such as access to physical resources, scale economies or expenditure on research and development, towards “soft” factors, such as reputation and service.

Companies increasingly concentrate on those activities that are essential for creating competitive advantage and out-source other (non-core) activities to specialist suppliers. Out-sourcing offers companies a range of benefits including lower costs, less capital employed, reduced investment, access to specialist expertise, and improved service or quality. It also creates new market opportunities for their suppliers.

Our Logistics Case Study provides an example of ways in which an increased focus on core competences has opened up major new market opportunities and re-defined traditional supplier/customer relationships.

*Exhibit 6***INCREASED FOCUS ON CORE COMPETENCES: LOGISTICS**

There has been a growing demand for logistics services that can offer manufacturers, wholesalers, retailers and end-consumers higher levels of service such as overnight supply or guaranteed next day delivery. This provides additional sources of competitive advantage to companies and potentially a means of expanding their customer base and its revenues. With rapidly changing technologies, this can only be realised by separate specialist companies.

In this case, manufacturing companies specialise in their core competence of manufacturing; and a new (supplier) industry, specialises in another part of the value chain – in this case, “logistics”.

Market Opportunity Case Studies

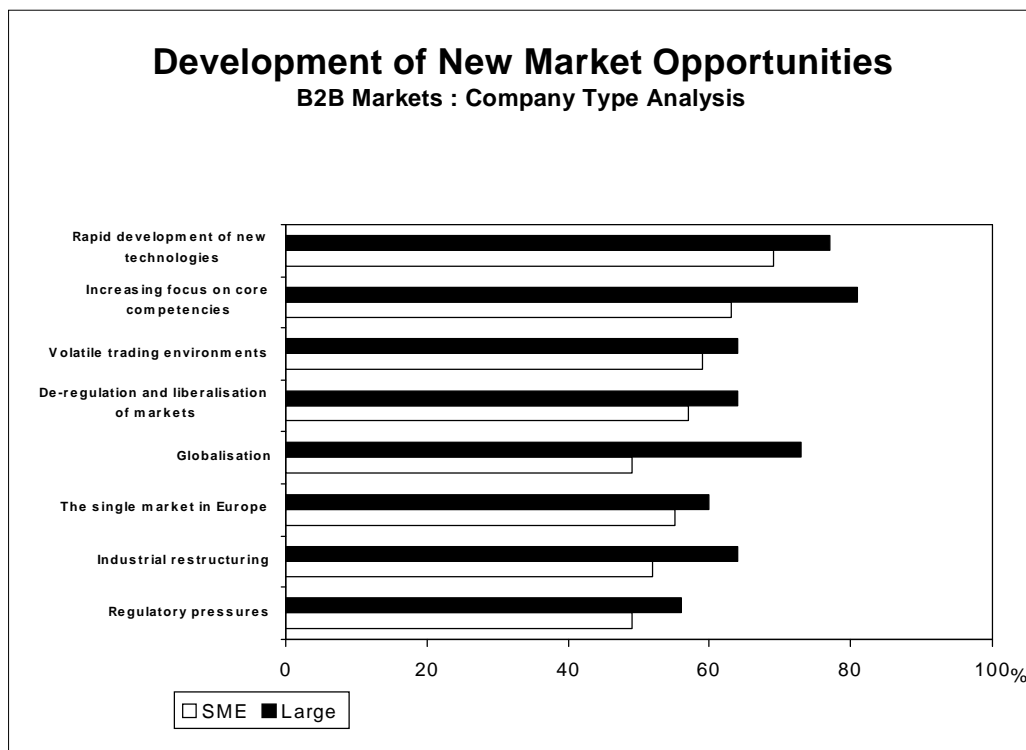
Other important trends in the B2B Market mentioned by more than half the companies in the survey include:

- More volatile trading environments;
- The de-regulation and liberalisation of markets;
- Globalisation;
- The Single Market; and
- Industrial re-structuring.

### Differences in Company-Size

There are some differences between companies of different sizes.

*Figure 7*



Large companies place more emphasis than small companies on all of the factors that influence the development of new market opportunities, but particularly on:

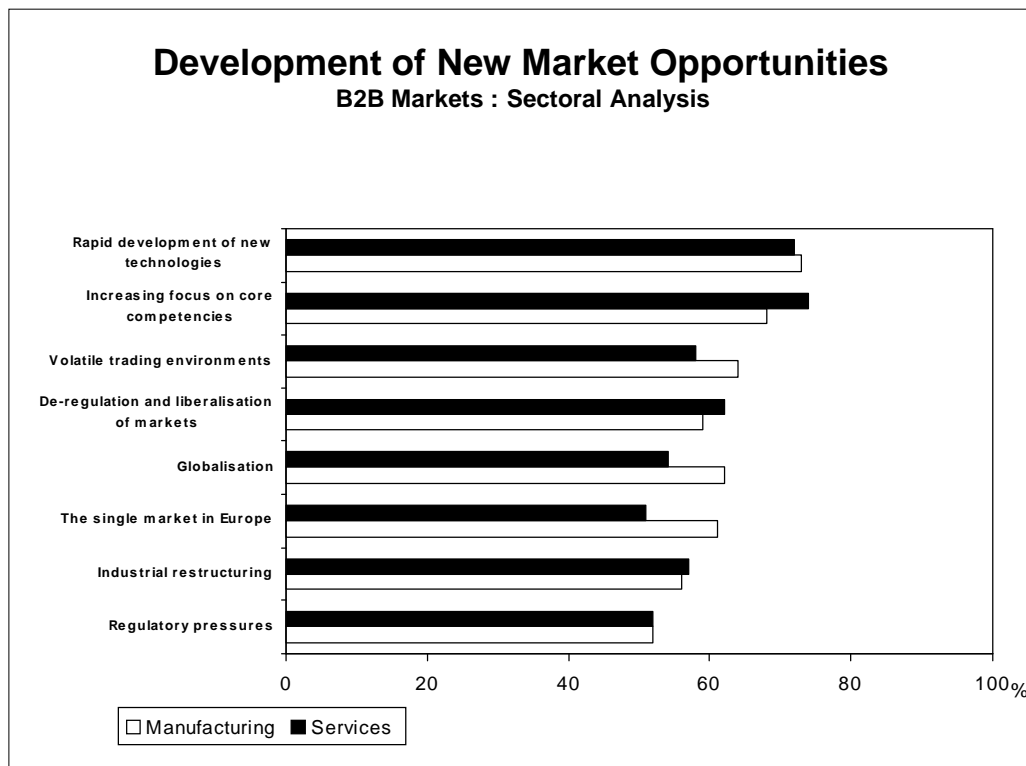
- The increasing focus on core competencies; and
- Globalisation.

This reflects the extent to which large companies are more exposed to international markets (where competition is more intense and the need for innovation is greater), and the extent to which large numbers of SMEs continue to compete in “sheltered” national markets (where the need for innovation is less important).

## Sectoral Differences

There are some differences in the factors, which influence the development of new market opportunities in different sectors of the B2B Market.

Figure 8



Manufacturers place more emphasis than companies in the Service Sector on trends in:

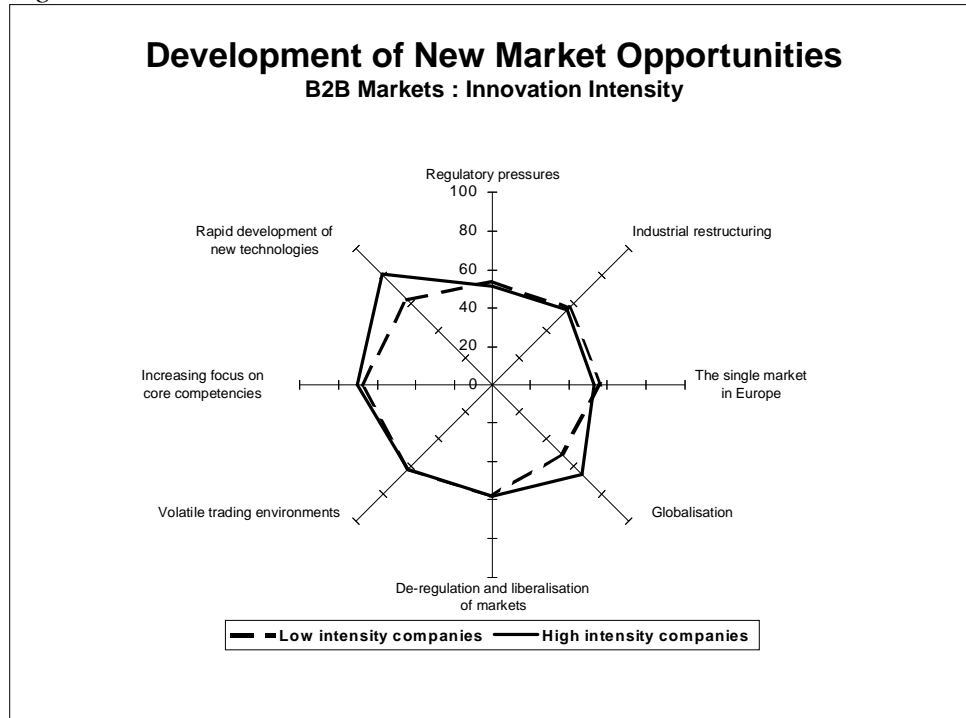
- Globalisation; and
- The Single Market

One explanation for these sectoral differences lies in the differential exposure of manufacturing and service companies to global competition and in the better development of the Single Market for manufactured goods than for services. Both of these factors encourage companies to innovate in response to increased level so competition.

## Differences in Technology

Other important differences are to be found in the nature of the factors that influence the development of new market opportunities in “high-tech” and “low-tech” companies in the B2B Market.

Figure 9



High-tech companies place more emphasis than ‘low-tech companies on:

- The rapid development of new technologies; and
- Globalisation.

This is not surprising, given the greater focus of ‘high-tech’ companies on investments in new technologies, and the global nature of technological change.

### 3. STANDARDS AND NORMS

*New market opportunities emerge because of the introduction of new standards and norms by governments and other bodies acting on behalf of citizens and consumers, particularly by helping customers to make informed choices and reducing uncertainties for customers.*

#### 3.1. SCOPE

Standards and norms encompass any type of information that informs customers in advance of the relevant characteristics of goods and services.

In most cases, government bodies, non-governmental organisations, and the private sector establish formal standards, which can be mandatory or voluntary in nature. However, in many high-tech and network-based sectors, informal standards (based on a ‘dominant’ technology) can emerge to complement the formal standards.

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Standards and norms cover a range of different issues<sup>13</sup>. These include:

- **Technical specifications:** These cover the proportions (size), performance, materials or quality of specific products. These are found in all types of sectors, covering products as diverse as food, chemicals, mobile telephones, and auto parts and services such as banking and insurance.
- **Process (or quality) specifications:** These define how internal processes are carried out within companies. They encompass activities such as quality management, environmental management, risk management, and, increasingly, the management of social or environmental responsibility by companies.
- **Safety standards:** These include mandatory pre-market approvals for products such as pharmaceuticals, and complex sectoral qualifications for participants in markets such as health care.
- **Environmental standards:** which define the way in which processes or products may be produced, the materials that may be used, and the treatment of emissions and ‘waste’ such that environmental impact is minimised. These are largely found in Manufacturing Sectors.

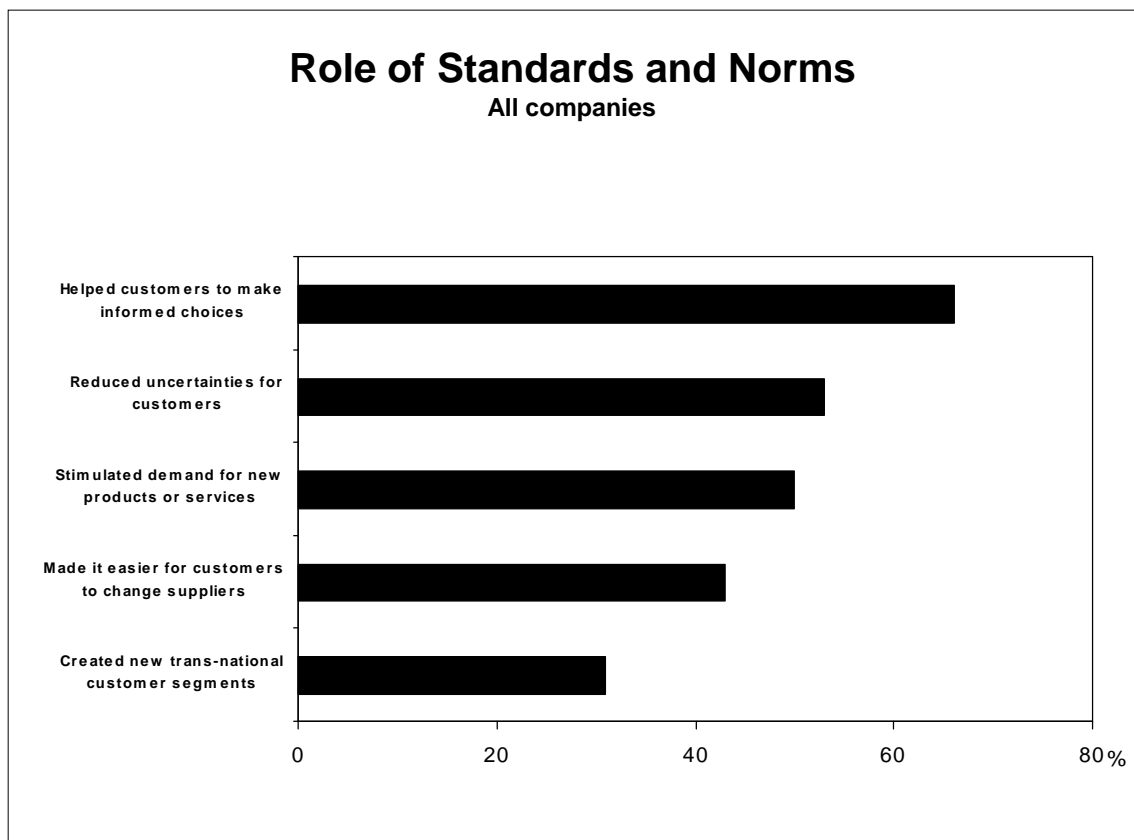
### 3.2. THE SURVEY

#### Overall Analysis

Companies were asked whether standards and norms had created new market opportunities for them.

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<sup>13</sup> See for example, Blind K. ‘*The Role of Technical Standards for the National Innovation System: Empirical Evidence from Germany*’ (2000, paper for CEC conference on Innovation and Enterprise Creation), David P. ‘*New Standards for the Economics of Standardisation*’ (in Dasgupta P. and Stoneman P. eds. ‘*Economic Policy and Technological Performance*’ 1987), Porter M. and van der Linde C. ‘*Green and Competitive – Ending the Stalemate*’ (Harvard Business Review, September/October 1995), Rosenthal B., Steven N., and Scharrand D. ‘*A Comparison of Approaches for Setting Standards for Technological Products*’ (Journal of Product Innovation Management, June 1988)

*Figure 10*

More than half the companies consider that standards and norms play a role in creating market opportunities for companies by:

- Helping customers to make informed choices;
- Reducing uncertainties for customers; and
- Stimulating demand for new products and services.

The Nokian Tyres Case Study shows how standards can stimulate demand for new products.

*Exhibit 7***NOKIAN (ROADSNOOP) TYRES: STANDARDS**

Nokian Tyres is the largest tyre manufacturer in the Nordic countries. It focuses on products designed for “northern” (cold) conditions. Its subsidiary, RoadSnoop, is developing a range of products designed to increase the safety of driving in cold conditions. The RoadSnoop pressure watch monitors tyre pressures as well as temperature, and uses radio waves to alert the driver if tyre pressure falls too low.

There were a number of severe accidents in the USA in 2001 caused by “blow-outs” on the tyres on new cars. RoadSnoop representatives have visited US officials in the National Highway Traffic Safety Administration on several occasions since then to explain the advantages of their products.

US officials intend to make pressure-monitoring systems a standard feature in new cars in the USA from 2004.

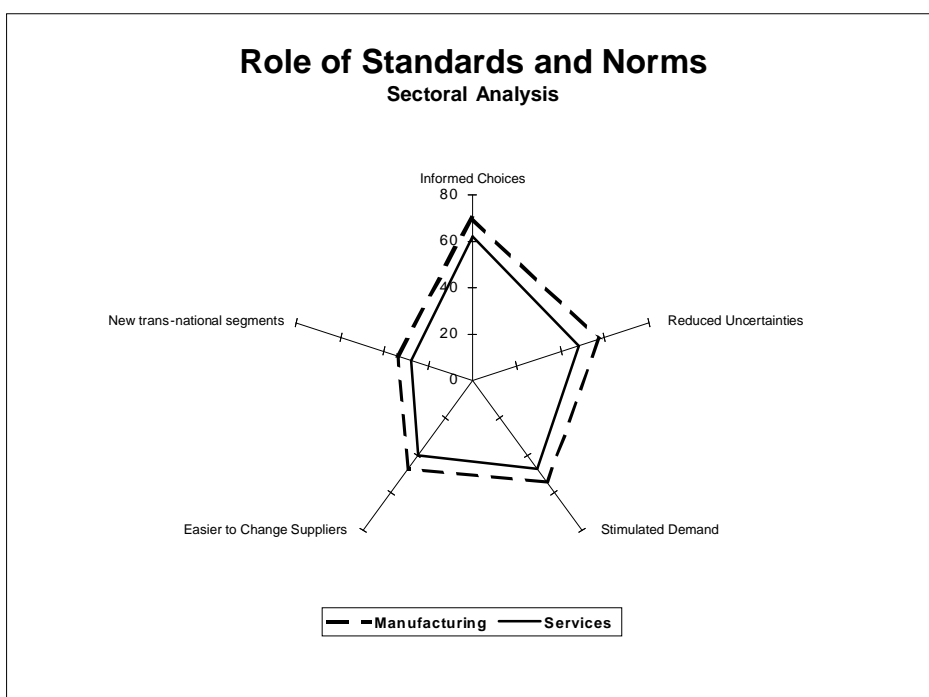
Company Case Studies

**Sectoral Differences**

Companies of different sizes hold broadly similar views, but there are differences between companies in different sectors.

Companies in the Manufacturing Sector are consistently more positive than companies in the Service Sector about the importance of standards and norms in creating new market opportunities for them.

*Figure 11*



One reason for this may be the greater (historic) use of standards and norms for tangible, “manufactured” products than for “intangible” services.

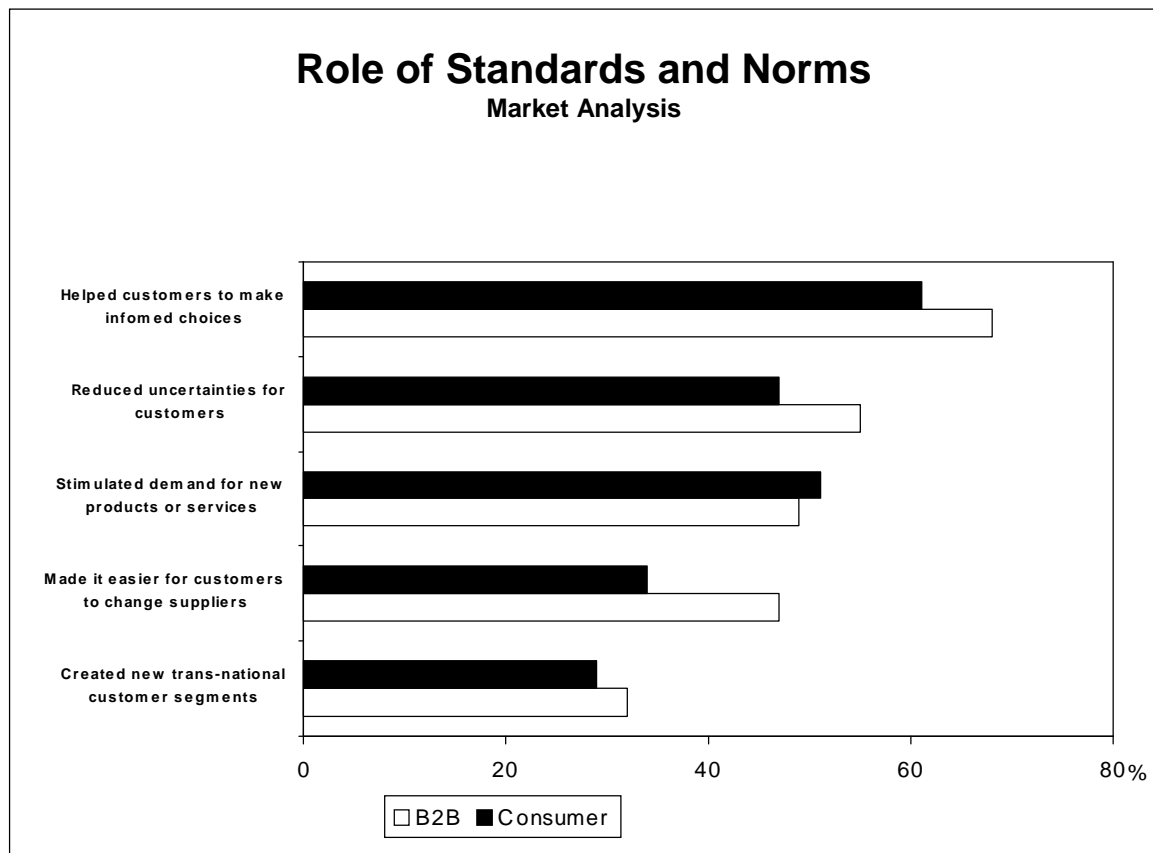
Manufacturers consider that, in order of importance, standards and norms:

- Help customers to make more informed choices;
- Reduce uncertainty for customers;
- Stimulate demand;
- Help customers to change suppliers; and
- Open-up new trans-national segments.

### Market Differences

Companies consider that there are differences in the roles played by standards and norms in the B2B Market and in the Consumer Market.

Figure 12



Companies serving B2B customers are more positive than companies in Consumer Markets about the role played by standards and norms in general, and in particular in:

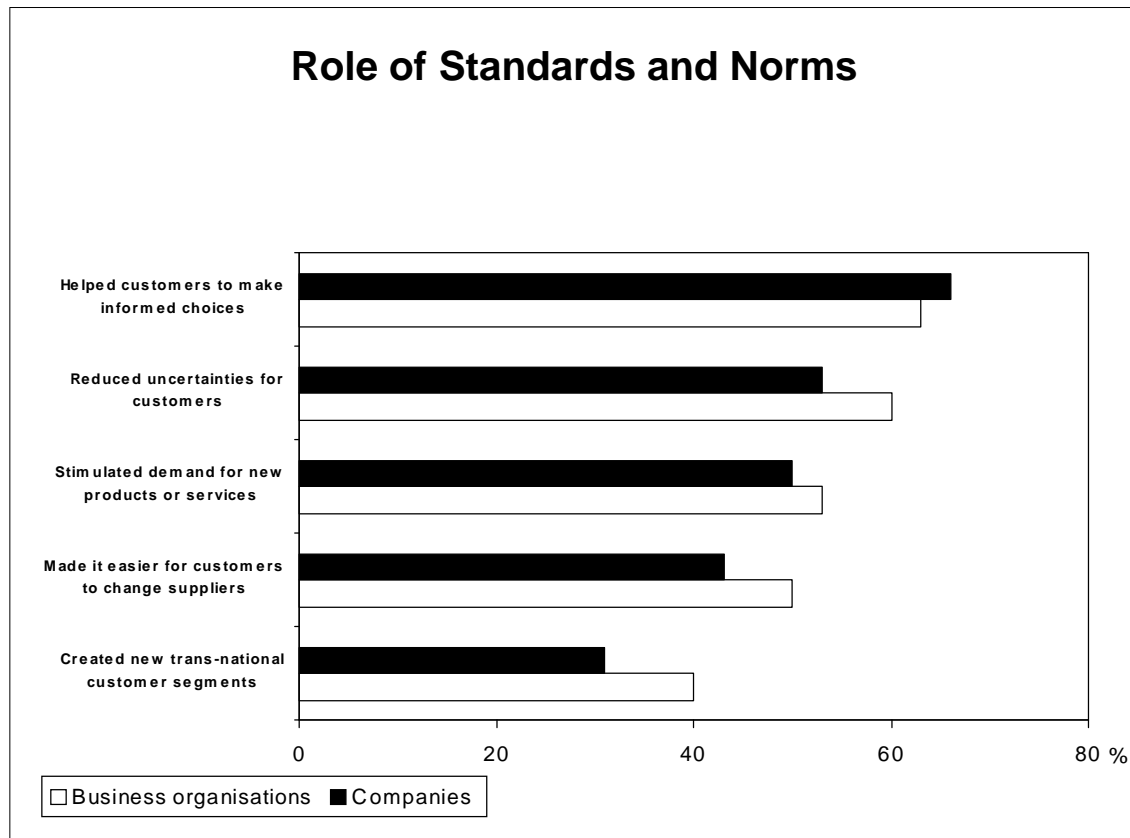
- Reducing uncertainties for customers; and
- Making it easier for customers to change suppliers

One reason is that B2B companies see more advantages, than companies in the Consumer Sector, in gaining support from a standards-setting body when introducing new products (and services) within a “total quality” management system.

### Business Organisations

Business organisations hold broadly similar views to those held by companies.

Figure 13



## 4. THE INVOLVEMENT OF CUSTOMERS

*It is the decisions and activities of companies that determine whether and how innovation takes place. But the process involves a large number of interactions between the company and the wider “innovation system”, including universities, research institutes, governments and customers.*

*Our survey shows that significant numbers of companies involve customers in the innovation process, especially in areas such as the evaluation and refinement of ideas; the provision of new ideas; testing prototypes; and in the detailed design of new products and services.*

*Moreover, our research reveals that companies with a high proportion of their turnover from “new” products (“high intensity product/service innovators”) tend to involve customers in the innovation process to a greater extent than less innovation intensive firms.*

### 4.1. THE INNOVATION PROCESS WITHIN COMPANIES

There is no single model of how companies undertake innovation. Companies differ in how they organise the innovation process because of differences in factors such as size, resources, management attitudes, innovative capacity, strategy, market structure, and sources of knowledge.

There are also differences in the role that customers play in the process. Some companies are highly customer-oriented in the way in which they go about developing new products and services; others are less so.

The innovation process in companies has a number of distinct parts<sup>14</sup>:

- **“Idea Generation”**: The identification, initial development, and screening of new ideas for new and improved products, processes, and services.
- **“New Product Development”**: The development of new or improved products, services, or processes such that they can be ‘produced’ by the company and made available to customers.
- **“Commercialisation” (Marketing and Sales)**: The launch, positioning, promotion, distribution, and post-sale support of the new offer.

<sup>14</sup> See for example, Ahuja G. and Lampert C. ‘*Entrepreneurship in the Large Corporation: A Longitudinal Study of How Established Firms Create Breakthrough Inventions*’ (Strategic Management Journal, 22, 2001), Arnold E. and Thuriaux B. ‘*Supporting Companies’ Technological Capabilities*’ (1997), Arthur D. Little ‘*The Innovative Company*’ (1998), Cooper R. ‘*Benchmarking the New Product Process: Results of the Best Practice Study*’ (European Management Journal, February 1998), Bitram G. and Pedrosa L. ‘*A Structured Product Development Perspective for Service Operations*’ (European Management Journal, Vol. 16, Number 2, 1998), Deschamps J-R. and Ranganath Nayak P. ‘*Product Juggernauts*’ (1995), Dunphy S., Herbig P., and Howes M. ‘*The Innovation Funnel*’ (Technological Forecasting and Social Change, November 1996), Thomas R. ‘*New Product Success Stories*’ (1995), von Hippel E. ‘*Lead Users: A Source of Novel Product Concepts*’ (Management Science, July 1987), von Hippel E. ‘*Sources of Innovation*’ (McKinsey Quarterly, Winter 1987), Voss C. ‘*Role of Users in the Development of Applications*’ (Journal of Product Innovation Management, June 1985), and Voss C., Blackmon K., Hanson P., and Claxton T. ‘*Managing New Product Design and Development: An Anglo-German Study*’ (Business Strategy Review, Vol. 7, Number 3, 1996)

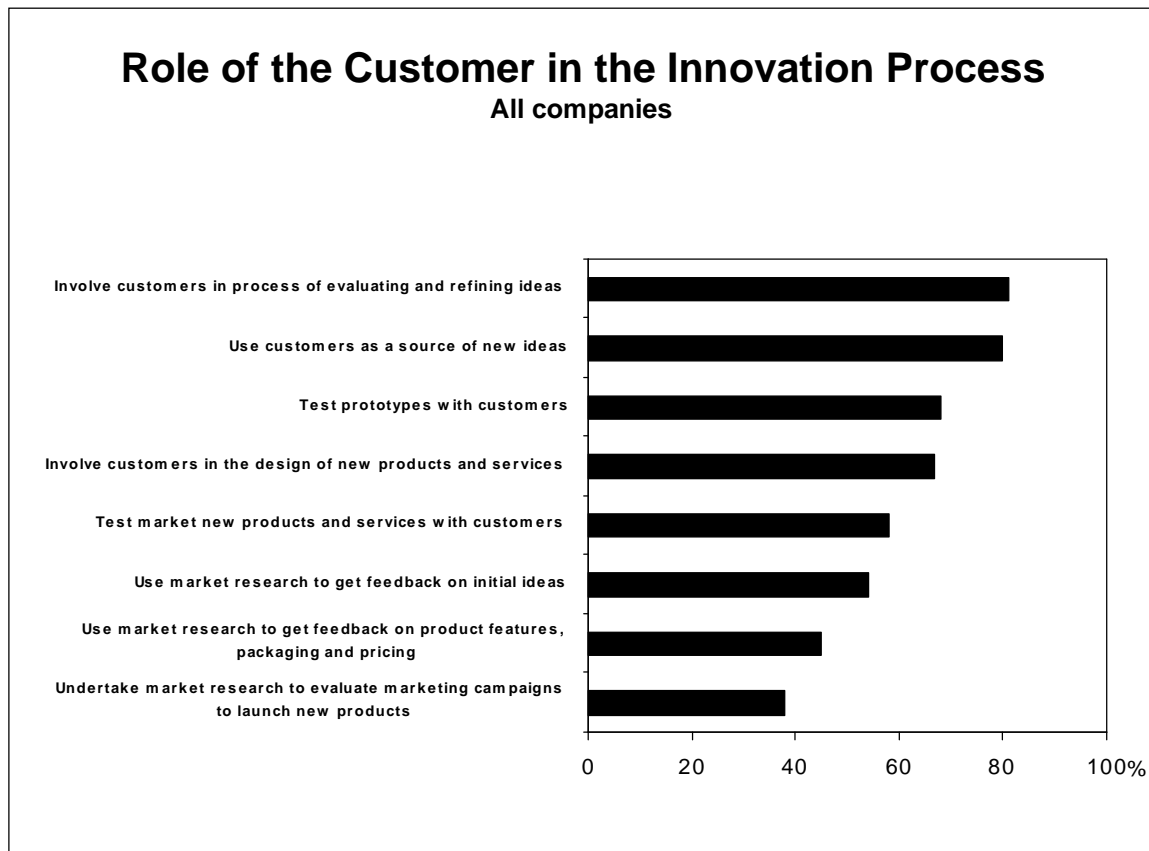
Our survey shows that customers influence all of these, to a greater or lesser extent.

## 4.2. CUSTOMERS AND THE INNOVATION PROCESS WITHIN COMPANIES

### Overall Analysis

Companies were asked how they involved customers in the new product development (innovation) process.

Figure 14



In our survey, more than two-thirds of companies claimed that they involve customers in the innovation process:

- To evaluate and refine ideas;
- As a source of new ideas;
- To test prototypes; and
- In the design of new products and services.

Companies also involve customers in other ways. More than half the companies involve companies:

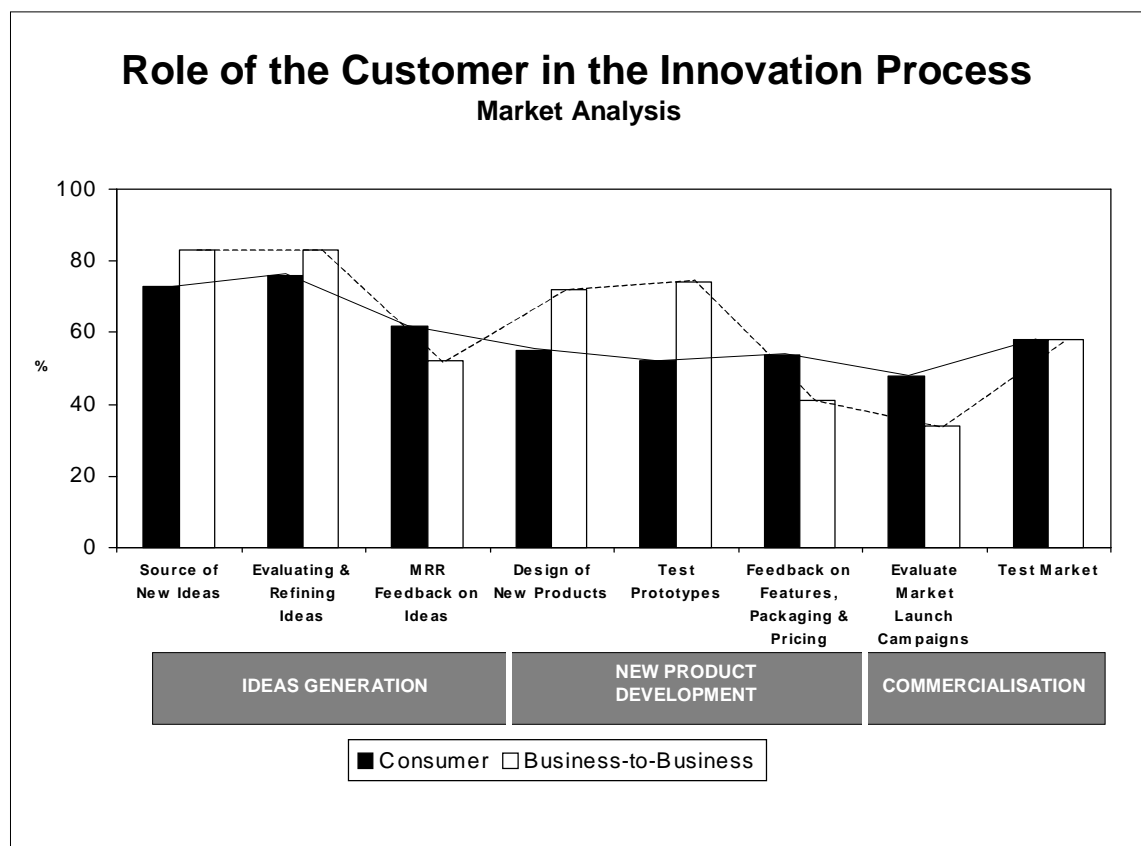
- In test marketing new products; and
- By obtaining feedback from customers on initial ideas developed by the company.

## Market Differences

There are, however, significant differences in the roles played by the customer in the Consumer Market and in the Business-to-Business Market.

In general terms, companies in the B2B Market involve their customers more in the Idea Generation and the New Product Development phases of the innovation cycle, while companies operating in the Consumer Market work more closely with customers in the Commercialisation phase.

Figure 15



### *Business-to-Business Market*

Business-to-Business marketers place more emphasis than Consumer marketers on using customers:

- As a source of ideas;
- To test prototypes; and
- To design new products and services.

The principal reason for these differences is that most B2B sectors are characterised by the direct sale of a small number of “tailored” products and services to a small number of customers. This provides greater scope for direct contact with customers,

including the use of “lead customers” to refine ideas, test prototypes and design final products.

The AGME Case Study provides an example of a way in which an SME operating in the Business-to-Business Market uses customers to help to develop new products for business use.

*Exhibit 8*

**AGME: CLOSER RELATIONSHIPS WITH CUSTOMERS**

Industrias Agirregomezkorta and Mendikute, S.A. (AGME) operates in the highly competitive machine-tool building sector in the Basque Country. It is a family owned business, which has been in existence for more than 50 years, with 80 employees.

One reason why AGME is now the leader in the customised machine tool sector is that it re-created itself from a company that was a “manufacturer of products” to one that is a “bag of capabilities”. This required AGME to develop closer relationships with its principal “demanding” customers. Under the new approach, AGME staff had to understand the *underlying* needs of their customers and to develop outline solutions that could be implemented. This process was stimulated by regular contacts between experts in both companies, including meetings at which new ideas were exposed by AGME to the customer.

Company Case Studies

The Lafarge Case Study illustrates how a B2B company builds partnerships with customers to improve the new product development process.

*Exhibit 9***LAFARGE: PARTNERSHIPS WITH CUSTOMERS**

Lafarge is a world leader in the “construction-materials” market. It employs over 83,000 people in 75 countries, with annual sales of more than Euro 13.7 billion. The Aggregates and Concrete Division represents around 33% of Group sales, and employs over 21,000 people in 26 countries.

This Division has recently launched a new line of ready-mix concrete, the Agilia® range, which integrates innovative formulations for walls and flooring to the construction industry including flooring for individual houses; flooring for apartments; walls for apartments; and cement screed.

Lafarge believed enough in Agilia® to take it to a customer before research had been carried out into potential demand. For its part, the customer was willing to enter into an informal partnership agreement, recognising Agilia®’s potential to bring savings, as well as to improve aesthetics.

Once the basic formula had been refined and fine-tuned, five further partnerships were negotiated with a range of customers all over France.

The market potential and the economics of the product in a range of contexts were evaluated at this stage, by examining the economic balance sheets of each site.

Company Case Studies

***Consumer Markets***

Companies in Consumer (B2C) Markets place more emphasis than B2B marketers on using market research to obtain feedback from customers on:

- Initial ideas;
- Product features, packaging and pricing; and
- Marketing campaigns to launch new products.

The principal explanations for these differences are that:

- Companies in Consumer Markets usually have less direct contact with final customers than companies in Business-to-Business Markets because they use mass media to stimulate end consumer demand and wholesalers and retailers to distribute their products and services.
- There are a larger number of customers and potential customers in many Consumer Markets.
- Most products are supplied to the end consumer in a standard or semi-standard form.

As a result, market research provides a logical and efficient way to obtain an objective response from potential customers about new products and new advertising campaigns.

The Nokian (RoadSnoop) Tyres Case Study illustrates how a company obtains ideas for new products from customers, intermediaries and other stakeholders.

*Exhibit 10*

**NOKIAN (ROADSNOOP) TYRES: SOURCES OF IDEAS**

The RoadSnoop development team obtained ideas from a number of sources:

- **Drivers:** need for “ease” of use by the driver;
- **Fleet managers:** need for cumulative data by type of vehicle and for all vehicles in the fleet;
- **Car-makers:** need for special connections so that they can optimise design lay-out throughout the car and offer a package to buyers as an optional extra;.
- **Tyre manufacturers:** need to ensure simple “fitments”, as a “standard” or as an “optional extra”.
- **Tyre chains:** need for ease of installation; and

RoadSnoop also obtained information from other parts of the “transport chain”, including:

- **Police:** information, particularly from the Finnish police, on the results of “spot checks” on tyres (e.g. tyre wear and tyre pressures) and on the reasons for tyre-related accidents; and
- **Retailers:** advice on tyre wear and tyre pressures prior to replacement.

Company Case Studies

The Barilla Case Study describes how a company operating in a Consumer Market undertakes the “evaluation” stage in the new product development process.

*Exhibit 11*

**BARILLA: EVALUATION**

Based in Parma, the Barilla Group is an Italian, family-run food processing business whose products are sold in over 100 countries. With more than 8,000 employees, Barilla is the world's largest producer of pasta and the market leader in the Italian biscuit, pastry cookie and pasta markets.

During the “evaluation” stage in the development of a new range of pastry cookies, the Bakery Division tested a number of different product ideas with consumers using qualitative market research tools such as concept research.

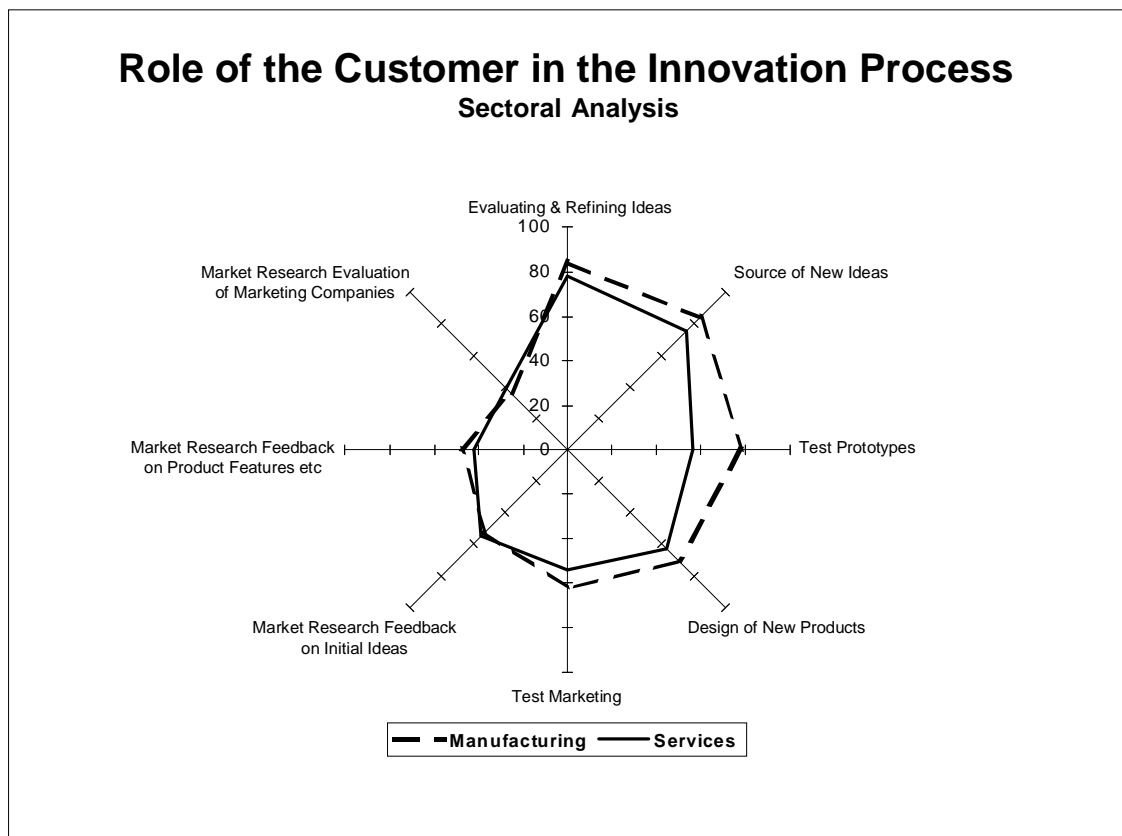
External market researchers used well-established structured processes to describe ideas to small groups of potential customers. “Story boards” and graphics were used to illustrate these concepts and their potential benefits. The objective of the research was to test ideas against consumer tastes.

Company Case Studies

**Sectoral Differences**

There are also differences between companies in different sectors.

*Figure 16*



Companies in the Manufacturing Sector, in particular, place more emphasis than companies in the Service Sector on:

- Testing prototypes with customers.

One reason for this difference in emphasis is that manufactured products are more “tangible”. This makes it easier for innovative (manufacturing) companies to present potential customers with physical examples of new products, thus facilitating the design and test marketing processes.

Some service sector companies have begun to overcome this problem using innovative market research techniques. In the Retail sector, for example, representations of new store formats are created using computer graphics and virtual reality tools. These are then presented to focus groups of potential customers.

The Metalurgica Luso-Italiana (MLI) Case Study highlights the benefits of an effective prototype evaluation phase involving all members of the distribution chain before committing to manufacture.

#### *Exhibit 12*

### **METALURGICA LUSO-ITALIANA: PROTOTYPE TESTING**

Metalurgica Luso-Italiana (MLI) is a medium-sized Portuguese company with Headquarters in Arruda dos Vinhos, which manufactures and sells taps, under the brand name of Zenite to the Iberian, Mercosol and South African markets. It has 72 employees and a turnover of € million.

Trade fairs and contacts between sales force and retailers are critical in the prototype evaluation phase of the innovation process in MLI. In the case of a recent innovation (to make it easier to mount and dismount taps), MLI used a number of Portuguese trade fairs to get the opinion of professionals (architects, builders, plumbers resellers and the public) about the new product that the company intended to launch.

In this case, two main factors caused MLI to slow down the next phase of the new product development process. Several members of their distribution chain felt that:

- The taps could be dismounted so easily that there is a great risk of theft, which is of particular importance where the sanitary ware is open to the public; and
- The potential for combining different models and brands is low because other leading manufacturers and some customer segments have not yet accepted the mounting system as an industry standard.

Following re-design, the system evaluation tests are now taking place in the laboratory and in the premises of selected customers - private householders as well as builders.

The Philips Consumer Electronics Case Study is an example of the way in which a Consumer company generates and then refines ideas for new products, using innovative market research techniques.

*Exhibit 13*

**PHILIPS CONSUMER ELECTRONICS: MARKET RESEARCH**

Royal Philips Electronics of the Netherlands (Philips) is one of the world’s leading electronics companies and Europe’s largest, with sales of EUR 32 Billion in 2001 and 186,000 employees in more than 60 countries. The company has three main customer segments: consumer, industry and professional.

In January 1998 Philips presented 30 new ideas to potential customers in the “consumer segment”, in qualitative surveys in New York, London and Paris. The Disc Video Recorder emerged as the number one idea from the surveys.

In the summer of 1998, Philips did a “feasibility study”, by checking the extent to which existing VHS video recorder owners used the facilities offered, in particular recording functionalities. The study also identified problems with recording and obtained suggestions for improvement from the users.

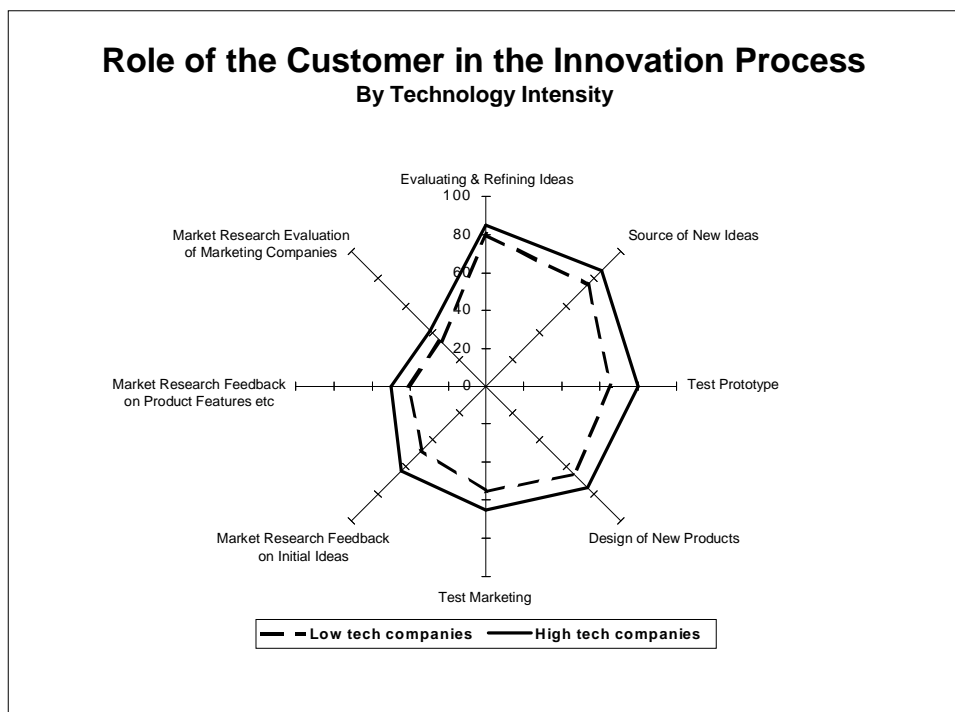
Later that year, Philips interviewed 280 people from Europe, the United States and the Far East to study customer requirements, including pricing. This study helped Philips to prepare a priority list of requirements.

Company Case Studies

**Differences in Technology**

Our research also shows that ‘high tech’ companies tend to involve customers, in all areas of new product development more than low-tech companies.

*Figure 17*



One explanation for the different emphasis is that “high-tech” companies face different product development risks than “low-tech” companies.

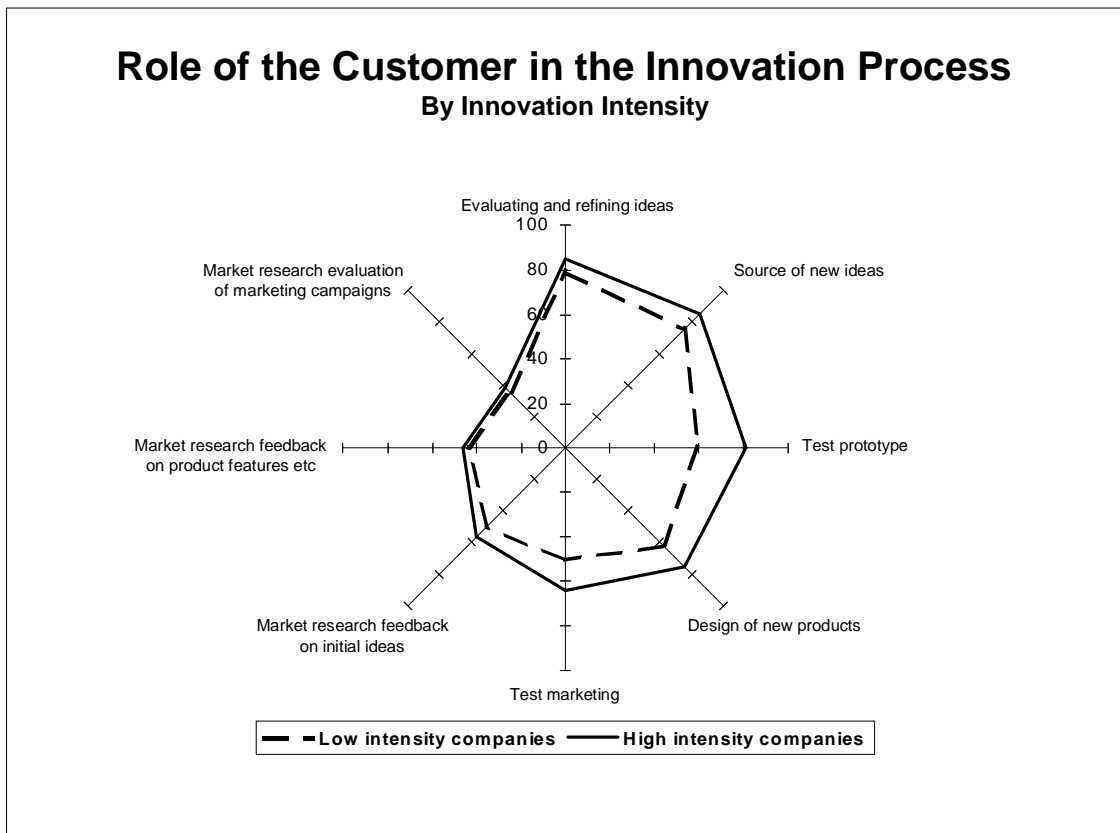
In general, low-tech companies operate in mature market conditions where demand is well understood and competition is fierce. Many new products are, in this situation, focused on incremental improvements in value for existing customers. The risk of products being rejected because they do not meet the needs or wants of customers is relatively low. Rather, the principal risk is from competitive pressure. This does not, of course, lessen the need to involve customers in the innovation process but it can change its emphasis.

In contrast, high-tech companies face the risk that their products will not meet the needs of customers, because many high-tech companies produce “products in search of a market”. To mitigate this risk, well-managed high-tech companies involve customers intensively in the innovation process.

**Differences in “innovation-intensity”**

Our research reveals that companies with a high proportion of their turnover coming from “new” products (“high intensity” product/service innovators) tend to involve customers in the innovative process, to a greater extent than companies with a lower level of new product innovation.

Figure 18



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Companies with a high proportion of their turnover coming from “new” products place particular emphasis, compared to other companies, on the role of customers to assist:

- As a source of new ideas;
- In the design of new products;
- To test prototypes; and
- To test market new products.

This finding supports evidence from earlier research that there may be a causal relationship<sup>15</sup> between high levels of innovation intensity and a customer-focused new product development process.

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<sup>15</sup> See for example, Erdyn Consultants ‘*Promoting Innovation Management Techniques in Europe*’ (2000), Kluge J., Deger J., and Wunram J. ‘*Can Germany Still Innovate?*’ (McKinsey Quarterly Number 2, 1999), Sociotec ‘*Innovative Management: Building Competitive Skills in SMEs*’ (2000), and Voss C., Blackmon K., Cagliano P., Hanson P., and Wilson F. ‘*Made in Europe: Small Companies*’ (Business Strategy Review, Vol. 9, Number 4, 1998)

## 5. MARKET ACCEPTANCE

*Customer awareness of the benefits of the new product or service is a crucial factor in determining acceptance. But the extent to which customers “take-up” a new product or service is the ultimate test of whether an innovation is successful.*

*Our survey shows that the most important tools used by companies to create awareness of new products and services amongst customers are personal, particularly in B2B markets. Customers also find out about new products and services from a range of other sources, that are not directly related to the company launching the product.*

*Three factors stand out as the most important factors influencing customers’ decisions to buy new products or services in B2C Markets: awareness of the new product and its benefits; customer satisfaction amongst those who have tried it; and quality and price compared to alternatives. In Business-to-Business Markets (B2B), positive attitudes to new technologies are also important.*

### 5.1. INTRODUCTION

Adopters of new products or services move through a number of basic stages.

*Exhibit 14*

#### Adopters of New Products: Stages

<i>Stage</i>	
<b>Knowledge</b>	Customers build awareness and gain some basic information about the product or service and its benefits
<b>Persuasion</b>	Customers form favourable or unfavourable attitudes towards the new product or service
<b>Decision</b>	Customer engages in activities that lead to a decision to adopt or reject the new product or service
<b>Confirmation</b>	Customers seek reinforcement for their decision.

### 5.2 THE SURVEY - CUSTOMER AWARENESS

The different routes through which a customer becomes aware of a new product or service are illustrated in the table below.

*Exhibit 15***Awareness of New Products: Routes**

	<b>Company</b>	<b>Other Routes</b>
<b>Impersonal</b>	TV & Radio Newspapers/Magazines Promotional Activity Sponsorship The Internet	Consumer Reports Editorials & News Stories The Internet
<b>Personal</b>	Direct Selling Indirect Selling Exhibitions/Trade Fairs Technical Support	Immediate Family Friends, Neighbours & Relatives Fellow employees or colleagues Professional Advisors Retailers or distributors

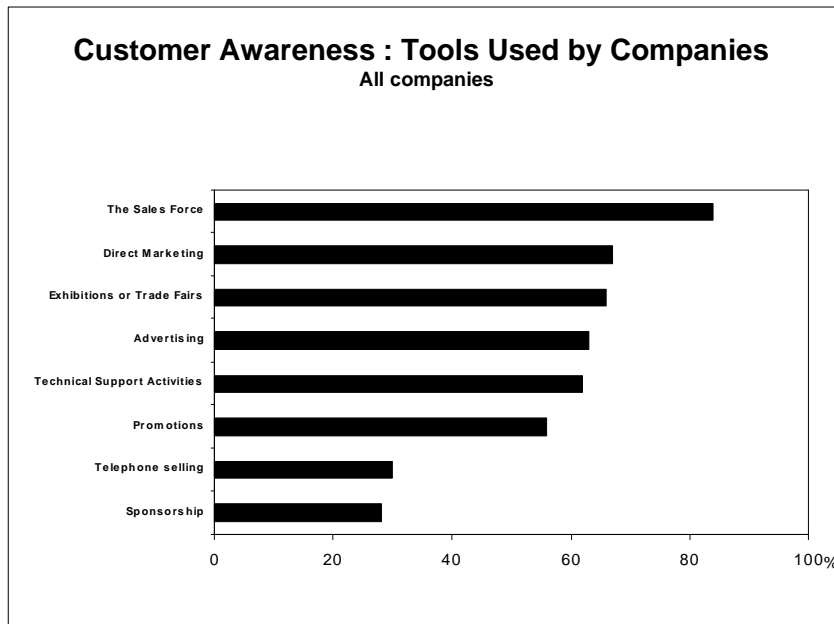
**5.2.1. Communication by Companies**

We asked companies for their views on the importance that customers attach to different sources of information about new products and services.

**Overall Analysis**

Companies communicate with potential customers in order to create initial awareness of their new products and services and to build positive attitudes towards them.

Companies use a range of tools to achieve these objectives. Each has particular strengths and weaknesses. There is no ideal or right solution. The appropriate mix will differ according to the market in question; the product or service; the company's previous experience in the market; and its reputation.

*Figure 19*

Our survey shows that the most important tools used by companies to raise awareness about new products and services among their customers and their intermediaries (such as wholesalers and retailers) are “personal” – particularly the sales force.

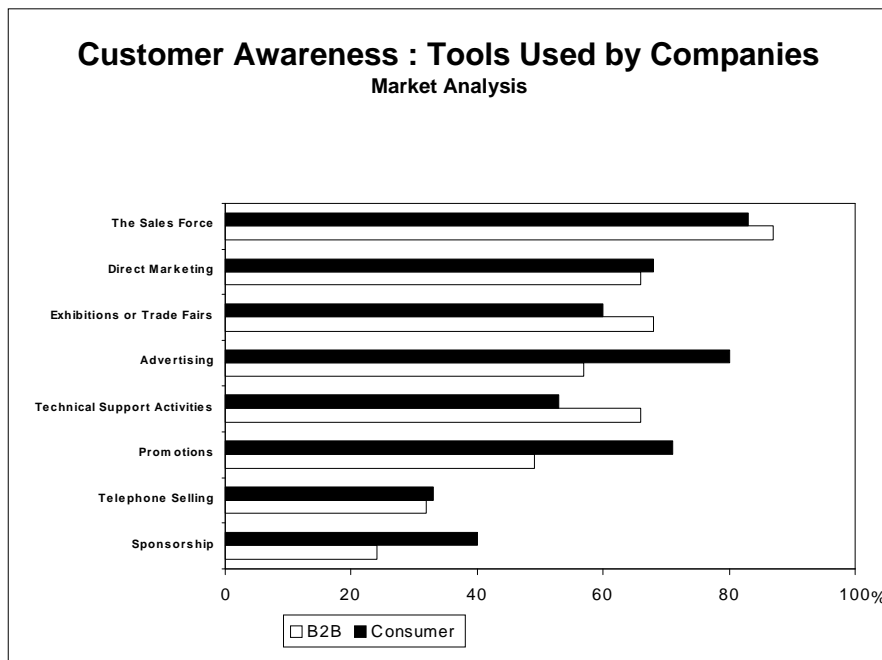
Other major sources used by companies are:

- Direct Marketing;
- Exhibitions and Trade Fairs;
- Advertising;
- Technical Support; and
- Promotions.

### **Market Differences**

There are, however, differences between companies that operate in Consumer Markets and companies that operate in Business-to-Business Markets in terms of the communication tools that are used.

Figure 20



Companies in Consumer Markets use “impersonal” tools much more than companies in B2B Markets:

- Advertising;
- Promotions; and
- Sponsorship.

In contrast, B2B marketers use “personal” tools, such as technical support activities much more than companies in Consumer Markets.

These differences reflect the nature and structure of demand in B2C and B2B markets, and the relationships that companies have with their customers in each of these market sectors.

In B2C markets the large scale of demand and the low value of individual transactions for many products makes it difficult and expensive for companies to have extensive direct links with their customers. Instead, companies in B2C markets tend to use mass media, such as advertising, promotions, and sponsorship to contact their final customers.

The Barilla Case Study illustrates how a Consumer company tested a number of alternative communication strategies with potential customers.

*Exhibit 16***BARILLA – CONSUMER COMMUNICATIONS RESEARCH**

During the development of a new range of pastry cookies, the Bakery Division of Barilla made extensive use of qualitative and quantitative market research with consumers to examine the effectiveness of the proposed positioning, name and packaging.

Groups of customers assessed the meaning and impact of different product names, and reviewed consistency between all elements of the marketing ‘mix’.

Qualitative research with consumers helped to decide the positioning of the new product under the *Mulino Bianco* umbrella brand as part of a product range that emphasised traditional values, genuine and simple ingredients, wholesomeness, and rustic charm.

Company Case Studies

In many B2B markets, in contrast, small numbers of customers account for a large part of the market, and require after-sales service to ensure the effective operation of products or processes. This provides B2B companies with additional, ‘personal’ mechanisms for raising awareness of new products with their end customers.

The UniCredito Italiano Case Study illustrates how a Business company tested a number of alternative communication strategies on customers.

*Exhibit 17***UNICREDITO ITALIANO : BUSINESS COMMUNICATIONS RESEARCH**

UniCredito is a European Banking Group, with Headquarters in Milan. Formed in 1998 following a series of mergers between smaller Italian banks, it has almost 4 000 branches and 65 000 employees.

“Imprendo” is its small business package, which offers small businesses an unlimited number of transactions, cheques and closing balances for a fixed price. It also offers a range of services and benefits for the company, its owners and their relatives, and its employees.

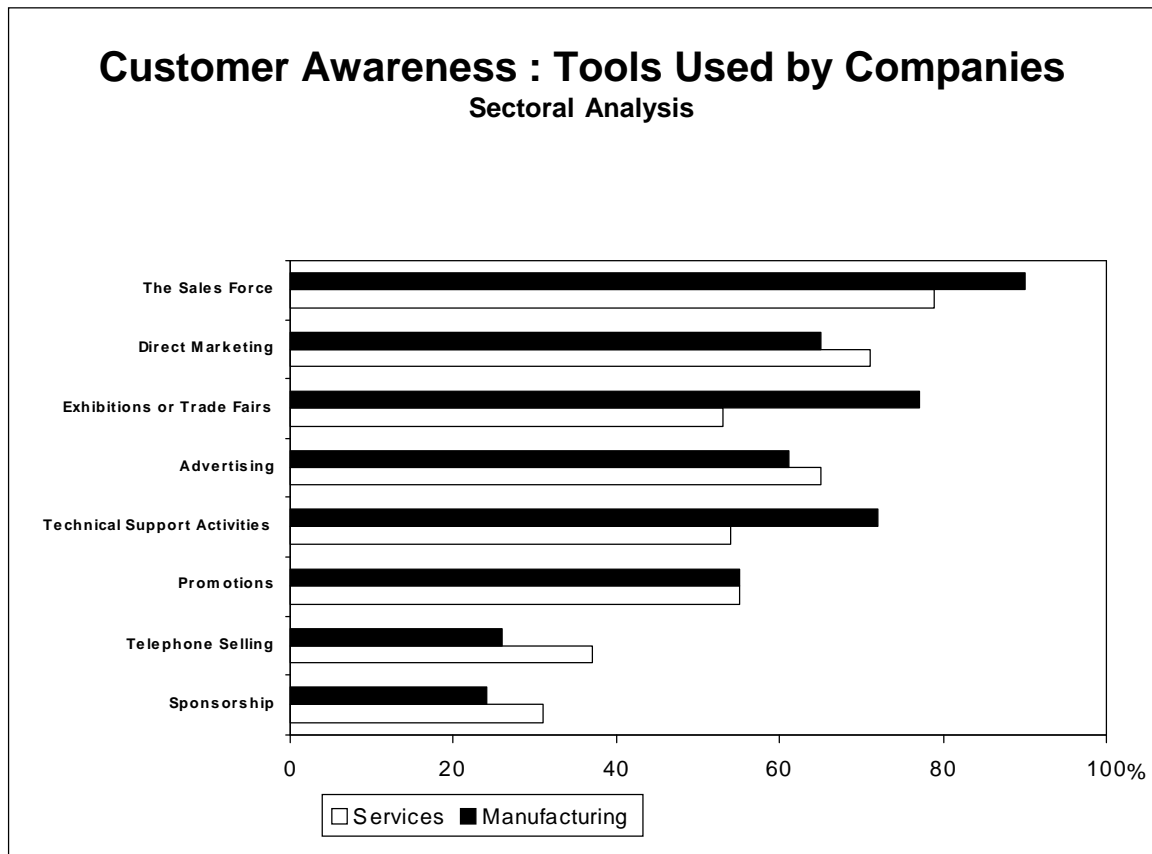
To develop its communications strategy, UniCredito employed a Market Research agency to run six Focus Groups in different locations to examine the attitude of customers to: different names for the product; different graphics packages; and different brochures (including font sizes and colours).

Company Case Studies

## Sectoral Differences

There are also differences between manufacturing and service sectors.

Figure 21



Manufacturers place greater emphasis than Service companies on:

- The Sales Force;
- Exhibitions and Trade Fairs; and
- Technical Support Activities.

Companies in the Service Sector, on the other hand, use telephone selling more than manufacturing companies.

In part, this reflects differences in the fundamental characteristics of goods and services. Physical products, by their nature, can be demonstrated and require more technical support; services, because of their intangible nature, cannot easily be shown to prospective customers and most do not require after-sales support. Increasingly, however, personal communication techniques are used to promote services because of the growth of branded service companies able to guarantee consistent performance.

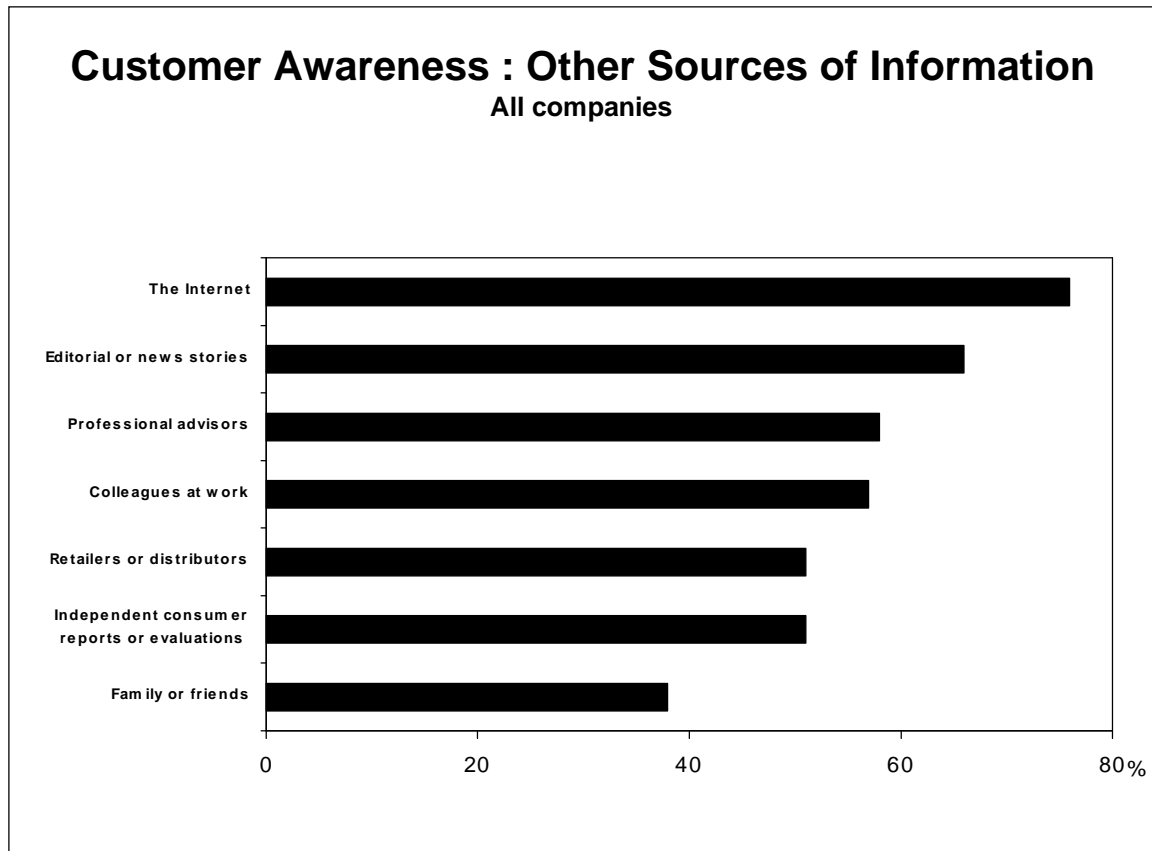
### 5.2.2. Other Information Sources

Companies were asked their views on the importance of other routes through which customers find out about new products and services in their market.

## Overall Analysis

Customers also find out about new products and services from a range of other sources, that are not directly related to the company launching the product. In some situations, customers deliberately seek out information; in others, customers receive information unintentionally.

Figure 22



Our survey shows that the most important of these other routes, mentioned by more than three-quarters of companies, are “impersonal” forms of communication

The principal impersonal sources are in the use of:

- The Internet; and
- Editorial and news stories.

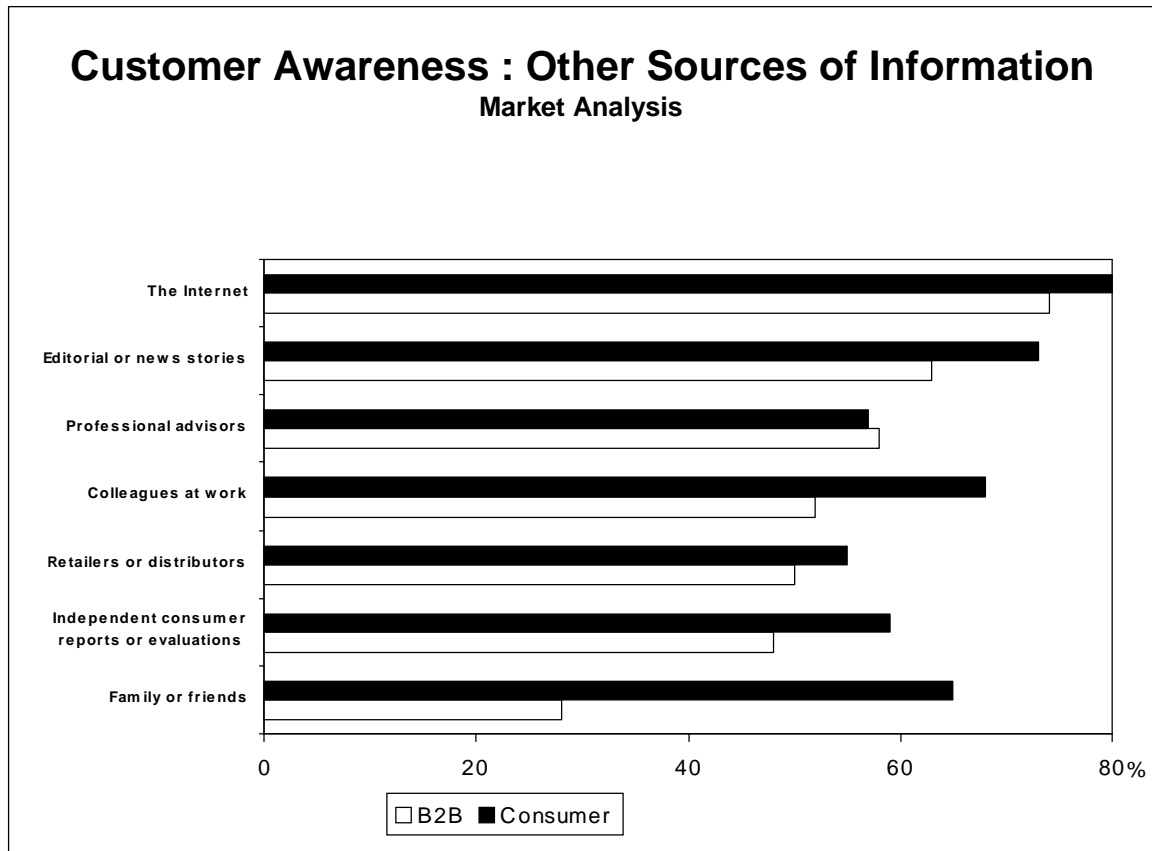
More than half the companies in the survey mentioned other (mostly personal) sources:

- Professional Advisers;
- Colleagues at work;
- Retailers or distributors; and
- Independent consumer reports

## Market Differences

Again, there are differences between Consumer and Business-to-Business markets.

Figure 23



In all areas except one, companies consider that customers in Consumer Markets use “other” sources of information, to a greater extent, than customers in Business Markets. The areas of greatest difference are:

- Family and friends;
- Colleagues at work;
- Independent consumer reports or evaluations; and
- Editorial and news stories;

One explanation of these differences is the differing nature of the product consumption processes in the B2C and the B2B markets.

Mass consumption of products, a primary characteristic of B2C markets, facilitates exchange of ideas about product performance and provides support for independent consumer organisations. In many B2B markets, however, product consumption takes place on a more individualistic basis because the numbers of buyers is smaller and many products are tailored to the needs of individual customers.

The ABB Case Study illustrates how a company operating in the Business-to-Business Market can increase acceptance of a new product using a “lead user”.

*Exhibit 18***ABB: LEAD USERS**

ABB, a global company with Swedish and Swiss parents, is active in power and automation technologies. It serves its markets through three main customer divisions: utilities; oil and gas; and industry. The Utilities Division is the smallest of all divisions in terms of employment, but it has the largest turnover of all ABB divisions (€ Billion in 2001).

It uses three principal models for the innovation process: a classical “technology-push” model; an individual customer “demand- pull” model; and a “customer-focused/pro-active system” model. The customer plays a different role in each of the models.

Awareness building in the technology-push model, for example, starts when the development team selects, as a “lead user”, a customer who is recognised as an “early adopter” of innovations. The team bases the choice on a long-standing detailed, formalised reporting system on customers, which has been optimised recently through the key account system. The interaction with lead users – who also function as a “market test” – is helpful in refining ideas and optimising the functionalities.

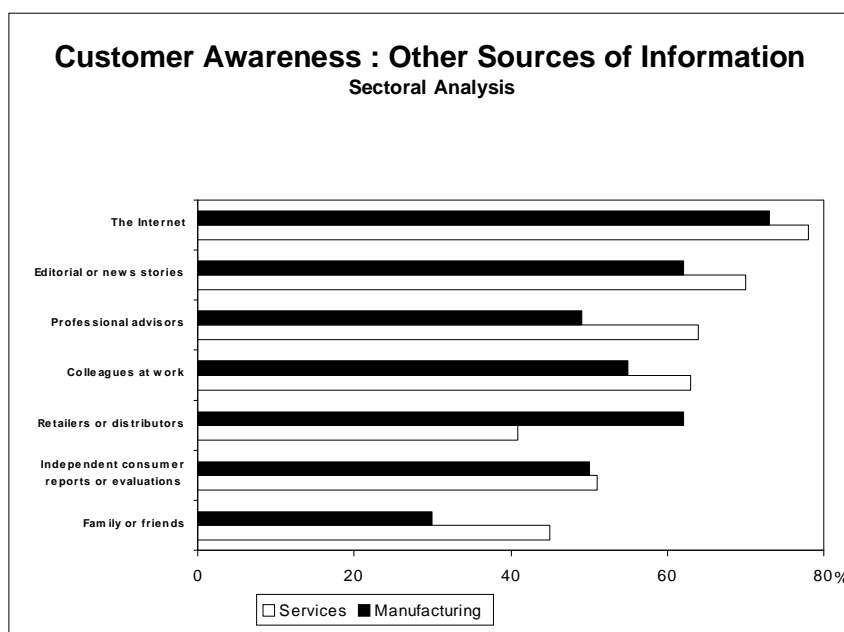
Word-of-mouth and reports on the experience of the lead user help to generate broader acceptance.

Company Case Studies

**Sectoral Differences**

There are also sectoral differences.

*Figure 24*



In all cases except one, companies in the Service sector consider that their customers obtain more information from “other” sources than companies in Manufacturing sectors.

The two sources of information where there is the greatest difference between the Service sector and the Manufacturing sector are the use of:

- Family and friends; and
- Professional advisers.

The exception is that, in the Manufacturing Sector, retailers and distributors play a much more important role.

The explanation lies in structural differences between markets for ‘goods’ and those for ‘services’. Physical products can, by their nature, be distributed directly and indirectly (through intermediaries) to customers. Services are intangible and are, more often, delivered directly by the service provider so customers of companies in the Service sector tend to be more active in seeking information from other sources.

### **5.3. THE SURVEY: CUSTOMER “TAKE-UP”**

#### **5.3.1. The Customer “Take-up” Process**

The “take-up” of a new product or service is the ultimate test of whether an innovation is successful.

Once customers are aware of a new product or service, and they have a potential need for it, they then seek further information about it and start to build positive or negative attitudes towards it. During the decision stage, the customer may seek even more information to assess the new product or service and then to decide whether to adopt it or reject it. Subsequently, customers will continue to evaluate their purchase experience, look for support for their behaviour, and decide to continue or discontinue using the product. Information continues to be important throughout this process.

The unit of decision-making, however, is complex. In Consumer markets, the decision-making unit often involves just one person (e.g. in the purchasing of groceries), but can involve others in the family (e.g. when buying a television or a holiday). In Business-to-Business markets, on the other hand, the decision-making unit is usually much more complex, particularly in the purchase of items that are not a straight replacement of existing items. Here, different people may perform different roles: “Users”, “Influencers”; “Deciders”; “Approvers”; “Buyers”; or “Gatekeepers”.

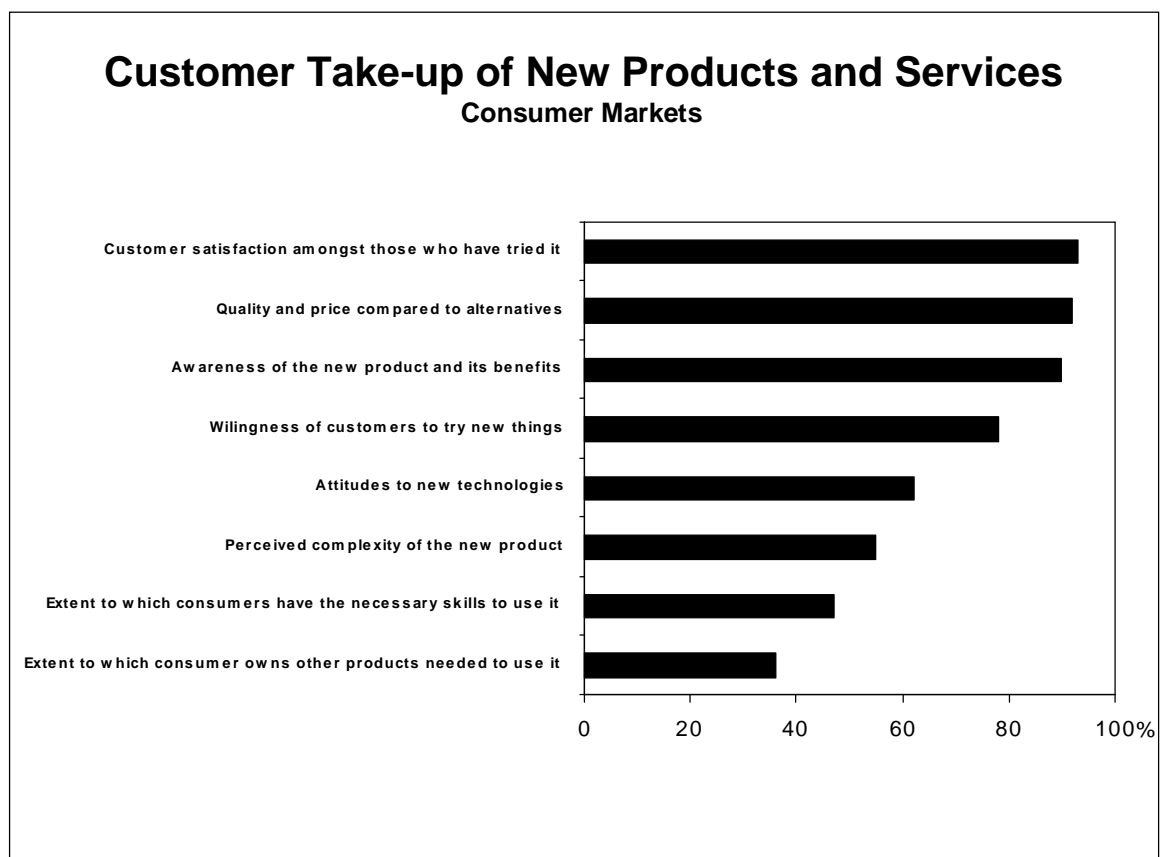
Consumer marketers and Business-to-business marketers were shown different lists of factors, because our literature search revealed that, whilst there was an overlap, there were also some potential differences<sup>16</sup>.

### 5.3.2. Consumer (B2C) Markets

Consumer companies were asked which factors they considered were the most important influences on customers' decisions to buy new products and services.

#### Overall Analysis

Figure 25



<sup>16</sup> See for example, Clayton T. 'Innovation, Communication, and Competitive Growth: Measuring the Role of Commercial Communication in transforming innovation into Competitive Growth' (2000, CEC conference 'Innovation and Enterprise Creation'), Drucker P. 'Innovation and Entrepreneurship: Practice and Principles' (1985), Drucker P. 'The Discipline of Innovation' (Harvard Business Review, November/December 1998), Frambach R. 'Diffusing Innovations in Business-to-Business Markets' (Bruce M. and Biemans W. eds. 'Product Development: Meeting the Challenge of the Design-Marketing Interface' 1995), Kashani K. 'Why Marketing Still Matters' (Financial Times 'Mastering Management' 2000), Kotler P. 'Kotler on Marketing: How to Create, Win, and Dominate Markets' (1999), Levitt T. 'The Marketing Imagination' (1986), Porter M. 'What is Strategy?' (Harvard Business Review, November/December 1996), Solomon M., Bamossy G., and Askegaard S. 'Consumer Behaviour: A European Perspective' (1999), and Wilson R., Gilligan C., and Pearson D. 'Strategic Marketing Management' (1994)

More than three-quarters of companies in Consumer Markets highlighted four factors as the most important influences on customers’ decisions to buy new products or services:

- **Customer satisfaction amongst those who have tried a product or service:** Customers are more likely to buy a new product if existing customers are satisfied with it, such that they become loyal customers, buy the product again and encourage others to do so.
- **Quality and price compared to alternatives:** Customers are more likely to buy a new product or service if it is perceived to be better than substitutes. This is a function of its relative (functional and emotional) quality, and its relative price.
- **Awareness of the new product or service and its benefits:** Customers are more likely to buy a new product or service product, if they are aware of its advantages.
- **The willingness of customers to “try new things”:** Customers are more willing to buy a new product or service if they are willing to try new things.

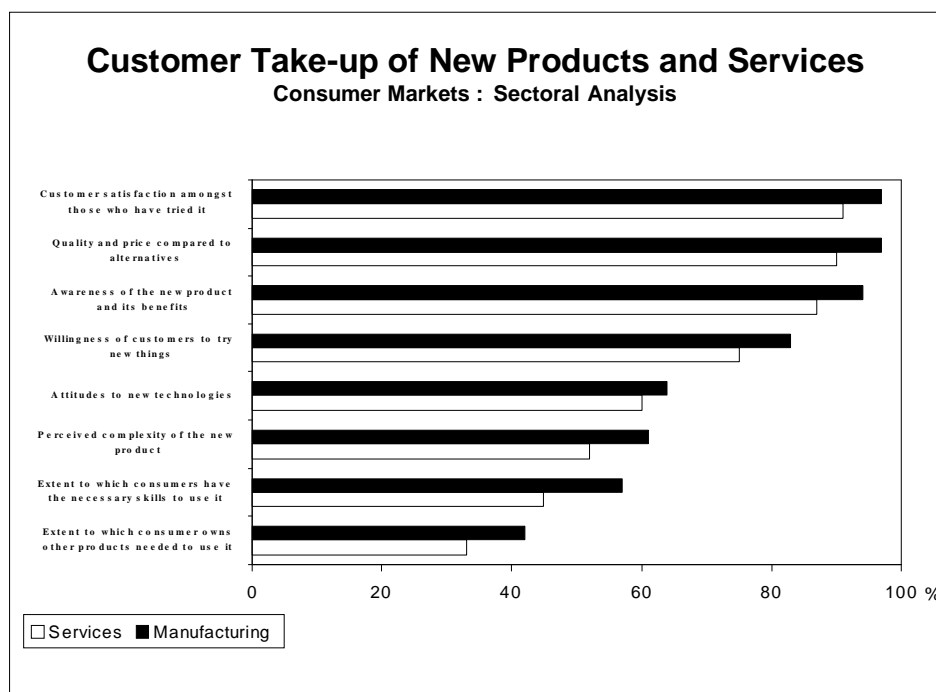
Moreover, more than half the companies in the survey consider that customers are more disposed to purchase a new product or service if:

- They have a favourable attitude to new technologies; and
- The product is not too complex.

### Sectoral Differences

There are some differences between Consumer companies in different sectors.

Figure 26



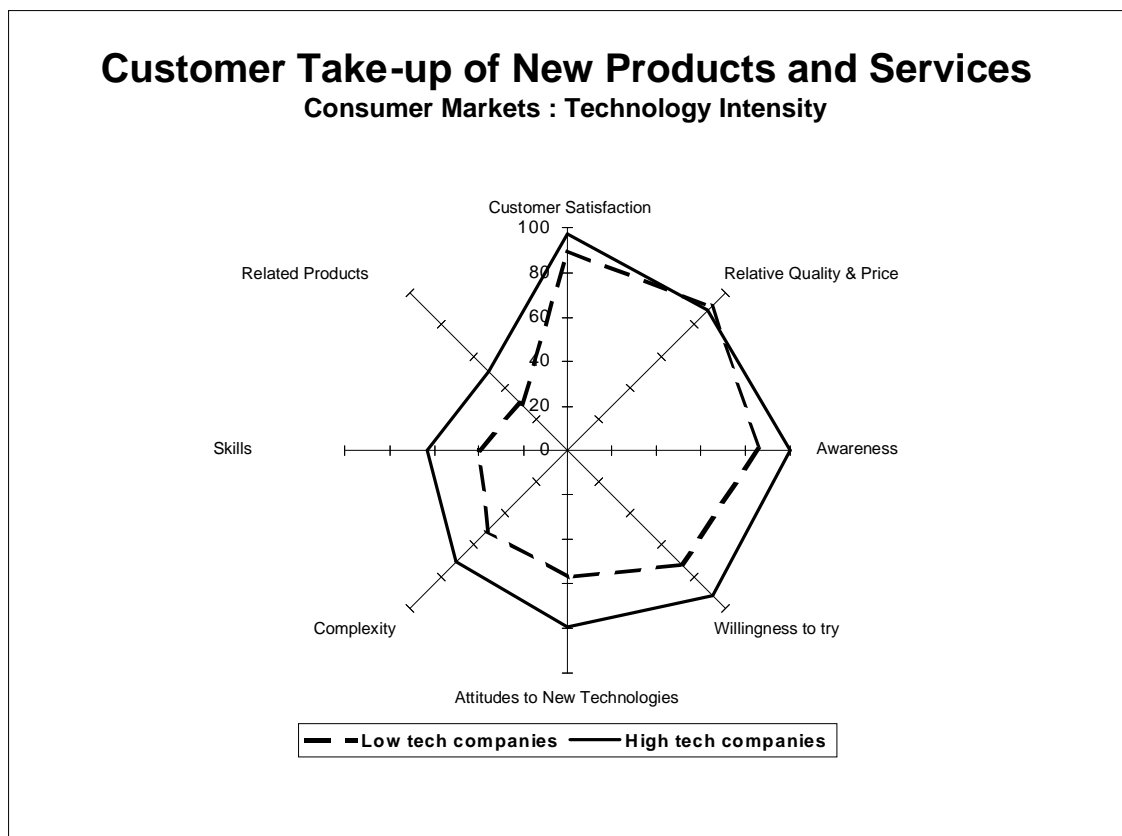
Manufacturing companies consider that their customers place slightly more emphasis on all factors than customers of Service companies. The largest differences relate to the characteristics of the products (and the services):

- Perceived product complexity;
- The extent to which customers have the necessary skills to use it; and
- The extent to which customers own other related products.

### Differences in Technology

There are, however, even greater differences between ‘high-tech’ and low-tech companies.

Figure 27



High-tech companies consider that their customers place more emphasis than other companies on six out of the eight factors covered in the survey:

- The extent to which the customer already owns the other products that are needed to use the new product effectively;
- The perceived complexity of the new product or service (ease of use);
- The extent to which customers have the skills needed to use the new products;
- The favourable attitudes of customers to new technologies;
- The willingness of customers to try new products and services; and

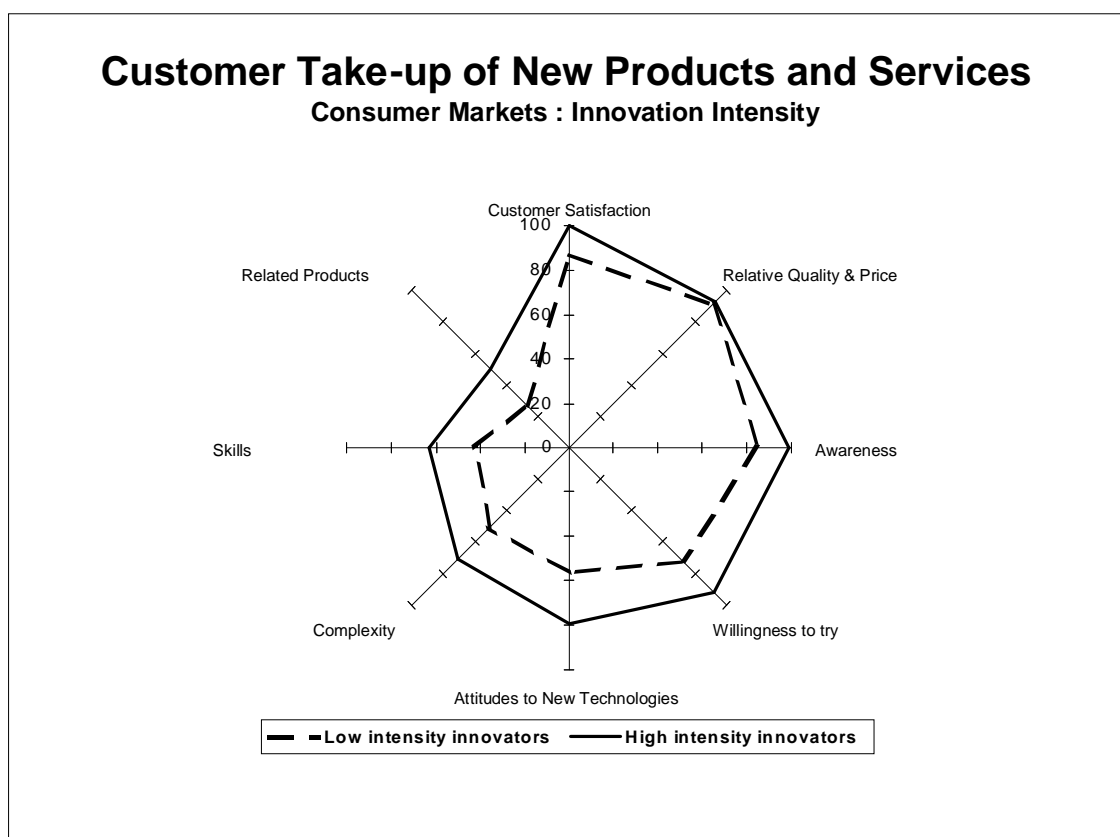
- Customer awareness of the benefits of the new products and services;

This is not surprising given the difference in the nature of the products purchased by customers of “high-tech companies, compared with those purchased by customers of “low-tech” companies.

### Differences in “innovation intensity”

Our research reveals that companies with a higher proportion of their turnover coming from “new” products consider that their customers place much greater emphasis on almost all the factors, than customers of companies with a lower percentage of new products.

Figure 28



Companies with a higher proportion of their turnover coming from “new” products consider that their customers place particular emphasis, compared to other companies, on six out of eight of the factors.

The Dyson Case Study illustrates the importance of market research in setting prices and obtaining feedback from customers.

*Exhibit 19***DYSON: VALUE FOR MONEY**

Founded in 1993, Dyson is the UK leader in the domestic vacuum cleaner market. With annual sales of more than Euro 400 million and over 1,800 employees, the company's products are sold in the UK, Europe, Asia, and North America. The company is still growing rapidly and is expanding its product range through continuous investment in radical product innovation.

Dyson Appliances has a structured and phased development process. New projects are subject to regular, formal “in-house” reviews involving all departments in the company. These examine factors such as market opportunity, technical feasibility, and the potential for protection of intellectual property. They take account of the costs of product development and of new tooling to create manufacturing capacity. An important part is the assessment of the “target” cost. This involves determining, through specialist market research techniques, a target consumer price that will generate sufficient sales volume, retailer mark-up, and manufacturing margin to achieve commercial success.

Market rollouts are based on regions, so that Dyson is able to obtain feedback from customers in one region (and improve the product if necessary) before rolling it out to other regions.

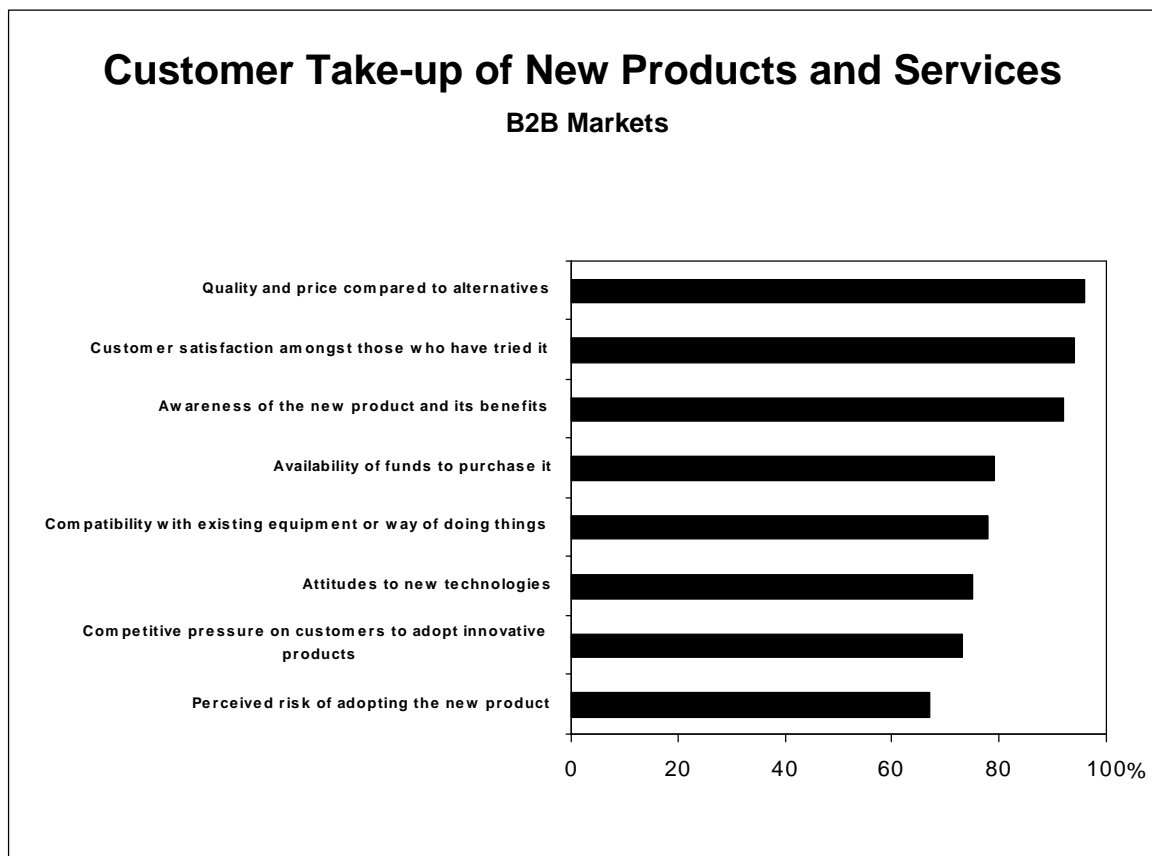
Company Case Studies

This is consistent with other research in the area.

**5.3.3. Business-to-Business (B2B) Markets**

Companies in Business-to-Business Markets were asked which factors they considered were the most important influences on customers’ decisions to buy new products and services.

Figure 29



In Business-to-Business Markets, more than 90% of the companies report that three factors are the most important:

- Quality and price compared to alternatives;
- Customer satisfaction amongst those who have tried it; and
- Awareness of the new product and its benefits.

And more than three-quarters of the companies in the B2B part of the survey identified four other factors as very important in B2B markets:

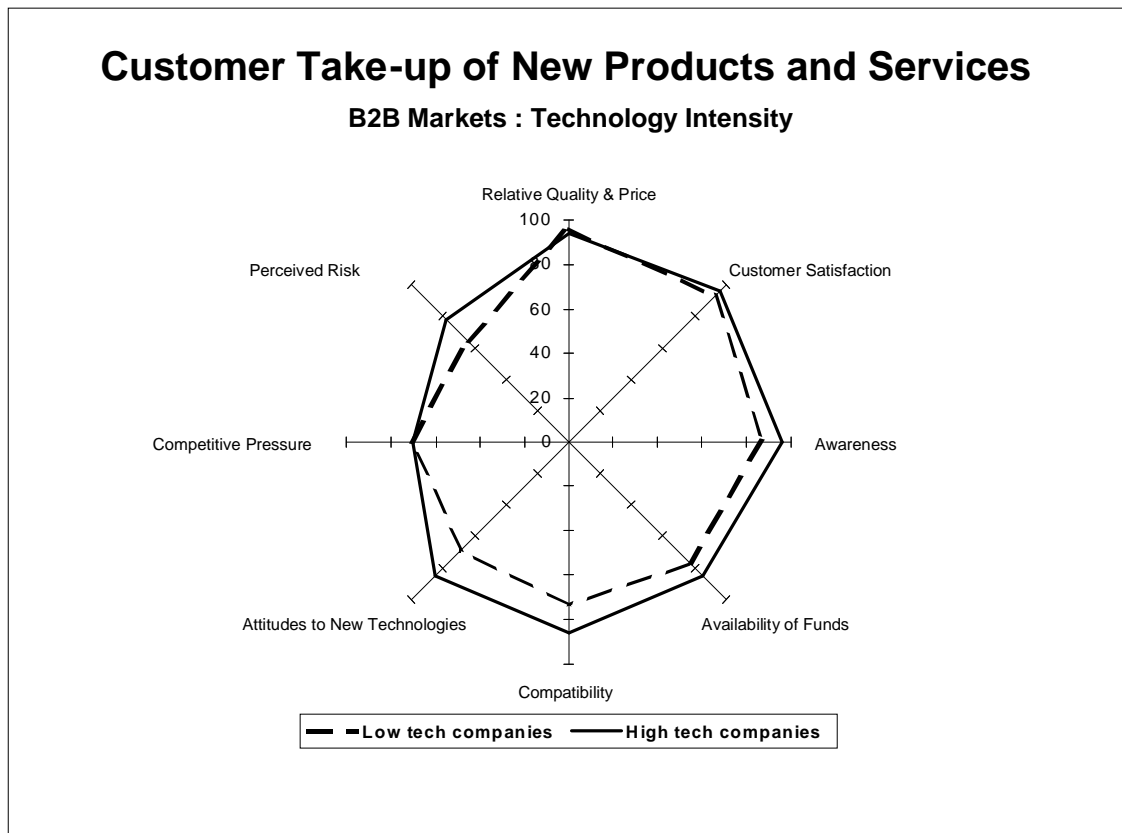
- Availability of funds;
- Compatibility with existing equipment or way of doing things;
- Attitudes to new technologies; and
- Competitive pressures.

These findings are similar across companies of different sizes and different sectors.

### **Differences in Technology**

There are however, some differences between high-tech and low-tech companies.

Figure 30



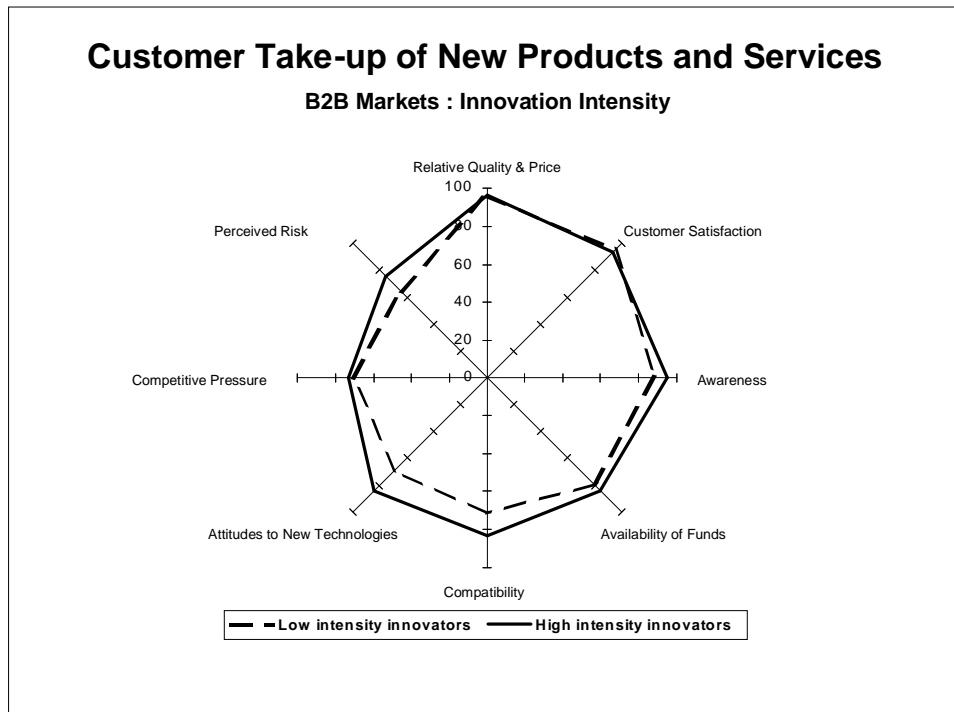
High tech companies place greater emphasis than other companies on:

- The importance of compatibility with existing products;
- Achieving favourable attitudes to new technologies; and
- Reducing the perceived risks of adopting the new product.

### Differences in “innovation intensity”

Our research reveals that companies with a higher proportion of their turnover coming from “new” products consider that their customers place greater emphasis on almost all customer-related, new product development factors than customers of companies with a lower percentage of turnover coming from new products.

Figure 31



Companies with a higher proportion of their turnover coming from “new” products consider that their customers place particular emphasis on:

- The importance of favourable attitudes to new technologies;
- The importance of compatibility with existing products; and
- The need to reduce the perceived risk associated with the adoption of new products.

In this case, the differences may reflect the differing innovation strategies of the two groups of companies. Axiomatically, companies that employ a high intensity innovation strategy depend on customers being willing to take risks and adopt new products. Hence, such attitudinal factors will be important to take-up.

The MedMined Case Study illustrates the importance of feedback from users of “high-tech” products, even for “micro” companies.

*Exhibit 20***MEDMINED: CUSTOMER FEEDBACK**

MedMined is a two-year old U.S. start-up that has developed technology to enable hospitals to track patterns of hospital-transmitted infections (also called “nosocomial infections”) and identify patterns of antibiotic resistance. Located in Birmingham, Alabama, it has only six employees.

MedMined offered a number of its early clients a “discounted” rate to purchase its first product, the Data Mining Surveillance Service (DMSS). It then worked closely with clinicians to understand how the information was used and what other functions were necessary to improve the service.

The first few hospitals to buy MedMined’s service provided informal feedback on its usability (principally through direct contact between the small MedMined team and clinicians) and on additional features they wanted.

MedMined has now instituted more formal mechanisms for eliciting feedback from customers, including “fax-back” forms containing data on a monthly analysis.

Company Case Studies

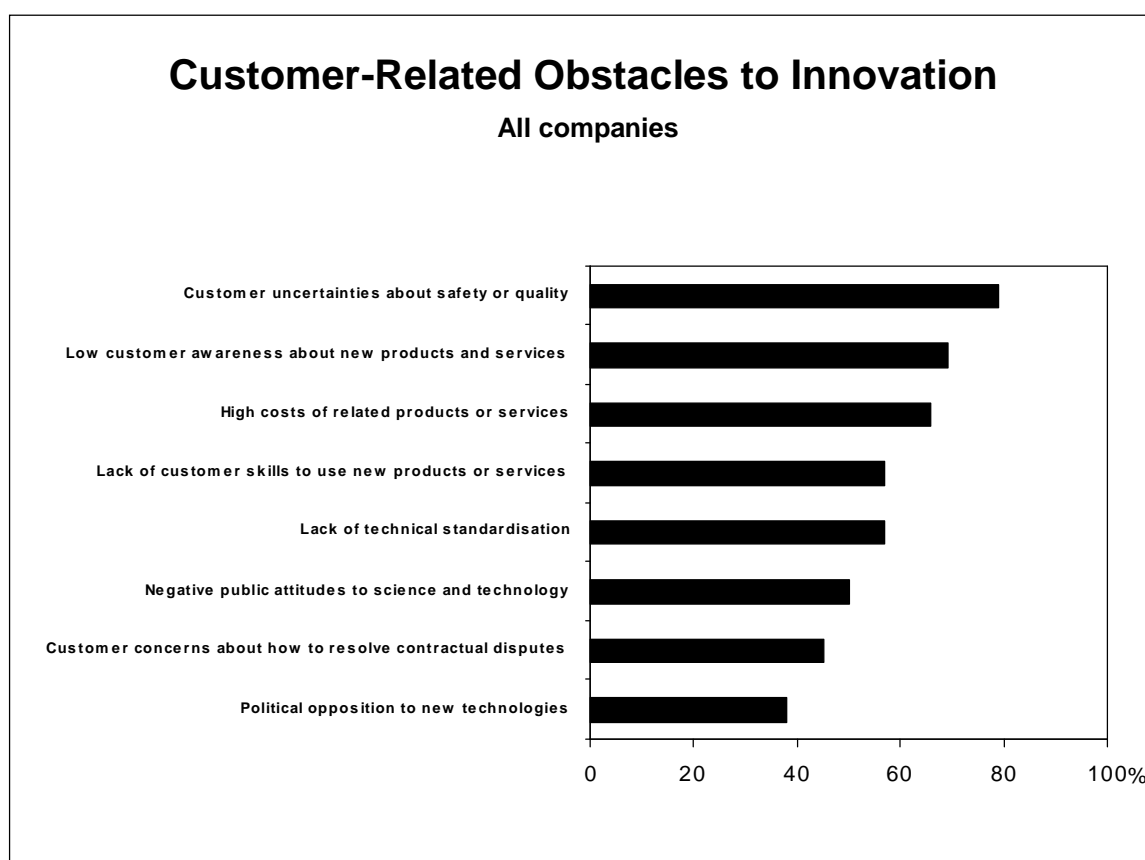
## 6. CUSTOMER-RELATED OBSTACLES: BUSINESS VIEWS

*Our surveys of companies and representative business organisations show that the most important customer-related obstacles to innovation are: customer uncertainties about safety or quality; low customer awareness about new products or services; and the high costs of related products or services. Lack of customer skills to use new products and services and lack of technical standardisation are other important obstacles.*

### 6.1. THE SURVEY - VIEWS OF COMPANIES

We asked companies to identify the most important customer-related obstacles to innovation.

Figure 32



More than two-thirds of companies consider that the most important customer-related obstacles to innovation are:

- Customer uncertainty about safety or quality;
- Low customer awareness about new products or services; and
- High costs of related products or services.

In addition, more than half the companies consider that other important obstacles are:

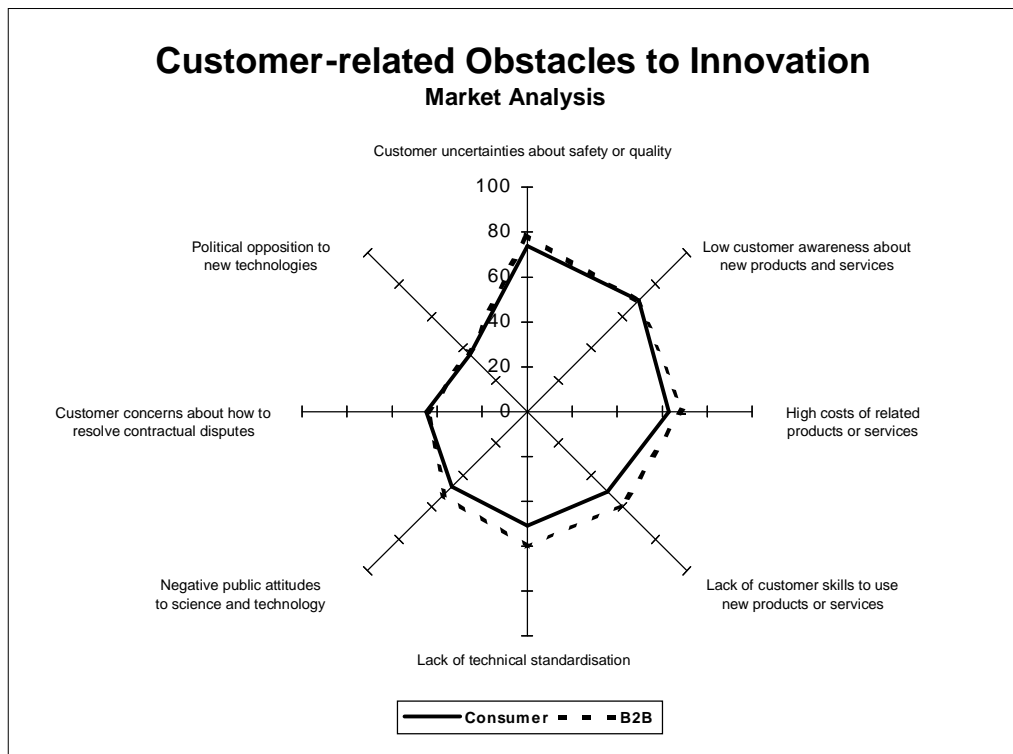
- Lack of customer skills to use new products and services; and
- Lack of technical standardisation.

These findings are remarkably consistent across companies of different sizes, technology intensity and new product intensity.

### Differences in Markets

There are only some slight differences in emphasis in different Markets.

Figure 33

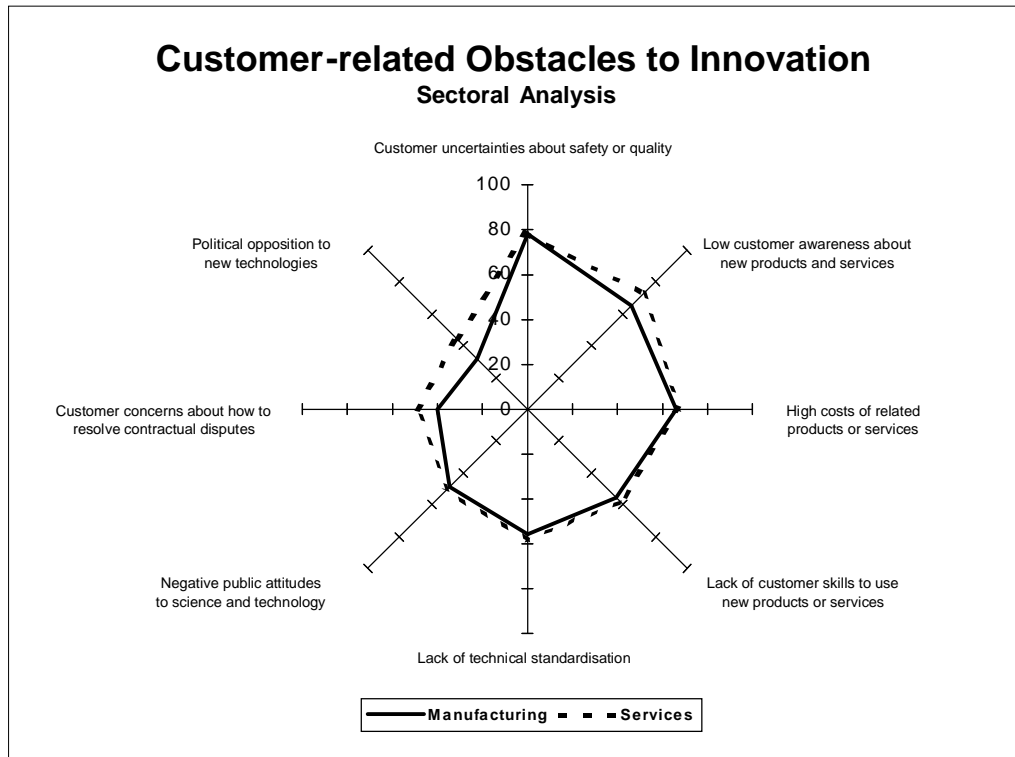


Companies in Business-to-Business Markets consider that their customers are slightly more concerned about the lack of technical standardisation and the lack of (customer) skills to use new products or services.

### Differences in Sectors

There are equally small differences between sectors.

Figure 34

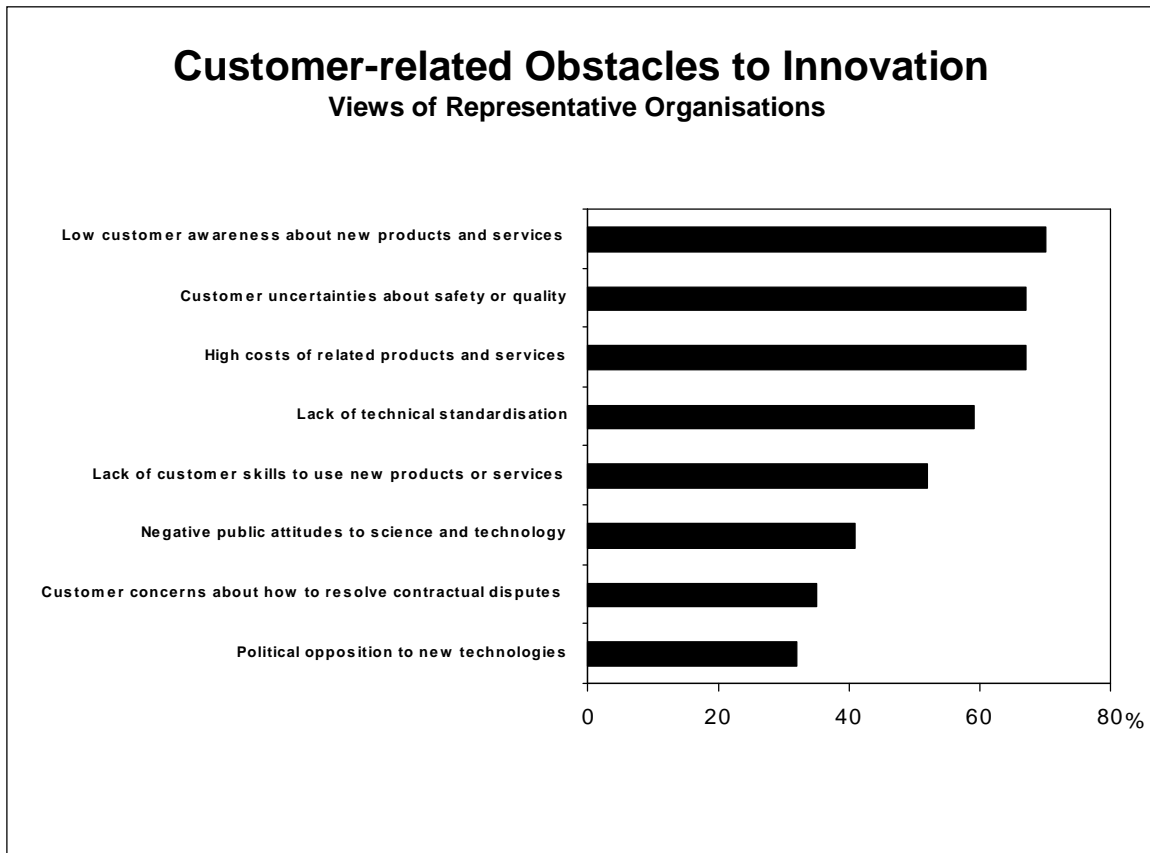


Service companies are slightly more concerned than Manufacturing companies about political opposition to new technologies, low customer awareness of new products and services and customer concerns about how to resolve contractual disputes.

**6.2. THE SURVEY - VIEWS OF BUSINESS ORGANISATIONS**

Business organisations were asked for their views on the customer-related obstacles faced by their member companies

Our survey shows that the views of Business Organisations closely match the views of companies.

*Figure 35*

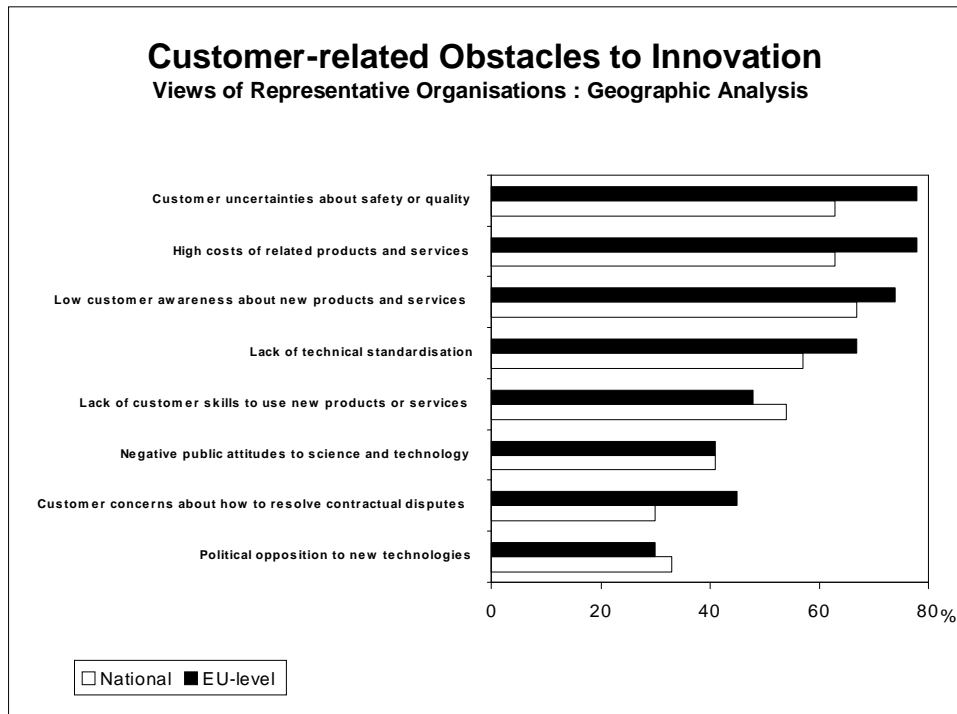
Business organisations believe that their member companies face a range of obstacles:

- Low customer awareness about new products and services;
- Customer uncertainties about safety or quality;
- High costs of related products or services;
- Lack of technical standardisation; and
- Lack of customer skills to use new products.

### **Geographical Differences**

There are some differences of emphasis in the views of representative organisations of different types.

Figure 36



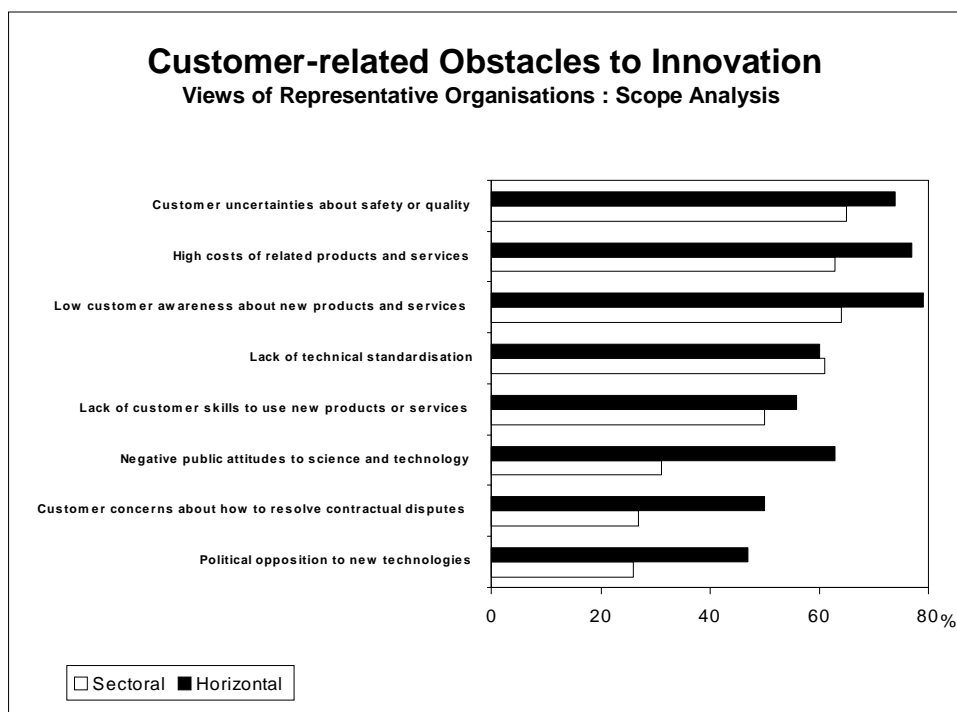
European-level organisations are more concerned than national organisations in the EU about:

- Customer uncertainties about safety or quality;
- The high costs of related products or services; and
- The lack of technical standardisation.

**Differences in Scope**

There are also some differences between “horizontal” organisations and “vertical” ones.

Figure 37



“Horizontal” organisations place much more emphasis than “Sectoral” organisations on:

- Negative public attitudes to science and technology;
- Customer concerns about how to resolve contractual disputes;
- Political opposition to new technologies
- The high costs of related products or services; and
- Low customer awareness about new products and services

One explanation for these differences is the nature of the membership of Sectoral and Horizontal business organisations. Sectoral organisations draw their members from a single sector and hence tend to focus on issues solely of relevance to that sector. In many cases this leads to a narrow focus. In contrast, horizontal organisations represent companies from all parts of the economy. As a result, they are more concerned with the general, long-term business environment and its impact on the overall competitiveness of firms.

## 7. REFORM PRIORITIES OF THE BUSINESS SECTOR

*Evidence from our surveys of companies and business organisations provides an insight into the policy reform priorities of the business community to strengthen the role of customers in the innovation process in the future.*

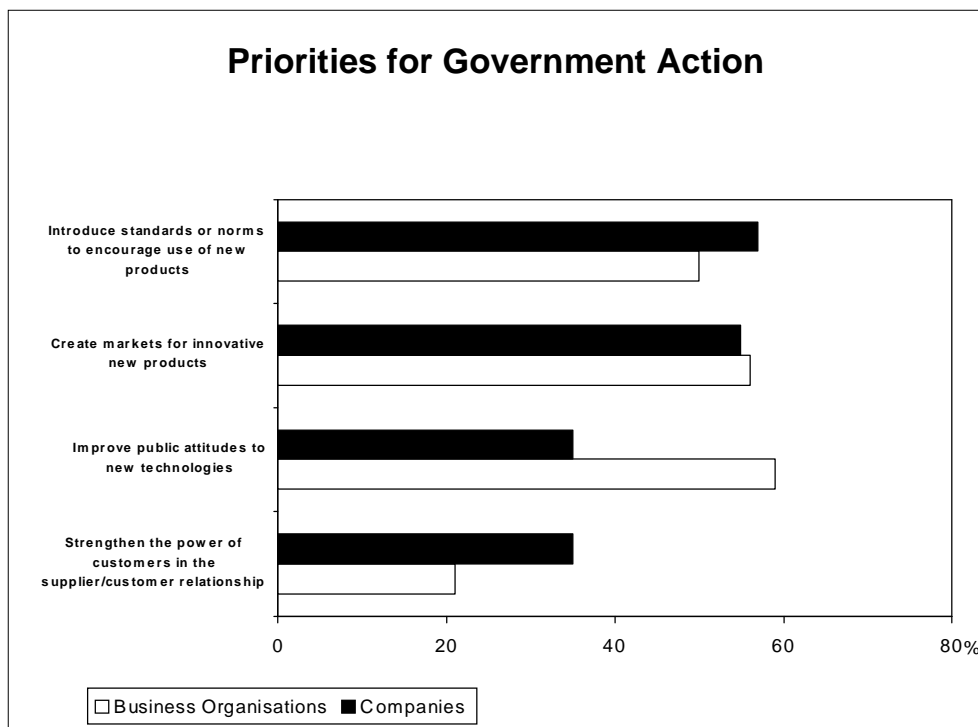
*The introduction of new standards and norms to encourage the use of new products and the creation of new markets for innovative products are the two principal policy priorities of business. Business organisations also want governments to help to change the attitude of the public to new technology.*

*To achieve these objectives, our survey of business organisations identifies specific policy measures. The most important are greater political support for new technologies; more liberalisation of key sectors (to reduce the costs of complementary assets); more public procurement of innovative products and services; and, the creation of new technical standards.*

### 7.1. THE SURVEYS - OVERALL PRIORITIES FOR REFORM

Companies and business organisations were asked to identify the areas in which changes in government policy could strengthen innovation, and, in particular, the power of customers to drive innovation.

Figure 38



The two most important company priorities for further government action are:

- To introduce standards and norms to encourage the use of new products; and
- To create markets for innovative new products.

Both of these priorities are aimed at strengthening demand for new products and services, which is one of the strongest incentives for companies to invest in innovation.

These findings are remarkably consistent across companies of different sizes and in different sectors.

Business organisations hold similar views but also support government action to increase public support for new technologies.

## **7.2. SPECIFIC REFORM PRIORITIES**

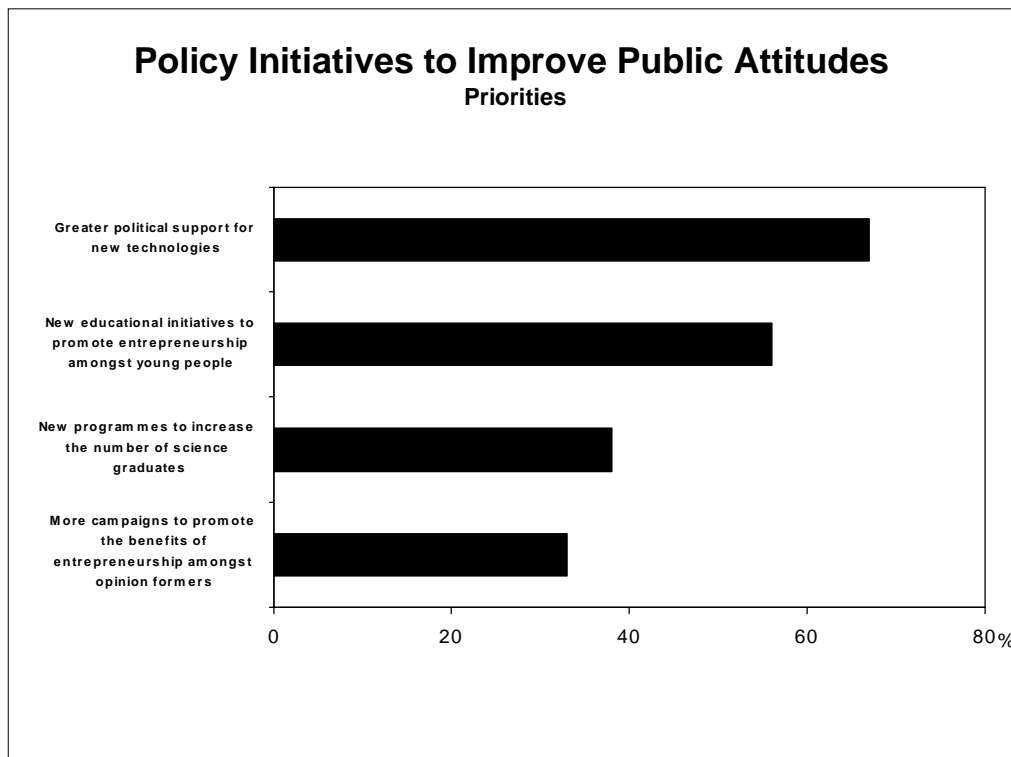
Our survey of Business Organisations identifies three specific reform priorities:

- Initiatives to improve public attitudes;
- Initiatives to improve demand for innovative goods and services; and,
- Initiatives to strengthen the power of customers to demand high quality goods and services (“demanding customers”)

### **7.2.1. Improving Public Attitudes**

The willingness of citizens to take risks, accept change, and experiment with new ideas and technologies is a pre-condition for large-scale innovatory activity. Attitudes to risk and new technologies also indirectly affect innovation through their impact on the regulatory and legislative framework produced by governments in response to the concerns of their citizens.

Our survey of representative organisations provides a list of priorities for public policy initiatives to improve public attitudes.

*Figure 39*

Our research shows that representative organisations in Europe believe that the two initiatives that would have the greatest impact on improving public attitudes to new technologies are:

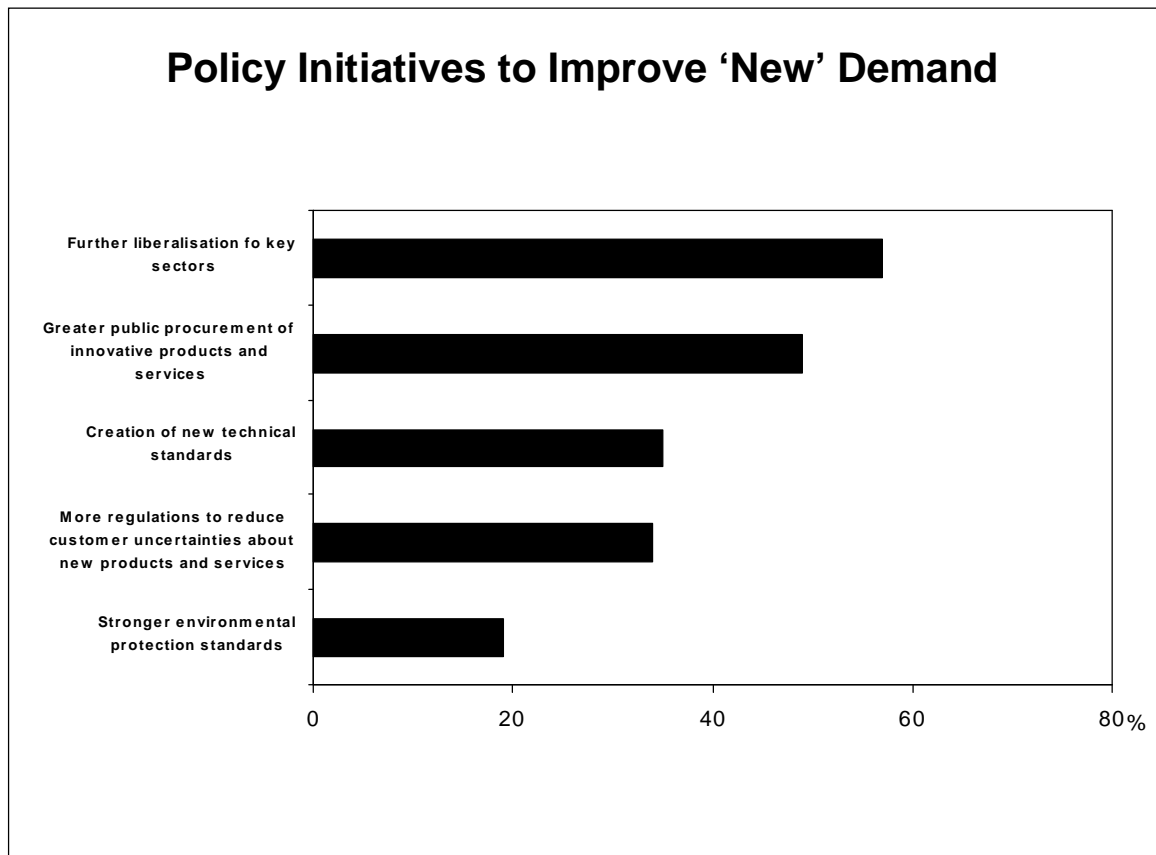
- Greater political support for new technologies; and
- New educational initiatives to promote the benefits of innovation, entrepreneurship and risk-taking amongst young people.

### **7.2.2. Improving Demand**

Strong demand for new goods and services is one of the strongest incentives for companies to invest in innovation. It forms one of the pillars of an effective innovation process in a modern economy.

Our survey of representative organisations identifies priorities for policy initiatives to improve demand for innovative products and services.

Figure 40



Our survey shows that Business Organisations in Europe believe that the two initiatives that would have the greatest positive impact on demand for innovative new products and services are:

- Further liberalisation of key sectors; and
- Greater public procurement of innovative products and services.

### Differences in Type

There are some slight differences of emphasis between organisations of different types. For example:

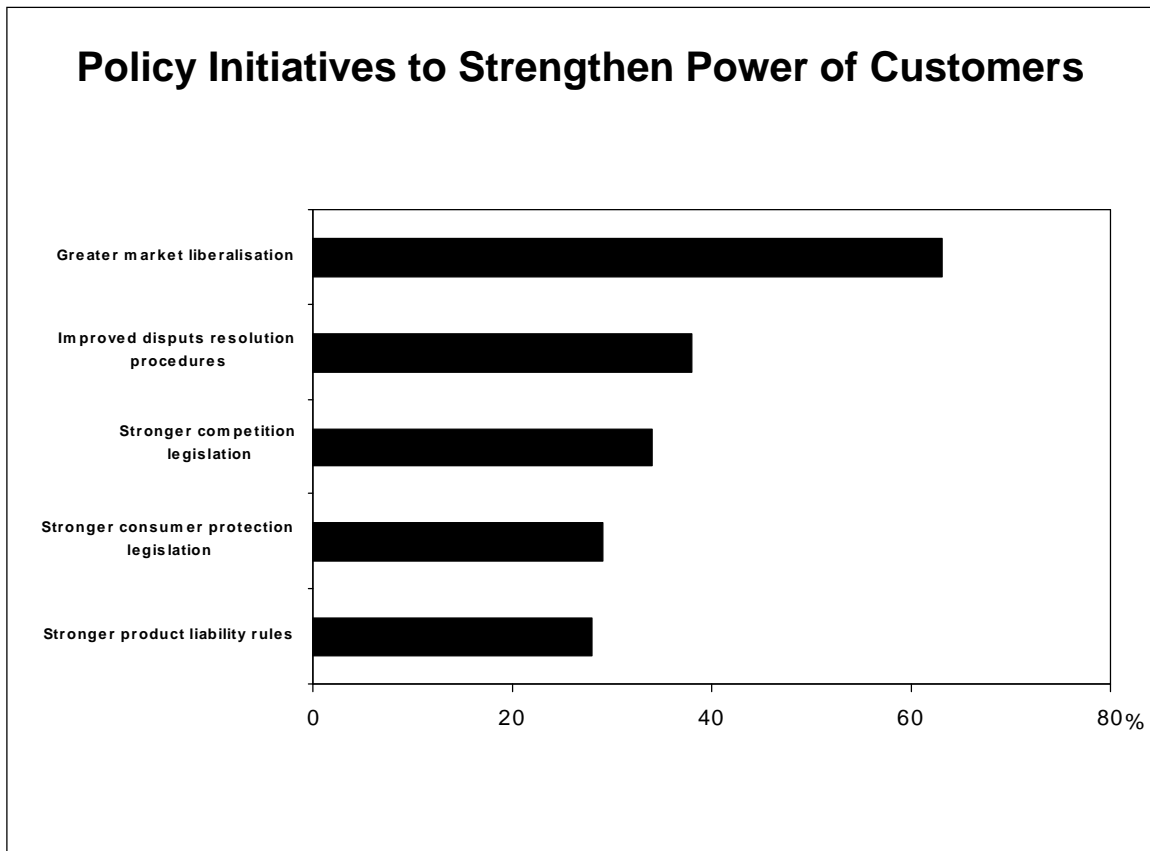
- Horizontal organisations are more positive than sectoral ones about the role of new technical standards;
- Manufacturing organisations are more positive about the role of public procurement; and
- Service Sector organisations are more positive about the importance of technical standards.

### 7.2.4. Strengthening the Power of the Customer

Feedback from customers is a key driver of innovation.

Our survey of representative organisations identifies priorities for policy initiatives to strengthen the power of customers in the Customer/Supplier relationship.

*Figure 41*



Our survey shows that representative organisations believe that greater market liberalisation would have the greatest positive impact.

Organisations of different types hold broadly similar views. There are some slight differences of emphasis. For example:

- National Business Organisations are more positive about the potential impact of stronger competition legislation; whilst
- EU-level organisations are more positive about the potential role of stronger product liability rules.

## 8. PUBLIC POLICY INSTRUMENTS

*Traditional “innovation policies” focus principally on enhancing ‘framework conditions’ and stimulating the development of supply-side factors, such as the availability of ideas, capital and skills.*

*However, our research shows that governments pursue a range of initiatives that help, indirectly, to strengthen the power of customers to drive innovation. These can be divided into four categories:*

- *Building positive attitudes;*
- *Strengthening demand for goods and services (“improving market conditions”);*
- *Strengthening the power of customers to demand high-quality goods and services (“creating demanding customers”); and*
- *Enhancing framework conditions.*

### 8.1. PUBLIC POLICY AND CUSTOMER-DRIVEN INNOVATION

Governments play an active role in fostering an environment where innovatory activity can flourish because of the importance of innovation for economic growth. Activities focus in three principal areas<sup>17</sup>:

- Investments in basic scientific research to stimulate the creation of intrinsically new knowledge and ideas, and the fusion of different types of existing knowledge derived from a wide range of sources.
- Creation of conditions to stimulate investments by businesses in innovation, including a stable macro-environment, properly functioning markets for products, labour, and capital, effective regulatory framework, support for education and the up-grading of skills, and protection of intellectual property rights.
- Improvements in the functioning of “innovation systems”, including strengthening technology transfer mechanisms, and the capacity of organisations to absorb new technologies.

Taken together, these activities have focused principally on enhancing ‘framework conditions’ and stimulating the development of supply-side factors, such as the availability of ideas, capital and skills.

However, governments also pursue a range of fragmented initiatives that help to strengthen, indirectly, the power of customers to drive innovation.

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<sup>17</sup> See for example, Guinet J. and Pilat D. ‘Promoting Innovation – does it matter?’ (OECD Observer, Summer 1997) MERIT ‘Innovation Policy in the Knowledge-based Economy’ (2000, study for the European Commission), OECD ‘Technology, Productivity, and Job Creation’ (1996), and, OECD ‘Industrial Competitiveness in the Knowledge-based Economy – The New Role of Governments’ (1997),

## 8.2. BUILDING POSITIVE ATTITUDES

Evidence from our surveys suggests that positive attitudes to new technologies and a willingness to try new ideas are important cultural pre-conditions for the take-up of innovative products.

Governments in the EU have taken a number of initiatives to try and build positive attitudes to science, technology, and risk-taking amongst their citizens. In most countries, a greater tolerance for risk-taking is developed through programmes that promote entrepreneurship and enterprise.

Initiatives include:

- *Reforms of the education system to engender positive attitudes to risk-taking, science and technology amongst school and college students*

The *Finnish* government, for example, is seeking to improve attitudes to risk-taking through the educational system.

*Exhibit 21*

### EDUCATIONAL REFORM IN FINLAND

Entrepreneurship skills are now developed throughout the Finnish education system, from primary school to university. It aims to develop a culture of increased acceptance of risk, by improving flexibility, initiative and creativity, and by providing a knowledge of business activities and an understanding of the pre-conditions for entrepreneurship.

At the same time, the Finnish government is pursuing a government-wide, multi-departmental, two-year Entrepreneurship project. The aim of the project is to promote new business start-ups. It includes awareness-building campaigns to promote the value of innovation and entrepreneurship.

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The *Spanish* government is seeking to establish the benefits of Science and Technology through the education system.

*Exhibit 22***CURRICULUM REFORM IN SPAIN**

One of the aims of primary and secondary education in Spain is to establish an early awareness of the benefits of Science and Technology. Specifically, the curriculum is designed to:

- Provide students with a basic understanding of science and technology, including the “scientific method”.
- Encourage students to value the benefits of science and technology as a basis for improving working conditions and the quality of life.

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Other programmes designed to improve attitudes towards science and technology on the one hand, and new products and services on the other are:

- “ICT op School” (ICT at school), which seeks to stimulate *Dutch* students to use new technology particularly Information and Communications Technology, offers a national information and consulting centre for the use of ICT at schools. It helps schools to use educational software, infrastructure and networking; it also trains teachers.
- A Science and engineering “ambassadors” scheme in the *UK*, under which young university scientists return to schools to inspire 14-18 year-olds to take up studies in science and engineering.
- *Awareness-raising campaigns to illustrate the benefits of science, technology, innovation, and entrepreneurship to citizens.*
- Two *Austrian* programmes seek to increase public awareness of science, technology and innovation

*Exhibit 23***AWARENESS-BUILDING PROGRAMMES IN AUSTRIA**

The Austrian government has been active in increasing public awareness of science, technology, and innovation.

- A “Reform Dialogue” is held each year, involving stakeholders from politics, science, and business. Attended by the Austrian Chancellor, the fourth annual dialogue focused on innovation policy.
- The Austrian Industrial Research Promotion Fund (FFF) and the social partners award prizes to enterprises that achieve outstanding innovation performances in specific areas. In the first year, the contest focused on “Innovation and Employment Growth”.

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- *Political support for new technologies.*

This encompasses:

- Investments in the use of new technologies in *Italy*. One initiative, for example, provides financial support for new e-government projects, designed to improve ICT capabilities among regional and Local Public Administrations and develop networks.
- Organisational changes to government departments to improve focus in specific areas, such as biotechnology in *France*. A department dedicated to biotechnology (Département de Bio-Ingénierie) was created within the Ministry of Research. The Foundation of National Science (*Fondation Nationale de Science - FNS*) is responsible for providing assistance to all stages of biotechnology development.
- Direct public statements in support of new technologies seek to contribute to improving public attitudes to new technologies. In a number of countries, government Ministers have, for example, made a number of public statements in favour of biotechnology, in an attempt to try to reduce uncertainties and to improve public support for the benefits of biotechnology.

### **8.3. STRENGTHENING DEMAND**

Strong demand for new goods and services is one of the strongest incentives for companies to invest in innovation.

In recent years, governments have begun to pursue a range of initiatives to strengthen demand for new goods and services in selected markets. One reason for this is the

increasing awareness amongst European policy-makers of the economic and social benefits of the widespread diffusion of new technologies (especially those based on ICT) and the resistance to take-up amongst citizens. In response, a number of governments have introduced programmes to stimulate purchase and use of specific technologies. Based on removing obstacles to diffusion, such programmes include:

- *Creating the conditions necessary to encourage the use of specific technologies, such as:*

- Digital TV. To build demand in the *UK*, Media and Telecoms regulators have determined that consumers will have a choice of digital platforms (Satellite, Cable, or Terrestrial) and unhindered access to a number of free-to-air TV channels. The Government has set a target of 2011 for the conversion of all TV transmissions from “terrestrial” to “digital”.
- Broadband. Twenty *Dutch* cities have started initiatives to connect households and university (student) residences to the broadband Internet by fibre optics. This stimulates the provision of new services.
- Sustainable technologies. Legislation permits public authorities in *Portugal* to give preferential treatment to suppliers endowed with quality and environmental management systems, with safety and occupational health systems, and providing certified and “green” products.

This covers areas such as education, health, civil engineering, housing and urban development, transportation, environment, support for the disabled, culture and leisure, and the modernisation of Public Administration.

- Alternative energy. Initially, the *Danish* government invested considerable sums to research into wind technology. As the windmills became more efficient, the Danish government provided funds for individuals, groups and electricity companies to invest in windmills.

Energy plans were then changed to include a minimum share based on renewable or alternative sources; and citizens in some municipalities can now chose to purchase electricity based on renewable energy sources or energy based on fossil fuels. This further stimulates the demand for windmill technologies and other renewable energy technologies

- *Creating a critical mass of initial demand by acting as an “early adopter” through public procurement and reforming business processes within government.*

- In *Finland*, for example, national legislation requires public sector procurement units to issue competitive tenders for goods and services that fall below the threshold value set by the European Union and the

WTO, with the twin aims of upgrading the efficiency of purchasing by the public sector and improving the international competitiveness of Finnish companies by setting high standards as a “demanding customer”.

- *Stimulating wider demand by reducing the costs of new products and services.*
  - In the mobile telephone sector, there are areas in *France*, which are not reached by any of the three networks. The government has launched a programme, which will run from 2001-2003, to contribute financially to the infrastructure that will enable the whole of the country to be covered by a mobile telephone network. Although the resident population in these areas is not large, many of the areas are attractive to tourists, and the completion of the network in France will stimulate demand.
  - Subsidies are available in the *Netherlands* for private households, enterprises and housing associations to stimulate the use of sustainable and renewable energy.
- *Investing in education and providing access to training and advice to develop the skills needed to operate new products.*

In *Germany*, for example, the focus on improving the diffusion of ICT has led to reforms in long-established education and training programmes.

#### *Exhibit 24*

### **BUILDING ICT AND ASSOCIATED SKILLS IN GERMANY**

Many of the German Lander have started to adapt their curricula in order to enhance the ability of their pupils to understand the opportunities of new technologies. One example is the changes in the syllabus to include the use of new media applications (Internet) for all categories of school in Baden-Wurttemberg.

At the same time, the Federal government has started initiatives to improve skills in schools in key areas. ‘Initiative D-21’, for example, seeks to speed up the transition to an information economy. It includes the provision of IT training for teachers, the installation of Internet capabilities in classrooms, and the creation of an educational portal for all levels of schools.

Other changes have been made within the traditional German “dual system” of professional training to prepare young workers for new challenges posed by ICT, knowledge-intensive services, and the fusion of formerly separated disciplines.

Government funding is also available to support the improvement of ICT skills of existing workers. Through the ‘LERNET’ programme, the BMWi finances projects to develop further education schemes in the IT sector so that workers can be equipped with skills needed for ICT.

- *Using standards and norms to reduce consumers’ uncertainties about the quality, safety, effectiveness and security of new technologies.*

The *Portuguese* government, for example, is seeking to reduce consumer uncertainties about electronic commerce

*Exhibit 25*

**REDUCING UNCERTAINTIES ABOUT ELECTRONIC COMMERCE IN PORTUGAL**

In 1999, the Portuguese government published a set of rules covering the security of electronic transactions, the protection of personal data, the protection of consumers’ rights, and the surveillance of industrial property rights.

The Consumers Institute (Instituto do Consumidor) has also published a consumers guide to electronic commerce.

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Other countries have used a similar approach to facilitate market development in low-tech sectors.

There is an example from *Denmark* that seeks to reduce consumer uncertainties about quality and safety in restaurants.

*Exhibit 26*

**REDUCING UNCERTAINTIES ABOUT THE QUALITY OF RESTAURANTS IN DENMARK**

All retailers of prepared food, including cafes and restaurants, have frequent visits from the government’s food control agency (*Levendsmiddelskontrollen*) to ensure that stores and restaurants meet the Danish food hygiene laws.

The results of these inspections must be visible to customers in the store and restaurant. They take the form of a ‘smiley’, which uses happy, indifferent, and sad rankings to explain the hygiene standard of the outlet.

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- *Improving compatibility and inter-operability of equipment through programmes of standards and norms.*
  - As part of its e-government initiative, the *Italian* government requires standardisation between Central, Regional and Local Public Administrations.
- *Providing consumers with information about the ethical or environmental origin of products and services through new forms of standards and norms.*

- The *German* government has established a new label ("Bio-Siegel") to make the innovative market for bio-products more transparent and reduce uncertainties about their safety.
- *Improving access and reducing the cost of related technologies through investments in infrastructure and the liberalisation of key ‘supplier’ industries, such as post, telecommunications, and energy.*
  - In *Spain*, the General Telecommunications Infrastructure policy provides for a standard approach to the development of telecommunications services in the interior of buildings. This facilitates the incorporation of new technologies in new buildings in an economical and transparent way for the users.

#### 8.4. ENCOURAGING “DEMANDING CUSTOMERS”

Through a range of different policies, governments strengthen the power of customers to encourage companies to up-grade their products and services. This occurs because government actions, in areas such as Consumer Policy, enable consumers to protect their own interests and to make informed choices. In turn, this increases competitive intensity between companies and strengthens the position of the customer in relationships with suppliers. Consumer policy can also act to raise the expectations of customers, such that they come to expect high standards

Consumer policy in *France*, for example, seeks to improve consumer protection, to help customers to demand high standards.

*Exhibit 26*

#### CONSUMER POLICY IN FRANCE

French consumers are protected by the ‘Code on Consumer Protection’ that aims to ensure that consumers are informed of the essential characteristics of goods and services, prices and conditions of sale, and delivery times. It aims to regulate certain commercial practices such as advertising and distance selling, and to ban commercial practices that deceive consumers. The Code also regulates the general terms of contracts, in particular forbidding unfair clauses, and aims to establish rules for the conformity and safety of products and services.

The French Ministry of Economy, Finance, and Industry (MINEFI) encourages consumers to challenge commercial practices that contravene the Code, by providing advice on complaints procedures. Thus, encouraged by the government, the French consumer has come to expect high standards from businesses, and is protected by law if these standards are not met.

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Most governments seek to protect the rights of consumers as purchasers, and the health and safety of consumers as users. The aim of these policies is principally to manage risks. An exception is the *UK*, where one of the policy objectives of the government is “to create demanding customers”.

*Exhibit 28*

**CONSUMER POLICY IN THE UK**

In its 1998 Competitiveness White Paper (*Building the Knowledge-driven Economy*) the UK government recognised the importance of the “knowledgeable consumer” for innovation. The recent White Paper on Consumer Policy (*Modern Markets: Confident Consumers*) reinforces this. It states: “confident consumers making informed decisions in modern competitive markets promote the development of innovative and good value products”.

The new policy builds on the UK’s well-established and mature framework of consumer legislation designed to protect the rights of consumers and to manage the risks of goods and services to human health and public safety.

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As a part of this expansion of Consumer Policy in EU countries, there have been a number of initiatives, which have had the effect of strengthening the role of the customer in the innovation process. These include:

- *Strengthening dispute resolution procedures.*
  - Much work has been done in *Portugal*, in recent years, to improve legal protection for consumers including rules concerning the supply of public services; Centres for Arbitration of Consumption Conflicts; and informal, voluntary conciliation initiatives (including banking and advertising).
- *Providing consumers with the information needed to understand complex transactions and to safeguard their own interests*
  - In *Austria*, new laws governing e-commerce and extended warranty periods were enacted at the beginning of 2002. The Internet Ombudsman informs and advises consumers in the field of e-Commerce; and awards quality marks to companies that meet specified standards.

- 
- *Strengthening product safety legislation to reduce the incidence of consumer dissatisfaction in transactions.*
    - The *French* government has shown consumers that it is concerned about the safety of products and services, through a series of laws that have, for example, banned particular types of inflammatory bedding material, and certain types of plastic in children’s toys.

### **8.5. “FRAMEWORK CONDITIONS”**

Government decisions about “Framework Conditions” (the basic structure of legislation that governs the operation of product, labour, and capital markets) also influence the role of customers in the innovation process.

Liberalisation of product markets, for example, has helped to drive changes in the needs, wants and behaviours of customers in B2B markets. Increased competitive intensity, one of the major consequences of market liberalisation, is another major determinant of the take-up of new products and services in B2B markets.

Market liberalisation is complemented by competition policies. These help to reinforce the process of increasing competitive intensity. In some EU Member States, for example, the role of competition policy in strengthening the role of the customer in the buying process, and hence as a driver of innovation, is increasingly being recognised.

## 9. FUTURE DEVELOPMENTS IN PUBLIC POLICY

### 9.1. SCOPE

Public policy options for increasing the power of customers to drive innovation can, be grouped into three broad areas:

- Objectives.
- Specific policy areas.
- Organisational responsibilities.

#### 9.1. NEW OBJECTIVES

Our research suggests that it would be desirable to develop a new set of objectives for Member State and EU-level Enterprise and Innovation Policies focusing on the critical role played by customers in the innovation process.

- **Creating “demanding customers”:** Enterprise and Innovation Policies could help customers to enhance their role in the innovation process by building knowledge; by providing information; and by providing customers with mechanisms to ensure that suppliers deliver what they promise.<sup>18</sup>
- **Ensuring the presence of structural and cultural pre-conditions to the take-up of new, innovative products:** Enterprise and Innovation Policies could help customers to enhance their role in the innovation process by improving their skills; by increasing competitive pressure among suppliers; by making it easier and cheaper for customers to own complementary assets; by ensuring that there is maximum compatibility with existing products and services; and by developing more positive attitudes to risk-taking, science and technology.<sup>19</sup>
- **Limiting the impact of customer-related obstacles to innovation:** Enterprise and Innovation Policies could help customers to enhance their role in the innovation process by reducing customer uncertainties about safety and quality; and by increasing customer awareness about new products or services.<sup>20</sup>

These objectives could be pursued across all sectors of the economy: they should not be confined solely to high-tech or emerging sectors.

### 9.3. PUBLIC POLICY REFORMS

Our research suggests that it would be beneficial to introduce additional reforms in a number of areas of public policy:

<sup>18</sup> See: Chapters 2.2.; 5.3.; 6.1.; and 7.2

<sup>19</sup> See: Chapters 3.2.; 5.2.; 5.3.; 6.; 8.2.; 8.3.; and 8.4

<sup>20</sup> See: Chapters 3.2.; 5.2.; 6.2.; 7.2.; and 8.2.

- Standards Policy;
- Education and Training Policy;
- Consumer Policy;
- Enterprise Policy;
- “Framework Conditions”; and
- Political support for new ideas.

### 9.3.1. Standards Policy<sup>21</sup>

In the past, standardisation policies have focused on establishing standards and norms to facilitate trade, to set safety limits, and to ensure the inter-operability of equipment or processes. Often this has been achieved through the work of voluntary bodies acting on behalf of government, sometimes within a legal framework. In recent years, this has begun to change and new types of standards have been introduced that provide customers with greater information, such as the composition or nature of products; the environmental impact of products, services, and processes; and the ‘reliability’ of suppliers.

Our research suggests that new types of standards could be beneficial in a number of sectors to:

- **Reduce consumer uncertainties about safety and quality:** This is the most important customer-related obstacle to innovation and one of the ways in which standards help create new markets.
- **Help customers make informed choices:** This is the most important way in which standards can help to create new market opportunities.
- **Stimulate demand for new products and services:** This is one of the most important drivers of change in customer needs in Consumer (B2C) Markets.

Standards could encompass all parts of the economy, but should be developed for specific sectors, products, and services.

### 9.3.2. Education and Training Policy<sup>22</sup>

Most Member States have taken steps to use Education Policy to shift attitudes towards science, technology, and risk-taking. In some instances, programmes have also been established to improve skills amongst young people.

Our research suggests that Education and Training Policy could help to meet the new customer-based goals of Enterprise Policy by focusing on building up three of the pre-conditions for the take-up of new products by:

- **Creating positive attitudes to science and technology:** By undertaking activities such as curriculum reform, and ‘awareness’ programmes; by

<sup>21</sup> See: Chapters 3; 6; 7.2.; and 8.4.

<sup>22</sup> See: Chapters 5.3.; 6; 7.2.; 8.1.; and 8.3.

improving links between schools and universities; and by providing additional investment in facilities.

- **Stimulating interest in new products and services (“risk-taking”):** By expanding programmes that focus on promoting innovation, entrepreneurship and enterprise amongst school and university students.
- **Building generic skills necessary for the use of new products and services:** By monitoring continuously the needs of employers, and ensuring that Education and Training Policies are adapted to meet them.

### 9.3.3. Consumer Policy<sup>23</sup>

In response to concerns about risk, EU governments have taken a number of initiatives to protect consumers. This has led to a major expansion in Consumer Policy activities, most of which seek to protect the rights of consumers as purchasers, and the health and safety of consumers as users.

In addition to these policy goals, our research suggests that the objectives of Consumer Policy could usefully be expanded to include “the creation of demanding consumers”, if it is to contribute to the new, consumer-based goals of Enterprise Policy.

To achieve this objective, our research suggests that Consumer Policy could:

- **Emphasise that no purchasing or consumption experience is “risk free”:** Taking risks is central to the innovation process. Policies that encourage customers to become more risk averse serve to strengthen existing obstacles to innovation.

The risk management aspect of Consumer Policy should be designed solely to protect consumers against major hazards and risks to physical safety or major risks to economic circumstances. It should not be designed to protect consumers against all hazards and risks.

- **Enhance the knowledge and information available to customers:** “Information gaps” are major obstacles to the development of new markets and the take-up of innovative products and services.

Consumer Policy could help to fill these gaps through labelling and the provision of other information, and through support for independent consumer organisations.

- **Review regulations that control commercial communication and marketing practices:** Commercial communication is critical for building awareness of new products and for meeting the emotional needs of customers in B2C markets. Price reductions and promotions, for example, provide

<sup>23</sup> See: Chapters 4.2.; 5.2.; 5.3.; 6.1.; 7.2.; 8.1.; 8.3.; and 8.4

suppliers of new products with ways to create superior value and hence to meet the one of the basic requirements of take-up.

Regulation of these types of activity could strike a better balance between protecting consumers from harmful practices and facilitating innovation.

- **Provide consumers with low cost ways to ensure that suppliers “deliver on the promise”:** The capacity of customers to demand innovative products and services is determined by a range of factors including the level of competition, and the extent to which customers have “buyer power”.

Consumer Policy could be designed to strengthen the power of buyers (particularly smaller buyers) through regulations to control contractual terms and performance; through product liability legislation; and through the provision of low cost dispute resolution procedures.

#### 9.3.4. Enterprise Policy<sup>24</sup>

Government policies focused directly on the business environment and activities of companies could help to achieve the new goals of Enterprise Policy. Our research suggests that Enterprise Policy could help customers to drive innovation in companies by:

- **Building awareness of new products, services, and operating methods (especially in B2B markets):** This is one of the basic requirements for the take-up of new products and services.

Enterprise Policy could play an important role in raising the awareness of customers of the benefits of new products, services, and operating methods (particularly the exploitation of new technologies in B2B markets) through the encouragement of demonstration projects; and the provision of information.

- **Enhancing the capacity of SMEs to involve customers in the innovation process phase of the “innovation chain”:** This is a key driver of successful innovation in many companies.

Enterprise Policy could help companies (particularly smaller companies) through the dissemination of good practices, benchmarking, and demonstration projects.

#### 9.3.5 “Framework Conditions”<sup>25</sup>

The role of customers in the innovation process is affected by government decisions about “Framework Conditions” - the basic structure of legislation that governs the operation of product, labour, and capital markets. The design of “Framework Conditions” could help to achieve the new goals of Enterprise policy by:

<sup>24</sup> See: Chapters 3.2.; 4.2.; 6.1.; 7.2.; and 8.2.

<sup>25</sup> See: Chapters 5.3.; 6.1.; 7.2.; 8.3.; and 8.5.

- **Reducing the costs and expanding the availability of related products or services:** Lack of access to such products, often because of high costs, is a major obstacle to innovation. Well-designed framework conditions play an important role in generating competitive markets.

Policy-makers could identify the important “infrastructure” sectors that affect the development of downstream markets; and ensure that the legislative environment favours innovation and competition.

- **Maintaining competitive pressure on B2B customers:** Competitive pressure is one of the key pre-conditions for take-up of innovative products, particularly in B2B markets. Supportive Framework Conditions, including Competition Policy, are critical to maximising competitive intensity in all sectors.

Policy-makers could ensure that legislation is used to remove barriers to competition in all parts of the economy.

### 9.3.6. Political Support for New Ideas<sup>26</sup>

In a number of EU countries, politicians have taken a lead in supporting new technologies. This has helped to reassure citizens about the safety and value of new products and services derived from new technologies. Yet, this is not the case in all EU countries or for all modern technologies.

Governments could:

- **Focus on the benefits and the risks of new technologies:** There is a tendency for politicians (and officials) to consider that new technologies are either entirely benign or completely dangerous. Neither view is correct; citizens need to be given the opportunity to make informed choices.

Politicians could help to ensure that consumers have a balanced view of the benefits and the risks of new technologies.

- **Emphasise the importance of innovation for meeting the economic and the social objectives of citizens.** This is one of the central objectives of economic policy in many countries.

Politicians could also help citizens to understand that innovation leads to new products and services that meet a wide range of customer needs, many of which reflect “personal goals” rather than “economic wants”.

## 9.4. NEW ORGANISATIONAL RESPONSIBILITIES<sup>27</sup>

Governments could usefully recognise that strengthening the role of the customer in the innovation process is a “cross cutting” theme that affects a wide range of different

<sup>26</sup> See: Chapters 5.2.; 5.3; 6.2.; 7.2.; and 8.2

<sup>27</sup> See: Chapters 8.1; and 8.4.

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departments and agencies. Responsibility for delivery of policy could, therefore, usefully be shared across government departments.

To limit the potential problems this poses, there could be two further organisational reforms:

- **Shared responsibility:** Overall responsibility for achieving these new goals could be shared across government but the Enterprise (or equivalent) Department could take the lead in promoting and developing policy. This is similar to the model used to ‘drive’ other cross-cutting policies such as environmental protection.
- **Central oversight:** The Enterprise Department (or equivalent) could be given powers to ensure that these new goals inform the development of key policies controlled by other departments and agencies.

This could involve the creation of a unit within the Enterprise Department responsible for developing the overall customer-related goals of Enterprise Policy, for educating other government departments, and for reviewing new policies.

This group could also conduct research into factors determining take-up and customer-related obstacles in specific sectors.

## 10. CONCLUSIONS

Innovation is the principal long-term driver of economic growth. It flourishes when societies create the conditions in which managers and entrepreneurs are encouraged to take risks and hence create new sources of wealth and work<sup>28</sup>.

Customers are of critical importance within this process (“the innovation chain”) because they are an important driver of innovation; a major influence in the innovation process within companies; and the single most important factor determining whether a product or service is accepted in the market.

Our survey of companies and our case studies show that changes in customer needs are the most important driver of new market opportunities, which is, in turn, a principal driver of innovation.

New standards and norms, which help customers to make informed choices and reduce uncertainties about quality and safety, also play an important role in the development of new markets.

Moreover, customers are heavily involved in the next stage of the “innovation chain” - the process of developing and launching new products within companies. Our research shows that significant numbers of companies involve customers in the innovation process, especially in areas such as the evaluation and refinement of new ideas; the provision of new ideas; testing prototypes; and in the detailed design of new products and services. This reinforces evidence from the Commission’s Community Innovation Survey, which highlights the importance of customers as a source of new ideas.

But it is in the market acceptance phase of the “innovation chain” that the role of customers is most pronounced: customers are the single most important factor in determining whether the market will accept a new product or service. Although “take-up” is strongly influenced by product and company-specific factors (such as awareness, value, and satisfaction), wider structural and attitudinal pre-conditions are also important. These include factors such as attitudes to science, technology and risk-taking, skills, and ownership of complementary assets.

However, our research into customer-related obstacles to innovation reveals that companies face a number of important customer-related obstacles:

- Customer uncertainties about the safety and the quality of new products and services;
- Low awareness by customers of new products;
- High costs of related products or services for customers;
- Lack of customer skills to use new products and services; and
- Lack of technical standardisation

The challenge for policy-makers is, therefore, how to design programmes to overcome these obstacles and strengthen the role of customers in the innovation process.

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<sup>28</sup> See for example Landes D. *The Wealth and Poverty of Nations* (1998) and Porter M. *The Competitive Advantage of Nations* (1990)

This report provides policy-makers with:

- A better understanding of the impact of customer-related factors on the innovation process within companies;
- Examples of public policy initiatives used by other policy-makers to enhance the ability of companies to innovate in response to customer-based factors; and
- A range of public policy options for improving the ability of companies to innovate.

## APPENDIX II

**COUNTRY ASSOCIATES**

Country associates helped BDL to draw up the innovation process case studies and the national reviews of public policy.

*Exhibit C*

<b>Country</b>	<b>Associate</b>
Austria	Dr. Hannes Leo, WIFO
Benelux	Professor J. Ulijin, Eindhoven University of Technology; and Antoon van Luxembourg M&I Partners
Denmark	Frank Skov Kristensen, Danish Technology Institute
Finland	Dr. Rita Asplund, ETLA
France	Juliet Carpenter, BDL
Germany	Dr, Jakob Edler, Fraunhofer Institute
Italy	Francesco Grillo, Vision & Value
Portugal	Professor Vitor Corado Simoes, ISEG
Spain	Jokin Goyarrola, Teckniker
UK/Ireland	Richard Meads, BDL
USA	Rustam Lalkaka, Business and Technical Development Strategies

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**APPENDIX III****MEMBERS OF THE EXPERT PANEL**

The members of the multi-national Expert Panel were drawn from academia, business, business support organisations, venture capital, government, and consumer organisations:

- **Philip Gamlin** (Business), Director, Technology Group, ICI plc, UK
- **Heinrich Hofer** (Business Support Organisation), Director Technology and Innovation Policy, Federation of German Industries, Germany
- **Timo Kekkonen** (Government), Director General, Ministry of Trade and Industry, Technology Department, Finland
- **Beate Kettlitz** (Consumer Organisation), BEUC, Belgium
- **Herbert Steinwender** (Business), Secretary General, VA Technologie AG, Austria
- **William Stevens** (Venture Capital), Managing Director, Europe Unlimited, Belgium

## APPENDIX I

**COUNTRY ASSOCIATES**

Country associates helped BDL to draw up the innovation process case studies and the national reviews of public policy.

*Exhibit C*

<b>Country</b>	<b>Associate</b>
Austria	Dr. Hannes Leo, WIFO
Benelux	Professor J. Ulijin, Eindhoven University of Technology; and Antoon van Luxembourg M&I Partners
Denmark	Frank Skov Kristensen, Danish Technology Institute
Finland	Dr. Rita Asplund, ETLA
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Germany	Dr, Jakob Edler, Fraunhofer Institute
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- **Herbert Steinwender** (Business), Secretary General, VA Technologie AG, Austria
- **William Stevens** (Venture Capital), Managing Director, Europe Unlimited, Belgium

## APPENDIX III

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**APPENDIX IV****METHODOLOGY**

Work was carried out in three distinct stages:

- In **Stage One** of the project, we carried out a literature search, based on a wide review of potential sources. This enabled us to develop preliminary hypotheses.
- Extensive fieldwork was carried out in **Stage Two**, to provide a detailed understanding of the role of customers in the innovation process and to identify existing public policy trends and initiatives. Companies were the primary focus of the fieldwork because their decisions ultimately determine the level of innovatory activity in a market economy.

Work included:

- Surveys of 1,000 Companies in the EU and the USA, and 125 Representative Organisations in the EU and the USA.
  - Ten Case Studies to illustrate the impact of customers on the development of new markets, and 15 case studies to examine the role of customers in the internal innovation process within companies.
  - Twelve Country Reviews of public policy initiatives that strengthen the role of customers in the innovation process. These were produced for 10 Member States, the EU, and the USA. They follow a common format and review current policy practices and trends in order to identify examples of those that enhance the power of customers to drive innovation.
- In **Stage Three** of the project, findings were analysed, conclusions and public policy options were developed, and the final report was produced.

**APPENDIX V****THE SURVEYS****1. THE SURVEY OF COMPANIES****1.1. Purpose**

The purpose of the survey of companies is to provide quantitative information about a range of customer-related issues and innovation:

- To review the main customer trends that create new market opportunities;
- To review the importance of standards and norms in helping to create new market opportunities in response to customer based factors;
- To review the role of customers within the innovation process of companies;
- To analyse the tools used to increase awareness of the benefits of new products and services;
- To review the factors that determine the “take-up” of innovatory products and services by customers; and
- To review current policy practices designed to strengthen the power of customers to drive innovation.

Business Decisions Limited designed the questionnaire, managed the survey, and analysed the results. Abacus Research, a specialist market research company, carried out the interviews and the data processing.

**1.2. Questionnaire**

We developed a standard questionnaire that could be used for all organisations. It was designed for use in a telephone interview lasting approximately 15 minutes. The questionnaire was based on “closed” questions with pre-coded answers.

The questionnaire was designed for interviews with the senior manager responsible for Marketing Strategy (usually the Marketing Director or the Managing Director in smaller companies).

It was checked for length and feasibility with our Market Research advisers. We also discussed it with our Multinational Panel of Experts and with DG Enterprise.

We carried out a small-scale pilot survey in advance of the main fieldwork in order to fine-tune the questionnaire. The pilot was successful. It showed that the questionnaire took, on average, around 15 minutes to complete and that respondents were able to answer the questions without difficulty. Some minor changes were made to the questionnaire following feedback from the pilot.

Attachment 1 contains the questionnaire.

### 1.3. Sample

The survey was carried out in the EU and the USA with a sample of 1,000 organisations (completed questionnaires). The sample was drawn from a leading supplier of company directories (Dunn and Bradstreet).

The survey was focused on organisations with more than 20 employees across the private sector (manufacturing and services). This is consistent with the CEC Innovation Surveys.

The actual sample is shown in Exhibit A. It broadly matches the proposed sample structure agreed with the Commission and the Advisory Group at the end of Stage One.

#### *Exhibit A*

Country	Total Sample	Manufacturing	Services	SMEs (20-499 employees)	Large Companies (500+ employees)
<b>Germany/Austria</b>	<b>193</b>	94	99	94	99
<b>France</b>	<b>124</b>	62	62	70	54
<b>UK/Ireland</b>	<b>132</b>	61	71	72	60
<b>Italy/Greece</b>	<b>126</b>	75	51	68	58
<b>Spain/Portugal</b>	<b>100</b>	47	53	61	39
<b>Benelux</b>	<b>77</b>	41	36	40	37
<b>Nordic</b>	<b>75</b>	37	38	39	36
<b>Sub-total EU</b>	<b>827</b>	<b>417</b>	<b>410</b>	<b>444</b>	<b>383</b>
<b>USA</b>	<b>174</b>	98	76	107	67
<b>TOTAL</b>	<b>1001</b>	<b>515</b>	<b>486</b>	<b>551</b>	<b>450</b>

The size of the samples is sufficiently large to give us a reasonably high degree of confidence in the results of most sub-segments (manufacturing/services; and SMEs/large companies) and the major countries.

### 1.4. Fieldwork

The main fieldwork was carried out in March and April 2002. Abacus Research, a specialist market research company was responsible for the interviews. A native speaker conducted them in the mother tongue of the respondent. Fieldwork was completed in accordance with the timetable.

## **1.5. Analysis**

Abacus Research carried out the data processing and Business Decisions Limited carried out the analysis and interpretation.

## **2. THE SURVEY OF REPRESENTATIVE ORGANISATIONS**

### **2.1. Purpose**

The purpose of the survey was to obtain structured feedback from a sample of ‘Representative Organisations’ in Europe and the USA about current policy practices designed to strengthen the power of customers to drive innovation. (By ‘Representative Organisation’, we mean organisations that represent the interests of companies.)

The survey explored in a structured fashion with a sample of Representative Organisations in Europe and the USA three areas where governments pursue relevant initiatives:

- Building positive attitudes amongst citizens towards change, risk-taking, and new technologies;
- Strengthening demand for new goods and services; and
- Strengthening the power of customers to demand high quality, and leading-edge products and services.

### **2.2. Questionnaire**

Business Decisions Limited designed the questionnaire, managed the survey, and analysed the results. Abacus Research carried out the interviews and the data processing.

We developed a standard questionnaire that could be used for all organisations. It was designed for use in a telephone interview lasting approximately 10 minutes. The questionnaire was based on “closed” questions with pre-coded answers. Originally, we envisaged that this survey would be conducted using a postal survey, but after further consideration and discussion we agreed that we were likely to get better response rates if we were to use telephone interviews (via our market research agency) instead. This revised approach was discussed and agreed with DG Enterprise.

The questionnaire was checked for length and feasibility with our Market Research advisers, and discussed with our Multinational Panel of Experts. We carried out a small-scale pilot in advance of the main fieldwork in order to fine-tune the questionnaire. The pilot was successful. Respondents were able to answer the questions without difficulty in around 10 minutes. We made some minor changes to clarify some points following the pilot exercise.

Attachment 2 contains the questionnaire.

### 2.3. Sample

The survey was carried out in the EU and the USA with a sample of 131 representative organisations (completed questionnaires). The sample was drawn from a leading directory of Representative Organisations.

The sample includes a spread of organisations of different types across the EU. It includes both “Horizontal” and “Sectoral” organisations (Manufacturing and Services). It also includes both EU-level representative organisations and European national level organisations. The latter are spread across 13 countries of the EU.

The US sample also includes both “Horizontal” and “Sectoral” organisations (Manufacturing and Services).

The precise split of the sample is shown in Exhibit B.

#### *Exhibit B*

<b>Area</b>	<b>Type</b>	<b>Actual Sample</b>
<b>EU level</b>	Horizontal	7
	Sectoral - Manufacturing	12
	Sectoral - Services	8
	<b>SUB-TOTAL</b>	<b>27</b>
<b>Europe National Level</b>	Horizontal	23
	Sectoral - Manufacturing	28
	Sectoral - Services	25
	<b>SUB-TOTAL</b>	<b>76</b>
<b>USA</b>	Horizontal	11
	Sectoral - Manufacturing	9
	Sectoral - Services	8
	<b>SUB-TOTAL</b>	<b>28</b>
<b>TOTAL</b>		<b>131</b>

The actual sample matches the proposed sample structure agreed with the Commission and the Expert Panel at the end of Stage One.

Following analysis of the results, however, we decided that the size of the sample was sufficient only to allow us to report on the overall European results with confidence. We discarded the US results.

### 2.4. Fieldwork

The main fieldwork was carried out in April and May 2002. A native speaker from Abacus Research conducted them in the mother tongue of the respondent. Fieldwork was completed in accordance with the timetable.

## **2.5. Analysis**

Abacus Research carried out the data processing and Business Decisions Limited carried out the analysis and interpretation.

## Attachment 1

TELEPHONE INTERVIEW QUESTIONNAIRE  
COMPANIES**“The Power of Customers to Drive Innovation”****Section A: INTRODUCTION**

Good morning/afternoon. My name is ABC, from XYZ. I am carrying out a survey on innovation in companies, on behalf of The European Commission. My questions will only take about X minutes and I wondered if you could help me.

**A1. Can I check that you are the person responsible for Marketing Strategy in this company?**  
(Tick one box only)

Yes CONTINUE       No ASK WHO TO SPEAK TO AND CLOSE

Please be assured that anything you say will be treated in confidence and will not be identified with you personally or your company.

**Section B: COMPANY DETAILS**

Firstly, I'd like to ask you a few background questions about your organisation.

**B 1. How many employees are there in your company?** (Tick 1 box only.)

1-19 CLOSE    20-49    50-99    100-249    250-499    500 or more

**B 3. What is the main sector that you operate in?** (Please tick 1 box only.)

Manufacturing       Services       Other

**B 4. Which of the following statements best describes the nature of competition for your products and services?** (Tick 1 box only)

- There is little competition  
 Competitors are mainly local companies  
 Companies are mainly national companies  
 Competitors are a mix of national and international companies  
 Competitors are mainly international companies

**B 5. Who are the principal customers for your products and services? (Please ignore wholesalers, retailers or other intermediaries)** (Tick 1 box only) IF MORE THAN ONE GROUP SERVED, PLEASE ASK THEM TO INDICATE THE CUSTOMER GROUP THAT ACCOUNTS FOR THE GREATER PART OF THEIR TURNOVER

Private (end) consumers    Businesses    Governments

**Section C: INNOVATION**

I would like to ask you some general questions about innovation in your company. By this we mean the development and launch of new products, services or processes.

**C1. What percentage of your turnover do you spend on research and development each year?** (Tick 1 box only)

- Less than 5%    5-9%    10-14%    15% or more    Don't Know

**C2. Roughly what percentage of your turnover comes from “new” products introduced in the last three years?** (Tick 1 box only)

- Less than 10%    10-19%    20-29%    30% or more

**C3. Which of the following is the most important in creating new opportunities for your company?** (Tick one box only)

- Changes in technology  
 Changes in customer needs  
 Changes in government regulation  
 Opening up of new geographic markets  
 Other

**Section D: NEW MARKET OPPORTUNITIES BASED ON CUSTOMER NEEDS**

I would now like to ask you some questions about the emergence of new market opportunities based on changing customer needs.

**AT B6, IF ANSWERED “PRIVATE END CONSUMER” THEN ASK D1. OTHERS GO TO D2**

**D 1. How important are the following trends in influencing the development of new opportunities in your market? After I have read out each trend, please tell me whether it is important or not important in your market.**

IF RESPONDENT IDENTIFIES FACTOR AS IMPORTANT, PLEASE ASK WHETHER IT WAS IMPORTANT OR VERY IMPORTANT

Consumer Market Trends

	<i>Not Important</i>	<i>Important</i>	<i>Very Important</i>
Demographic change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes in affluence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes in household size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes in education and skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increased mobility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increased pressure on time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Growing concern with wider quality of life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Growing interest in ethical and environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**GO TO SECTION E**

**AT B6, IF ANSWERED “OTHER BUSINESSES” OR “GOVERNMENTS” THEN ASK D2**

**D 2. How important are the following trends in influencing the development of new opportunities in your market? After I have read out each trend, please tell me whether it is important or not important in your market.**

IF RESPONDENT IDENTIFIES FACTOR AS IMPORTANT, PLEASE ASK WHETHER IT WAS IMPORTANT OR VERY IMPORTANT

<u>Business to Business Market Trends</u>	<i>Not Important</i>	<i>Important</i>	<i>Very Important</i>
Globalisation	q	q	q
De-regulation and Liberalisation of markets	q	q	q
The Single Market in Europe	q	q	q
Increasing technological convergence	q	q	q
Increasing focus on core competencies	q	q	q
Regulatory pressures	q	q	q
Rapid development of new technologies	q	q	q
Volatile trading environments	q	q	q

**GO TO SECTION E**

**Section E: ROLE OF THE CUSTOMER IN THE INNOVATION PROCESS**

I'd now like to ask you some questions about the role of the customer in the innovation process.

**E1. How do you involve customers in the new product development process? Do you do any of the following?**

	<u>Yes</u>	<u>No</u>
Use customers as a source of new ideas	q	q
Involve customers in the process of evaluating and refining your ideas	q	q
Use market research to get feedback on initial ideas	q	q
Involve customers in the design of new products and services	q	q
Use market research to get feedback on product features, packaging, & pricing	q	q
Undertake market research to evaluate marketing campaigns to launch new products	q	q
Test market new products and services with customers	q	q

**Section F: CUSTOMER AWARENESS OF NEW PRODUCTS AND SERVICES**

I'd now like to ask you some questions about how customers find out about new products and services and their benefits in your market.

**F1. Thinking about how customers find out about new products and services in your market, how important are each of the following?**

IF RESPONDENT IDENTIFIES TOOL AS IMPORTANT, PLEASE ASK WHETHER IT WAS IMPORTANT OR VERY IMPORTANT

<u>Tool</u>	<i>Not Important</i>	<i>Important</i>	<i>Very Important</i>
Advertising	q	q	q
Promotions	q	q	q
Sponsorship	q	q	q
The sales force	q	q	q
Telephone selling	q	q	q
Direct marketing	q	q	q
Exhibitions or trade fairs	q	q	q
Technical support activities	q	q	q

**F2. And thinking about the other routes through which customers may find out about new products and services in your market, how important are each of the following?**

IF RESPONDENT IDENTIFIES TOOL AS IMPORTANT, PLEASE ASK WHETHER IT WAS IMPORTANT OR VERY IMPORTANT

<u>Routes</u>	<i>Not Important</i>	<i>Important</i>	<i>Very Important</i>
Independent consumer reports or evaluations	q	q	q
Editorial or news stories	q	q	q
The Internet	q	q	q
Family or friends	q	q	q
Colleagues at work	q	q	q
Professional advisors	q	q	q
Retailers or distributors	q	q	q

**Section G: CUSTOMER TAKE-UP OF NEW PRODUCTS AND SERVICES**

I am now going to ask you some questions about customer acceptance of new products and services in your market.

**AT B6, IF ANSWERED “PRIVATE END CONSUMER” THEN ASK G1. OTHERS GO TO G2**

**G 1. How important are each of the following factors in influencing customers decisions to buy new products or services in your market? After I have read out each factor, please tell me whether it is important or not important in your market.**

IF RESPONDENT IDENTIFIES FACTOR AS IMPORTANT, PLEASE ASK WHETHER IT WAS IMPORTANT OR VERY IMPORTANT

<u>Factor</u>	<i>Not Important</i>	<i>Important</i>	<i>Very Important</i>
Awareness of the new product & its benefits	q	q	q
Quality and price compared to alternatives	q	q	q
Willingness of customers to try new things	q	q	q
Attitudes to new technologies	q	q	q
Perceived complexity of the new product	q	q	q
Extent to which customers have the necessary skills to use it	q	q	q
Extent to which customer owns other products needed to use it	q	q	q
Customer satisfaction amongst those who have tried it	q	q	q

**GO TO SECTION H**

**AT B6, IF ANSWERED “OTHER BUSINESSES” OR “GOVERNMENTS” THEN ASK G2**

**G 2. How important are each of the following factors in influencing customers decisions to buy new products or services in your market? After I have read out each factor, please tell me whether it is important or not important in your market.**

IF RESPONDENT IDENTIFIES FACTOR AS IMPORTANT, PLEASE ASK WHETHER IT WAS IMPORTANT OR VERY IMPORTANT

<u>Factor</u>	<i>Not Important</i>	<i>Important</i>	<i>Very Important</i>
Awareness of the new product & its benefits	q	q	q
Quality and price compared to alternatives	q	q	q
Perceived risk of adopting the new product	q	q	q
Attitudes to new technologies	q	q	q
Compatibility with existing equipment or way of doing things	q	q	q
Competitive pressure on customers to adopt innovative products	q	q	q
Availability of funds to purchase it	q	q	q
Customer satisfaction amongst those who have tried it	q	q	q

## Section H: ROLE OF STANDARDS AND NORMS IN CREATING NEW OPPORTUNITIES

I would now like to ask you some questions about the role of standards and norms in creating new market opportunities. By this we mean mandatory or voluntary technical specifications, process specifications, safety standards and environmental standards developed by governments, non-governmental organisations, or the private sector.

**HI. Have standards and norms helped to create new market opportunities for your company in any of the following ways?** (Tick 1 box only in each row)

	<u>Yes</u>	<u>No</u>
Created new trans-national customer segments	q	q
Stimulated demand for new products or services	q	q
Reduced uncertainties for customers	q	q
Made it easier for customers to change suppliers	q	q
Helped customers to make informed choices	q	q

## Section I: ROLE OF GOVERNMENT POLICY

I'd now like to ask you some questions about innovation and the role of public policy.

Most companies recognise the important role that customers play in the innovation process. The following question explores the role that governments can play in strengthening the role of the customer in the innovation process.

**II. How important is it that government takes action in the following areas? After I have read out each area, please tell me whether it is important or not important that government should take action.**

IF RESPONDENT IDENTIFIES AREA AS IMPORTANT, PLEASE ASK WHETHER IT IS IMPORTANT OR VERY IMPORTANT

It is important that government takes action to:

	<i>Not Important</i>	<i>Important</i>	<i>Very Important</i>
Build positive attitudes amongst citizens to new technologies	q	q	q
Encourage consumers to try new innovative products	q	q	q
Strengthen demand for innovative new products	q	q	q
Strengthen the ability of customers to demand high quality products	q	q	q
Introduce standards and norms to encourage adoption of new products	q	q	q

THANK RESPONDENT AND CLOSE

**Attachment 2****TELEPHONE INTERVIEW QUESTIONNAIRE  
REPRESENTATIVE ORGANISATIONS****“The Power of Customers to Drive Innovation”****Section A: INTRODUCTION**

Good morning/afternoon. My name is ABC, from XYZ. I am carrying out a survey on Innovation and Public Policy, on behalf of The European Commission. My questions will only take about X minutes and I wondered if you could help me.

**A1. Can I check that you are the person responsible for “Innovation and Public Policy” in your organisation?** (Tick one box only)

Yes CONTINUE                       No ASK WHO TO SPEAK TO AND CLOSE

Please be assured that anything you say will be treated in confidence and will not be identified with you personally or your organisation.

**Section B: ROLE OF GOVERNMENT POLICY**

I'd like to start by asking you some questions about innovation and the role of public policy.

Most organisations recognise the important role that customers play in the innovation process. The following questions explore the role that governments can play in strengthening the impact of customer-related factors on innovation.

**B1. Thinking about the ability of companies to innovate, how important is it that government takes action in the following areas? After I have read out each area, please tell me whether it is important or not important that government should take action.**

IF RESPONDENT IDENTIFIES AREA AS IMPORTANT, PLEASE ASK WHETHER IT IS IMPORTANT OR VERY IMPORTANT

It is important that government takes action to:

	<i>Not Important</i>	<i>Important</i>	<i>Very Important</i>
Build positive attitudes amongst citizens to new technologies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Encourage consumers to try innovative products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strengthen demand for innovative new products & services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strengthen the power of customers to demand high quality products & services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Introduce standards and norms to encourage adoption of new products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**B2. Thinking about government activities in recent years, how successful do you think governments have been in the following areas? After I have read out each area, please tell me whether you think governments have been successful or unsuccessful.**

IF RESPONDENT IDENTIFIES GOVERNMENTS AS SUCCESSFUL, PLEASE ASK WHETHER THEY HAVE BEEN “REASONABLY SUCCESSFUL” OR “VERY SUCCESSFUL”

	<i>Unsuccessful</i>	<i>Reasonably Successful</i>	<i>Very Successful</i>
Building positive attitudes amongst citizens to new technologies	q	q	q
Encourage consumers to try innovative products			
Strengthening demand for new products & services	q	q	q
Strengthening the power of customers to demand high quality products & services	q	q	q
Introduce standards and norms to encourage adoption of new products			

### Section C: FUTURE INITIATIVES & REFORMS

Now I would now like to ask you some questions about possible new initiatives and reforms to government innovation policy.

**C1. I am going to read out a list of possible policy initiatives that some organisations have identified. In your opinion, which initiatives would, if implemented, have the greatest positive impact on the attitudes of citizens towards risk-taking, change and new technology?**

After I have read out each initiative, could you tell me how great an impact you think it could have, where 5 is a very high impact and 1 is a low impact. (Put a score in each box)

#### Score

New programmes to increase the number of science & technology graduates	q
New educational initiatives to promote risk-taking amongst young people	q
More campaigns to promote the benefits of risk-taking amongst opinion-formers	q
Greater political support for new technologies	q

**C2. In your opinion, which of the following initiatives would, if implemented, have the greatest positive impact on demand for innovative new products and services?**

Again, after I have read out each initiative, could you tell me how great an impact you think it could have, where 5 is a very high impact and 1 is a low impact. (Put a score in each box)

#### Score

Greater public procurement of innovative products & services	q
Additional regulations to reduce customer uncertainties about new products & services	q
Creation of new technical standards	q
Liberalisation of key sectors, e.g. in network-based industries	q
Additional environmental protection standards	q

**C3. And finally, which of the following initiatives would, if implemented, have the greatest positive impact on the power of customers to demand higher quality products & services?**

**Again, after I have read out each initiative, could you tell me how great an impact you think it could have, where 5 is a very high impact and 1 is a low impact. (Put a score in each box)**

**Score**

Stronger competition legislation to eliminate anti-competitive practices	q
Greater market liberalisation to strengthen competition	q
Stronger consumer protection legislation	q
Stronger product liability rules	q

**Section D: ROLE OF STANDARDS AND NORMS IN CREATING NEW OPPORTUNITIES**

Lastly, I would now like to ask you some questions about the role of standards and norms in creating new market opportunities. By standards and norms we mean mandatory or voluntary technical specifications, process specifications, safety standards and environmental standards developed by governments, non-governmental organisations (such as the International Standards Organisation), or the private sector.

**D1. In your opinion, have standards and norms helped to create new market opportunities for companies in your country in any of the following ways? (Tick 1 box only in each row)**

	<b><u>Yes</u></b>	<b><u>No</u></b>
Created new trans-national customer segments	q	q
Stimulated demand for new products or services	q	q
Reduced uncertainties for customers	q	q
Made it easier for customers to change suppliers	q	q
Helped customers to make informed choices	q	q

THANK RESPONDENT FOR THEIR HELP AND CLOSE

## APPENDIX IV

**MARKET OPPORTUNITIES CASE STUDIES: AN OVERVIEW**

*This section is based on 10 case studies, from the European Union and the USA. Each case provides an insight into how changes in customer needs create market opportunities. The report also examines drivers of customer behaviour, the influence of non-customer related factors on market evolution, and the process of market development.*

*The section is based on qualitative evidence. It should be seen as a complement to the findings from other parts of the research, especially the survey of companies.*

**1. METHODOLOGY**

The case studies illustrate the emergence of new markets, as a result of changes in customer needs. Business Decisions Limited produced each of them, using a range of sources.

Each case study follows a standard format:

- **Background:** this provides a brief description of the background to the new opportunity.
- **'The Emergence of a New Market':** this provides a brief description of the new market opportunity. In particular, it covers: the previous situation (e.g. how customer needs were previously satisfied); the growth of the new market (definition, characteristics, size etc); and examples of major suppliers.
- **'Drivers of Market Growth':** This identifies and describes the main customer based factors that have driven the growth of the new market. It also (briefly) identifies any other major factors that have played an important role.
- **Conclusions**

The case studies cover EU countries and the USA; a range of manufacturing and service sectors; and Consumer and Business-to-Business markets.

*Exhibit D*

<b>Sector</b>	<b>Market</b>	<b>Country</b>
Consumer	Grocery Retailing (The Economy Segment)	UK
Consumer	Retirement Homes and Services - (Ageing population)	USA
Consumer	Health Foods – (Lifestyle products)	EU wide
Consumer	Home, Leisure, and Entertainment Software (Affluence and leisure patterns)	Germany
Consumer	Forecourt Retailing (Time pressures, mobility, suburbanisation)	EU wide
B2B	Road Logistics (Core Competencies and Outsourcing of Business Services)	EU wide
B2B	Plant Building – Steel (Products and new services as solutions to problems)	EU wide
B2B	Specialist Biotechnology (Alliances and Networks)	USA
B2B	Car Parts (“System” suppliers)	EU wide
B2B	Environmental Products and Services (Solutions to regulatory problems)	EU-wide/Germany

## 2. CONSUMER MARKETS

### 2.1. Customer-related Factors

Our case studies provide evidence of the impact of a wide range of different drivers of customer needs, wants and behaviour on opportunities for growth in business-to-consumer markets.

*Exhibit E*

<b>Customer Factors</b>	<b>Forecourt Retailing</b>	<b>Home, Leisure, and Entertainment Software</b>	<b>Health Foods</b>	<b>Retirement Communities</b>	<b>On-line Banking</b>
Increased time pressures	*				*
Greater mobility	*				
Changes in occupational patterns	*	*		*	
Rising affluence	*	*	*		*
Shifts in social attitudes	*	*		*	
PC ownership		*			*
Computer literacy		*			*
English language competencies		*			
Changes in leisure patterns		*			
Internet access		*			*
Health consciousness			*		
Demographic change			*	*	
Environmental awareness			*		
Changes in family structures				*	

Our cases reveal the presence of drivers of behaviour that are specific to a very limited number of consumer markets. A good example is the growth in English language competencies as a driver of increased demand for home, entertainment, and leisure software in Germany.

However, our cases also provide information about a number of drivers of changes in consumer behaviours, wants, and needs that have an impact on a wide range of different consumer markets. This information helps to illustrate in more detail the nature of changes in the drivers of behaviour. It complements the quantitative information obtained through the survey of companies.

In the opinion of companies in the EU and USA, the four most important customer-based drivers of change in consumer markets are:

- Rising affluence;
- Growing concerns with the wider quality of life, including ethical, and environmental issues;
- Increasing pressure on time;
- Demographic changes;

Evidence from our case studies provides an insight into each of these drivers. Specifically:

- **Rising affluence** – steady growth in real incomes fuelled by rising productivity and output plus falling real costs of ‘necessities’ (especially food) has meant that discretionary income has grown dramatically for most EU and US citizens since the Second World War. Household spending patterns have changed as a result. More income is now spent on products and services to satisfy non-functional needs, such as leisure, or to satisfy emotional needs, such as the desire for status or ‘self-actualisation’. Our cases show evidence of rising affluence enabling citizens to “trade case for time” (*Forecourt Retailing*); to improve health and well-being (*Health Foods*); to enjoy new leisure experiences (*Entertainment Software*); and to enjoy leisure and pleasure in retirement (*Retirement Communities*);
- **Growing concerns with the wider quality of life, including ethical, and environmental issues** – throughout the EU and USA, new markets are emerging because a substantial number of citizens are no longer concerned primarily with ensuring access to food, shelter, and employment. An increasing number of consumers have become concerned with the nature of the products and services they consume, and how they are produced. In part this is the result of increased affluence but it also reflects a change in social attitudes brought about by factors such as increased access to education. Our *Health Foods* case, for example, shows how there has been a growing awareness of the possible side effects of orthodox medicines and increasing knowledge about the potential benefits of natural healthcare. There has also been a growth in the level of interest in “self-medication”. This has led to growth in demand for homeopathic and herbal remedies;
- **Increasing pressure on time** – the way in which this can create new market opportunities is illustrated by our *Forecourt Retailing* case. Throughout most of the EU there has been a major increase in the number of married women in the labour force. In general, women continue to have a greater responsibility than men for home care and child rearing, despite this shift in participation in economic activity. As a result, many working women face major time pressures. To resolve this, they look for ways to multi-task and to reduce shopping and meal preparation activities. Mini-supermarkets and convenience stores located on service stations provide working women with a way of carrying out “top up” shopping in a convenient place and whilst carrying out other tasks;

- **Demographic changes** – our case studies show how changes in age or occupational demographics affect the development of market opportunities. The *Leisure and Entertainment Software* case, for example, provides an illustration of one of the effects of changes in the pattern of work in recent years. Many more people work in service industries, many work longer hours, many have more flexible working patterns, and many now “telecommute”. This has been a major driver of purchases of Personal Computers for the home. It is estimated that nearly three-quarters of PCs in Germany are used for some form of home working. However, once the PC has been bought for the home, children and other adults are encouraged to use it for other purposes. Parents are increasingly keen to support the education process through the purchase of educational software. And children are attracted to computer games.

New market opportunities are also created because of the ageing of the population in the USA and EU. The *Retirement Communities* case, for example, shows how trends in population demographics, disposable income, and social attitudes combine to create a new market segment.

## **2.2. Other Factors**

Changes in the drivers of customer behaviours, wants, and needs are not the only reason why new markets emerge. Other factors are also important. Our cases provide an insight into these other (non-customer) drivers of change.

*Exhibit F*

<b>Non-Customer Factors</b>	<b>Forecourt Retailing</b>	<b>Home, Leisure, and Entertainment Software</b>	<b>Health Foods</b>	<b>Retirement Communities</b>	<b>On-line Banking</b>
Changes in technology available to suppliers	*	*			*
	<i>(retailing, car, and logistics technologies)</i>	<i>(ICT)</i>			<i>(ICT)</i>
Regulatory change affecting suppliers	*				*
Supplier innovation	*	*	*	*	*
	<i>(retail formats, customer segmentation)</i>	<i>(products)</i>	<i>(products)</i>	<i>(services, real estate formats)</i>	<i>(products and services)</i>
Supplier pricing and promotion strategies		*	*		
		<i>(pricing, communication)</i>	<i>(pricing, communication, retail availability)</i>		
Availability of complementary assets/products		*			*
		<i>(PCs, Internet)</i>			<i>(PCs, Internet)</i>
Globalisation		*			
Availability of capital				*	

### 2.3. The Market Development Process

Our case studies show how changes in the drivers customer behaviours, wants and needs contribute to the growth of different types of new market opportunities. These include:

- **Transformation of the scale and nature of existing markets** – our *Forecourt Retailing* case study, for example, shows how changes in the needs of existing customers and the growth of new customers with new needs transformed a traditional retail distribution channel. Service stations, garages and other retailers of refined petroleum products have always sold some non-fuel products. Traditionally most were associated with vehicle maintenance and repair, and were sold to male car owners. Today, however, the Forecourt Retailing sector focuses on drivers of all types, especially working women and “people on the move”, such as leisure and business travellers. Through a range of purpose-built retail formats, modern service stations provide their target customers with a convenient place to purchase consumables for informal meal occasions (‘snacks’) and to carry out ‘top-up’ shopping of groceries and

similar products. Many stores also offer complementary services, such as banking, parcel collection, and dry cleaning;

- **Transformation of the scale of existing markets** – the market for *Health Foods* across the EU has grown because of the success of suppliers in meeting the needs of large numbers of customers for food products that are more ‘natural’ and environmentally benign than processed foodstuffs. The growth in demand reflects changes in the drivers of customer needs. As a result the market has changed from one characterised as meeting the needs of an “alternative lifestyle” to one meeting the needs of the mainstream European consumer; and,
- **Emergence of new markets** – the growth of the *Home, Leisure and Entertainment Software* market in Germany is an example of the emergence of a market to meet new customer wants. It is a new way of satisfying consumer needs for leisure activities and entertainment.

In response to changes in customer needs, suppliers evolve a wide range of different competitive strategies. Our case studies provide an insight into how suppliers exploit these new market opportunities. Activities include:

- **Innovation** – our cases provide examples of different types of innovation, including retail formats (*Forecourt Retailing*), products (*Health Foods, Software*), services (*Retirement Communities*), and real estate formats (*Retirement Communities*). To create these new offers, suppliers exploit changes in related markets and technologies. They also invest in the in-house development of new ideas;
- **Market segmentation** – in some markets, customers are grouped by suppliers on the basis of shared behaviours, values, wants, or needs. This process of segmentation enables suppliers to design innovative products, services, or formats to meet the requirements of particular groups of customers. It facilitates the process of innovation and helps create competitive advantage. Our case studies include examples of segmentation by “purchase occasion” (*Forecourt Retailing*) and by age (*Retirement Communities*);
- **Pricing and promotion strategies** – these are designed to build awareness, consumption, and repeat purchase. In new markets (such as the *Home, Leisure and Entertainment* sector), price reductions may be used to stimulate consumer interest and build demand.

### 3. BUSINESS-TO-BUSINESS MARKETS

#### 3.1. CUSTOMER-RELATED FACTORS

The impact of a wide range of different drivers of customer needs, wants and behaviour on opportunities for growth in different business-to-business markets is illustrated by our four completed case studies.

##### *Exhibit G*

Customer Factors	Road Logistics	Plant Building	Car Parts	Specialist Bio-technology	Eco-industry
Changes in managerial attitudes (sources of competitive advantage, core competencies, outsourcing etc.)	*	*	*	*	*
Competitive pressures in user industries	*		*	*	*
Globalisation	*	*	*	*	
Investor pressures	*				
Technology (used by customers)		*	*	*	
Changes in capital markets		*			
De-regulation and liberalisation			*		*
Legislative changes in customer markets			*		

Some of these drivers of customer behaviour are specific to a very limited number of business-to-business markets. The impact of shifts in capital markets and its impact on the Plant Building sector is a good example. Our *Plant Building* case study reveals how liberalisation and globalisation of capital markets has created opportunities for financial entrepreneurs to invest in steel production. Wider and deeper pools of capital, and a spread of investors with differing appetites for risk, mean that proposals to build or acquire steel plants can be funded, if they can achieve an acceptable,

market-based return. Value-added ideas from Steel Plant Builders provide these new owners of steel plants with ways to enhance the overall return on investment and to avoid involvement in plant development and maintenance Plant Builders can, for example, provide investors with a complete project evaluation, including labour, environmental, product demand, and legislative issues.

However, our cases also provide information about a number of drivers of changes in customer behaviours, wants, and needs that have an impact on a wide range of different business-to-business markets. This information helps to illustrate in more detail the nature of changes in the drivers of behaviour. It complements the quantitative information obtained through the survey of companies.

In the opinion of companies in the EU and USA, the four most important customer-based drivers of change in business-to-business markets are:

- Rapid development of new technologies (used by customers);
- Increased focus by customers on core competencies;
- De-regulation and liberalisation; and,
- Globalisation

Evidence from our case studies provides an insight into each of these drivers. Specifically:

- **Rapid development of new technologies (used by customers)** – our *Plant Building* case provides an excellent example of how changes in the production technologies used by customers in manufacturing industries leads to changes in customer needs. The case reveals that there has been a rapid increase in the complexity of steel production technology. The need for higher process variability has been met by significantly greater automation supported by complex IT technologies, such as expert systems. In turn, automation has been integrated in PPC systems and combined with high tech engineering tools such as computer-based simulation. As a result of these changes, it is difficult and highly expensive for customers to retain experts in all knowledge areas. External suppliers of integrated systems now know more about process technologies than their customers;
- **Increased focus by customers on core competencies** – attitudes and beliefs of managers and investors about the most efficient way to organise production and the basis of sustainable competitive advantage change over time. In part, this is a response to new production or organisational technologies, or to shifts in patterns of demand. It can also be the result of seeking new ways to compete as competitive intensity increases. One of the most well-known and widespread changes in managerial “belief systems” has been the shift from vertical integration to core competencies as the basis for maximising operating efficiency or generating competitive advantage. Our *Road Logistics* case shows how such attitudinal changes help contribute to the growth of new market opportunities. Increasingly, the basis of competition in many industries is moving away from “hard” factors, such as access to physical resources, scale economies or expenditure on research and development, and towards

“soft” factors, such as reputation and service. Many companies now seek to differentiate themselves on the basis of high quality and added value rather than on low costs. There has therefore been a growing demand for logistics services that can offer end customers or retailers higher levels of service such as overnight supply or guaranteed next day delivery. This provides additional sources of competitive advantage to companies and potentially a means of expanding its customer base and its revenues.

- **De-regulation and liberalisation** – our *Car Parts* case study shows how de-regulation and liberalisation of national end-user markets for motor vehicles in the EU promoted a significant increase in competitive intensity amongst EU-based car makers. In the first phase, this was the result of increased competition between EU-based companies; in later stages competitive intensity increased further as Japanese car makers were allowed to enter EU markets. This increase in competitive intensity forced all EU car makers to seek improvements in cost, quality, and innovation from suppliers of car parts;
- **Globalisation** – one of the driving forces behind the growth of the *Specialist Biotechnology* sector in the USA has been the globalisation of R&D activity by major Pharmaceutical companies. A disproportionate share of global R&D investment in pharmaceuticals has been attracted to the USA because of the quality and scale of the “Science Base”, and the scale, dynamism, and profitability of the end user market. In turn, this has fuelled demand from major Pharmaceutical companies for alliances and joint ventures with specialist biotech-based companies able to share drug discovery risks, provide new product ideas, and supply access to key platform technologies, such as genomics, high throughput screening, and bio-informatics;

### 3.2. Other Factors

Changes in the drivers of customer behaviours, wants, and needs are not the only reason why new business-to-business markets emerge. Other factors are also important. Our cases provide an insight into these other (non-customer) drivers of change.

*Exhibit H*

Non-Customer Factors	Road Logistics	Plant Building	Car Parts	Specialist Bio-technology	Eco-industry
Market liberalisation of supplier markets	*				*
Technology changes – in supplier markets and available to suppliers	*	*	*	*	*
Supplier innovation	*	*	*	*	*
Changes in capital markets		*			
Consolidation of supplier firms	*		*		
Access to key inputs for innovation (people, ideas, cash)				*	

### 3.3. The Market Development Process

Our case studies show how changes in the drivers customer behaviours, wants and needs contribute to the growth of different types of new market opportunities. These include:

- Transformation of the nature of existing markets** – our *Plant Building* case study shows how changes in customer needs can contribute to major structural shifts in a mature market. The global plant building industry meets the needs of owners of process plant and utilities for superior operational and financial performance. It does this through the provision of value-added solutions, services, and equipment. Over the last 15-20 years, there have been major changes in the structure of demand in the Steel Plant Building sector. Demand has shifted through a number of phases characterised by changes in the decision-making unit (DMU) inside customers and increases in the complexity of the offer provided by suppliers. In the first phase, suppliers sold functional products that were bought on the basis of detailed engineering specifications drawn up by plant engineers. In the final phase of development, suppliers create value-added ideas that encompass financing, equipment, and advanced services. This includes the development of financing solutions, such as counter

trade, risk sharing, and equity investment. Such solutions offer customers the opportunity to enhance overall return on capital: CEOs and financial investors make purchasing decisions. The changing shape of demand has created significant growth in specific segments of the market, especially those characterised by the provision of services and value-added solutions.

- **Emergence of new markets** – the emergence of the *Specialist Biotechnology* sector in the US is an example of a new market. Although there are a small number of vertically integrated biopharmaceutical companies, most specialist biotechnology companies are suppliers of ideas, products, processes, and services to major pharmaceutical companies. One of the most important drivers of the development of this sector has been a change in customer needs. Maturity of traditional drug discovery technologies, the loss of patent protection for major products, and the opportunities for innovative healthcare in the USA have forced most major pharmaceutical companies to evaluate how they carry out drug discovery and development. One solution has been to increase the use of networks and alliances to take advantage of new ideas being developed in the US “Science Base” and commercialised by specialist biotech companies;

Suppliers evolve a wide range of different competitive strategies in response to changes in the needs of customers. Our case studies provide an insight into how suppliers exploit these new market opportunities. Activities include:

- **Service Innovation** – our cases provide examples of different types of service innovation, including higher service standards (*Road Logistics*), and a wider range of basic and value-added services to complement traditional, physical products (*Car Parts, Plant Building*);
- **Relationship Innovation** – our case studies provide evidence of the creation of new, collaborative relationships between suppliers and their customers. Examples include “Systems Integration” in *Car Parts*, value-added services and plant operation in *Plant Building*; outsourcing and warehouse management in *Road Logistics* and networks, alliances, and joint ventures in *Specialist Biotechnology*;
- **Product Innovation** – the *Specialist Biotechnology* case study shows how suppliers invest in the development and exploitation of new ideas for pharmaceutical products, drug discovery technologies, and drug delivery methods.

## APPENDIX V

**COMPANY CASE STUDIES: AN OVERVIEW**

*This section is based on 15 case studies from 10 countries in the European Union and the USA. Each case provides an insight into the role that customers play in the development of new products and services.*

*The section is based on qualitative evidence and should be seen as a complement to the findings from other parts of the research, especially the survey of companies.*

**1. METHODOLOGY**

The Company Case Studies illustrate the role of the customer in the innovation process within individual companies. The Country Associates produced them, using a range of sources.

Each case study follows a standard format:

- **Company Background:** this provides a brief description of the company, covering issues such as the location of main office; size - turnover, geographic spread, employees; main product lines; main customer segments; and market position.
- **The Innovation:** this provides a brief description of the new product or service, covering issues such as changes in customer-related aspects of the business environment; description of the new product or service; benefits offered by the new product or service to the customer. and the target market.
- **The Rationale:** this briefly describes the main stimulus for innovation, especially the importance of customer-based factors.
- **The Innovation Process:** this provides a brief description of the innovation process, with particular reference to the role of the customer in the development and launch of the product or service, covering issues such as the role of the customer in generating ideas; evaluating and refining ideas; preparing the detailed design of the new product or service; developing market launch campaigns; and test marketing.

Where appropriate, the case also briefly examines: the mechanisms through which customers became aware of the new product or service and its benefits; and factors influencing customer “take-up”.

- **Conclusions**

To provide guidance for writers of case studies, “exemplar” case studies were developed.

The Company Case Studies cover EU countries and the USA; a wide range of manufacturing and service sectors; Consumer and Business-to-Business markets; and

a range of different technological solutions to customer needs (some high tech, some lower tech).

*Exhibit I*

Country	Organisation	Size	Sector
Austria	Teleservice	SME	Consumer/B2B (Mobile phone repairs)
Benelux	Philips	Large	Consumer (DVDs)
Denmark	Oticon	Large	Consumer (Hearing Aids)
Finland	Nokian Tyres	SME	Consumer/B2B (Tyre Manufacture)
France	Lafarge	Large	B2B (Ready-mix concrete)
Germany	ABB	Large	B2B (Electrical Engineering)
Germany	Hernstedt	SME	Consumer/B2B (ICT)
Italy	Barilla	Large	Consumer (Food Manufacture)
Italy	UniCredito Italiano	Large	Consumer/B2B (Banking)
Italy	Sogesi	SME	Consumer (IT)
Portugal	MLI	SME	Consumer (Tap Manufacture)
Spain	Industrias Agme	SME	B2B (Machine Tools Manufacture)
UK	Dyson	Large	Consumer (Vacuum Cleaners)
USA	Avon	Large	Consumer (Cosmetics)
USA	MedMined	SME	B2B (Hospital software)

## 2. THE INNOVATION PROCESS IN COMPANIES

Companies differ in how they organise the innovation process. This is because of factors such as differences in size, resources, management attitudes, innovative capacity, strategy, market structure, and sources of knowledge. There is no single “right” approach.

Customers also play different roles in the process. In some companies, the customer plays a very significant role, but in others the role of the customer is less important.

It is clear from the case studies that the innovation process in companies has a number of distinct parts:

- **“Ideas Generation”** – the identification, initial development, and screening of new ideas for new and improved products, processes, and services.
- **“New Product Development”** – the development of new or improved products, services, or processes such that they can be ‘produced’ by the company and made available to customers.
- **“Commercialisation” (Marketing and Sales)** – the launch, distribution, positioning, distribution, promotion and post-sale support of the new offer, such that it achieves target returns.

Customers influence all of these, to a greater or lesser extent.

### 3. THE ROLE OF CUSTOMERS IN THE INNOVATION PROCESS

We have identified five principal ways in which customers influence the innovation process.

#### 3.1. Source of ideas

Innovation depends on the creation of new knowledge and ideas, and the fusion of existing knowledge derived from a wide range of sources. An important source of ideas is the customer. In Consumer markets, this is often derived from market research. Here, a detailed understanding of customers, their attitudes, their buying behaviour, their needs and wants can lead to the development of new ideas and new market opportunities.

In Business-to-Business markets, however, ideas can be communicated directly from customers to suppliers. This often happens when large “demanding” customers share their requirements directly with their suppliers and ask for their assistance in seeking solutions. Sometimes, “demanding” customers will also share technological advances with their suppliers to raise the performance of the entire supply chain.

*Good examples in our case studies include Teleservice, Oticon, Hermstedt, Barilla, Sogesi, Industrias AGME, and Avon Products.*

Clearly, customers are not the only source of ideas. Scientific research, employees, suppliers, intermediaries and other companies are also important sources.

#### 3.2. Evaluating and refining ideas

The process of evaluating and refining initial product ideas is a difficult one. Judgements have to be made about the likely success of a potential idea, based on little information. Some companies use customers to help them in this process. In Business-to-Business markets, companies may have discussions with major customers, or with customers who they believe may be “early adopters”. “Prototypes” may be shown to customers to explain the product idea and to gauge the initial customer reaction. These

discussions could provide initial information to help companies to evaluate the likely success of a range of ideas.

In Consumer markets, companies may use market research to obtain initial feedback from customers. Qualitative research (such as Focus Groups) is often used to discuss outline ideas with groups of likely potential buyers, and to help companies to evaluate potential success of a new idea. Companies may show “mock-ups” to customers in order to gauge their initial reaction.

Companies will also use a range of other tools and sources of information to refine and evaluate their ideas. These include further research to determine technological feasibility, analyses to estimate the likely cost of development and launch, and strategic analyses to evaluate the extent to which the new idea “fits” with the company strategy. Suppliers, intermediaries, employees and other companies are also important sources of information.

*A number of good examples are found in our case studies, especially Nokian, Lafarge, ABB Utilities, UniCredito Italiano, and Philips Consumer Electronics.*

### **3.3. Product and service design**

Once the company decides to proceed, a detailed development process commences. This process is complex and iterative. It involves different parts of the company (research, production and marketing) and a range of groups outside the company, including suppliers, intermediaries, and customers.

Customers can play a crucial role in this stage, helping to determine the detailed product or service features that could be crucial for its success in the market. Moreover, customers can play an important role in helping to determine the “positioning” of the product or service in the market (how it will be *differentiated* from other competing products), how it will be priced, packed and promoted.

In Consumer markets, customers will usually be involved in this process through market research. This is likely to be both Qualitative (to help refine the precise features etc) and Quantitative (to help determine price levels for example). In Business-to-Business markets, customers may be involved through market research (e.g. for a product targeted at small business owners) or through direct discussions with major customers or “early adopters”. Indeed in some situations, individual customers may become a crucial part of the development “team”, helping to test and refine the detailed specification of the product, and to experiment with it in use.

*Included in our cases are a number of examples, such as Oticon, Lafarge, Barilla, Sogesi, MLI, Industrias AGME, and MedMined.*

### **3.4. Developing market launch campaigns**

The way in which a new product or service is introduced to the market will have a significant impact upon its chances of success. Companies therefore invest significant amounts of time and money in the development of appropriate marketing campaigns to raise awareness of the new product or service; to build positive attitudes towards it;

to stimulate trial of the new product; and to encourage customers to become loyal buyers.

Customers play an important role in helping companies to produce marketing campaigns that are most likely to achieve these objectives. In Consumer markets, customers tend to be involved through market research. Qualitative research (e.g. Focus Groups) are usually carried out in the early stages of the development of communication and promotional material. Quantitative research is usually carried out in the later stages, when communication and promotion materials have been prepared, and companies want to refine the details proper to launch.

In Business-to-Business markets, formal market research may be used if mass advertising or promotional campaigns are planned. In other situations, direct feedback may be obtained from existing customers or from potential customers at a trade fair or conference.

Feedback will also be sought from other important sources, such as intermediaries who will stock the product when it is launched.

*Good examples found in our case studies include Nokian, Barilla, UniCredito Italiano, Dyson Appliances, and MedMined.*

### **3.5. Test market products and services**

The launch of a new product or service is often a very costly and potentially risky process. Companies sometimes decide to launch a new product on a limited basis, in order to test reactions to it, and hence to refine the product and/or the associated marketing campaign prior to its wider launch.

In Consumer markets, for example, companies sometimes decide to launch a new product in one region only (often one that corresponds to a specific TV Region). Customers play a crucial role in providing feedback to companies in this situation. Market research is used to measure awareness, attitudes, trial and repeat purchase. It is also used to measure awareness and attitudes towards communication and promotional campaigns. The most direct feedback, however, that a company receives is the actual purchasing behaviour of customers – the extent to which they try the product and the extent to which they buy it again. Market research will also be carried out amongst buyers to try to gauge levels of customer satisfaction.

In Business-to-Business markets, test marketing is more likely to be carried out amongst a selected group of existing customers or “early adopters”. Feedback is likely to be sought through direct contact with the purchasers.

At this stage, important feedback will also be obtained from intermediaries (wholesalers, retailers and distributors). In some situations, feedback may also be sought from “opinion leaders” (such as high profile users, or journalists working on specialist magazines that are relevant to the product).

Feedback from test marketing activities plays an important role in refining the product or service and the launch campaign. It also creates a feedback loop into the company for continuous improvement in the new product development process.

Indirectly, customers also play an important role in the decision to invest (or not) in the development of a new product or service. Levels of expected demand, the likely speed at which customers will adopt new products, and the price that customers are likely to be prepared to pay, are all critical determinants in this decision.

*Examples found in the case studies include ABB Utilities, Lafarge, Hermstedt, Industrias AGME, and Dyson Appliances.*

## APPENDIX VI

**PUBLIC POLICY MONOGRAPHS: AN OVERVIEW**

*This section is based on 12 individual reports from Member States of the European Union, the European Union and the USA.*

*Country Associates were asked to provide a maximum of four pages of information on a range of topics, but they were encouraged to emphasise areas of their own choosing.*

*Hence this section is not a comprehensive one; rather it is designed to give a flavour of some of the ways in which public policy is helping customers to stimulate innovation. It should be seen as a complement to the findings from other parts of the research, especially the survey of companies.*

**1. METHODOLOGY**

The principal purpose of this phase of the project was to undertake a review of current policy practices and trends in order to identify those that enhance the power of customers to drive innovation.

BDL's network of Country Associates researched and wrote short country monographs that summarise policy initiatives at a national level. They were written to a common format for 10 EU countries, plus the USA.

*Exhibit J*

<b>Country</b>
Austria
Benelux
Denmark
Finland
France
Germany
Italy
Portugal
Spain
UK

Each national monograph covers:

- **Policies to build positive attitudes amongst citizens towards change, risk-taking, and new technologies.** These include
  - Curriculum or other educational reforms to establish an early awareness of the benefits of science, technology, innovation, and entrepreneurship amongst school children;

- Campaigns to increase the awareness of the benefits of science and technology amongst young people and opinion-formers; and,
- Political support for new technologies, such as ICT or biotechnology.
- **Policies to strengthen demand for new goods and services.** These include:
  - Public procurement of leading-edge goods and services especially ICT;
  - New policies and regulations to reduce customer uncertainties about the quality, safety and performance of new products and services; and,
  - New initiatives to reduce the costs of new technologies and to increase the availability of complementary assets.
- **Policies to strengthen the power of customers to demand high quality, and leading-edge products and services.** These include:
  - New initiatives to reduce market entry barriers, especially in Service sectors; and,
  - New initiatives to strengthen consumer protection legislation.

An “exemplar” was written and circulated to all members of the country network.

BDL researched and wrote a short review of EU-level initiatives based on literature, a review of relevant policy documents, and discussions with relevant experts. It covers successful policy initiatives in areas such as technical standards, environmental protection standards, competition law and consumer protection.

## 2. INITIATIVES TO BUILD POSITIVE ATTITUDES AMONGST CITIZENS

### 2.1. The Education System

There have been a number of reforms in the education system in most EU countries, from infant to post-graduate, designed to improve skills and expertise in the areas of:

- Natural sciences (including bio-technology);
- Information and Communications Technologies;
- Health education;
- Consumer education;
- Problem-solving;
- Entrepreneurship; and
- Innovation

Examples include:

- Using international comparisons as yardsticks (Austria);
- Encouraging spin-offs from universities (Austria);

- Encouraging greater contacts between school and university (Finland);
- Holding “festivals” (France and Portugal);
- Holding competitions (the USA);
- Creating specialist (biotechnology) schools (Germany);
- Encouraging enterprise creation at schools (Germany, The Netherlands and the UK);
- Establishing “chairs of entrepreneurship (Germany);
- Establishing a central teaching resource specialising in ICT (The Netherlands) and in “inner city areas” (the USA);
- Creating “science and engineering ambassadors” (the UK); and
- Using museums as resources (the USA)

## **2.2. Awareness-building Programmes**

Most governments are active in building awareness of the importance of innovation, particularly associated with new technologies, amongst potential entrepreneurs and innovators (the “supply side”) and amongst opinion-formers and the public (the “demand side”)

Examples include:

- Awarding prizes for innovation (Austria, France and The Netherlands)
- Holding workshops to debate the importance of innovation (France and Germany)
- Broadcasting information about innovative projects (France)
- Running high profile information campaigns on specific subjects such as the Internet (France and Germany), biotechnology (Germany) and science, engineering and technology (the UK);
- Training programmes for citizens (Spain); and
- Providing local centres to help potential users (Germany, The Netherlands and Portugal)

## **2.3. Political Support for new Technologies**

All governments provide support for new technologies through their research and development programmes and by encouraging venture capitalists (the “supply side”) but there are a number of examples of direct political support for new technologies (on both the supply side and the demand side).

These include:

- Providing support for the infrastructure needed to make the most effective use of ICT (Denmark, Germany, The Netherlands and Portugal);
- Making organisational changes to government departments to focus on specific areas e.g. biotechnology (France and the UK);
- Making public statements by politicians and senior civil servants (Germany and the UK); and
- Introducing a comprehensive programme of e-government covering all parts of the Public Administration (Italy)

### **3. INITIATIVES TO STRENGTHEN DEMAND FOR NEW GOODS AND SERVICES**

#### **3.1. Public Policies to stimulate Innovation**

All governments intervene directly to stimulate innovation principally through their research and development programmes but many also use their purchasing power and procurement policies (as a customer) to stimulate innovation.

Examples include:

- Requiring that tenders must be lodged by the Internet (Austria, Finland, Germany, The Netherlands and Portugal);
- Stimulate the growth of world-class companies through the use of the social welfare system (Denmark), health companies (the UK), energy policy (Denmark) and environmental legislation (Denmark and Portugal); and
- Providing services by the Internet (France)

#### **3.2. Building Consumer Confidence**

Many governments have developed programmes to give consumers' confidence about the effectiveness and the security of new technologies.

Examples include:

- Programmes to raise awareness of the importance, the utility and the security of the Internet, in particular e-commerce (Finland, France, Germany, The Netherlands, Portugal and the UK);
- Programmes to develop standards for ICT and other innovative technologies (Finland, France, Portugal, Spain and the UK);
- Programmes to improve transparency in areas such as biotechnology and solar technology (Germany);
- Labels to encourage the growth of environmentally-friendly products (Germany);
- Programmes to increase confidence in food safety (The Netherlands);
- Improved legal rights for consumers (The Netherlands);
- Independent laboratories for research into new products and services (Spain); and
- Promotion of digital television (Spain)

#### **3.3. Lower Costs and Improved Infrastructure**

European governments have adopted a number of different strategies to reduce costs and improve the infrastructure needed to support the development of new technologies.

Examples include:

- No taxation on communication services (Finland);
- Financial support for the development of the mobile phone network in remote areas (France);
- Tighter regulation in ICT (France, Germany, Spain and the UK);
- Creation of plan to develop a digital infrastructure (Germany);
- Selective support for R&D in new technologies (Germany);
- Subsidies for sustainable and renewable energy (The Netherlands);
- Support for development of Broadband Internet (The Netherlands and Spain);
- Support for development of innovative clusters (Portugal);
- Establishment of minimum standards for the installation of telecommunication services in new buildings (Spain); and
- Support for training (UK)

#### **4. INITIATIVES TO STRENGTHEN THE POWER OF CUSTOMERS**

##### **4.1. Consumer Policy**

Consumer policy has grown in importance in most countries in recent years. Governments have taken a number of initiatives to protect consumers. These seek to protect the rights of consumers as purchasers, and the health and safety of consumers as users.

Relevant initiatives include:

- Involvement of consumers in the policy-making process (Austria and The Netherlands);
- Provision of independent advice on consumer issues and product quality (Austria);
- Improved food safety (Denmark, Finland and France);
- Regulations for labelling and packaging (Finland and France);
- Procedures for preventing and settling disputes (Finland, France, The Netherlands, Portugal, Spain and the UK);
- Improved product safety standards (France and the UK);
- Control of advertising (France and the UK);
- Information exchange through dialogues between consumer organisations and companies (France, The Netherlands, and Spain); and
- Codes of Practice (the UK)

##### **4.2. Liberalisation**

Most European countries have, in recent years, undertaken a programme of privatisation and liberalisation of key infrastructure sectors (with associated regulatory controls). These include telecommunications, energy, postal services and railways. This has had a major impact on price and variety of products and services available to consumers – including better responses to complaints and suggestions.

### **4.3. Competition Policy**

There have, in recent years, been a number of changes in competition policy, which have increased the rights of consumers.

