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**COMMUNICATION FROM THE COMMISSION
TO THE COUNCIL, THE EUROPEAN PARLIAMENT, THE ECONOMIC AND
SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS**

Industrial Policy in an Enlarged Europe

EXECUTIVE SUMMARY

Competitiveness – the ability of the economy to provide its population with high and rising standards of living and high rates of employment on a sustainable basis – is at the very heart of the ambitious goals set for the European Union at the Lisbon meeting of the European Council in spring 2000.

Achieving this depends on the ability of the European Union to maintain and develop the competitiveness of its manufacturing industry. Industry's interdependence with services cannot be ignored and the progressive outsourcing of business services has reduced the apparent scale of manufacturing industry.

Yet the vibrancy and dynamism of industry is essential for Europe to be able to sustain and increase its prosperity while meeting its wider social, environmental and international ambitions.

European industry is modern and, in many respects, successful. Yet its slow productivity growth is a serious cause for concern. That is why, on the eve of enlargement, this Communication examines the EU's industrial policy established in 1990, to ensure that it is being applied to the best advantage. If this can be ensured, then the EU will be able to reap the benefits of its industrial potential in the years to come and to progress towards its wider goals.

Enlargement will be a major source of opportunities for industry in new and existing Member States alike. It should make a positive contribution to overall industrial competitiveness.

The competitiveness of manufacturing industry is a cornerstone of the EU's sustainable development strategy. Sustainability has three pillars – economic, social and environmental. Progress towards meeting the sustainability objective implies that the EU advances in a balanced manner with regard to each pillar. Neglecting one of the pillars could only result in the overall objective being missed. Therefore, competitiveness is a necessary ingredient in the success of the sustainability strategy.

Three key factors of industrial competitiveness deserve particular attention: knowledge, innovation and entrepreneurship.

- Europe needs to be at the cutting edge of knowledge. The need for more and better efforts in education, vocational training and research, to put this knowledge at the disposal of industry, have been signalled repeatedly. New technologies, including ICT, biotechnology and nanotechnology, have to be developed, as do the skills and know-how to use them.
- European industry also needs to become more innovative. Every sector and activity needs to be constantly initiating, refining and improving its products, services and processes. The conditions to stimulate vigorous innovation have to be in place.
- Europe must also develop its entrepreneurial capacity to take risks and grow new and bigger businesses. Europeans seem too reluctant to bear entrepreneurial risk, too readily satisfied with limited growth of businesses and too reluctant to acknowledge and reward the social contribution of risk-takers.

Industrial policy is horizontal in nature and aims at securing framework conditions favourable to industrial competitiveness. Its instruments, which are those of enterprise policy, aim to provide the framework conditions in which entrepreneurs and business can take initiatives, exploit their ideas and build on their opportunities.

However, it needs to take into account the specific needs and characteristics of individual sectors. It therefore needs to be applied differently, according to the sector. For example, many products, such as pharmaceuticals, chemicals, automobiles, are subject to detailed sector-specific regulations dependent on their inherent characteristics or use.

Industrial policy therefore inevitably brings together a horizontal basis and sectoral applications.

To ensure that industrial policy responds to constantly changing challenges, the Commission should also carry out in-depth analyses and regular monitoring of the competitive situation of these sectors. These 'reality checks' would enable it to assess the appropriateness of the policy mix.

Industrial policy also has to ensure that other policies contribute to the competitiveness of Europe's industry. It therefore covers a very wide field, while many of its instruments are the instruments of other policy fields. Industrial competitiveness depends on policies such as competition, the internal market, research and development, education, trade and sustainable development.

What is needed above all is that these instruments are balanced as to their different objectives, taking careful account of their industrial consequences. Industrial policy therefore needs a rigorous working method to maximise the dynamic interactions between these policies.

Instruments such as impact assessment and cost-benefit analysis, already part of Commission policy, are being developed and refined in practice, to ensure that policy interventions are well adjusted to needs and are predictable as to their results. Industrial policy itself has to be innovative, for example in developing new and less intrusive regulatory instruments, focused on the results rather than the means to be used, leaving scope to industry to find its own technical solutions and engaging the commitment of industry itself. Public consultation needs to promote the widest possible understanding of issues and policies.

This Communication sets out issues and points the way towards balanced, integrated solutions. Finding those solutions in particular circumstances and ensuring that they are well applied, requires continuing vigilance, analysis and discussion.

The Communication is intended by the Commission as the start of a process of examination of the appropriateness and balance with which its industrial policy is applied.

- In the first place, it invites the other Community institutions to discuss the approach described in the Communication and to react to it.
- Second, it intends to screen the way in which its own main policies interface with the competitiveness of industry.
- Third, recalling that most industrial policy is not carried out at the EU level, but under the competence of the Member States, the Commission invites the Member States to examine their own industrial policy in the light of the communication. The open method of co-

ordination, set up by the Lisbon European Council, offers a context in which national policy performance could be discussed, developed and improved.

The Commission invites interested parties to contribute to this process. It intends to report, by the end of 2003, on the results it has achieved and may launch further initiatives.

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Table of content

I.	INTRODUCTION	7
II.	THE COMPETITIVENESS OF EU INDUSTRY	8
II.1	Industry as the source of Europe's wealth	8
II.2	A snapshot of European industry: some trends, strengths and weaknesses	9
II.2.1.	European industry is modern and competitive in many respects	9
II.2.2.	...but displays slow productivity growth	10
II.2.3	SMEs, progressively integrated in clusters and production networks, play a central role	12
III.	IMPLICATIONS OF ENLARGEMENT FOR INDUSTRY	13
III.1.	Significant – but unequal – progress has already been achieved	13
III.2.	Some areas will still need specific attention	13
III.3.	Enlargement offers new opportunities for competitive reorganisation.....	14
IV.	CHALLENGES FOR INDUSTRIAL POLICY IN AN ENLARGED EUROPE	14
IV.1.	The challenge of globalisation	14
IV.2	Technological and organisational change	15
IV.3	The key role of innovation and entrepreneurship	16
IV.4.	Sustainability and new societal demands	17
V.	THE WAY FORWARD	18
V.1	Cross-cutting factors underpinning competitiveness and growth	18
V.1.1	Promoting innovation and knowledge	19
V.1.2	Entrepreneurship	20
V.1.3.	Promoting a sustainable structure of industrial production.....	20
V.2.	Revisiting the EU approach to industrial policy	21
V.2.1.	The key importance of framework conditions	21
V.2.2.	A more systematic EU approach for improving framework conditions	23

V.2.3.	Improving the integration of EU policies with an impact on industrial competitiveness	25
V.2.4.	Responding to the specific needs of candidate country industry	28
V.2.5.	Striving for improved global governance	29
V.2.6.	The sectoral relevance of the revisited approach	30
VI.	CONCLUSION	31
ANNEX:		32

I. INTRODUCTION

The broad principles of the EU's current industrial policy were set out in a Communication adopted in 1990¹. This approach aimed at creating framework conditions for enterprise to improve its competitiveness and which would compensate where necessary for market failure. It was to use the instruments provided by various other Community policies.

Since then, the political context has changed. The European Community has become the European Union, formed of 15 Member States, with 10 more about to join. An effective internal market has been consolidated by the single currency and expanded to the European Economic Area (EEA) and to the candidate countries. The Uruguay Round greatly extended the rules of the world trading system.

Successive Communications over the last twelve years have developed the policy adopted in 1990². Thus the approach has been refined over time, in particular to underline the key role of knowledge and innovation in a global economy, although the basic parameters have remained the same.

Earlier this year, another Communication³ drew attention to the slowdown in productivity growth in the EU and warned that this may jeopardise the **goal set at the Lisbon European Council in 2000 of making the EU, by 2010, 'the most competitive and dynamic knowledge-based economy in the world, capable of sustainable growth with more and better jobs and greater social cohesion'**. The importance of competitiveness and the increased need for synergy among industrial policy, R&D policy and the single market have been further underlined by the decision, taken by Heads of State and Governments at the Seville European Council, to set up a new Council formation that will address all competitiveness-related issues.

As wealth increases, issues such as sustainability and safety become ever more important to European citizens. This was reflected in the **adoption, at the Gothenburg European Council in 2001, of the EU's sustainable development strategy**, aiming at the simultaneous pursuit of objectives under the three pillars – economic, social and environmental – which underpin this strategy. The effective application of the strategy requires full coherence between the policies of the respective pillars.

Industrial policy has a key role to play in helping the EU meet the Lisbon and Gothenburg objectives. On the eve of an enlargement that will bring important changes in the industrial landscape of Europe and specific problems affecting industry in the new Member States, a review of this policy is timely, so as to ensure that the EU has the tools with which to respond to the needs of an enlarged Europe. This review should contribute to the

¹ 'Industrial Policy in a competitive and open environment: guidelines for a Community approach' (COM (90) 556 final)

² The 1993 White Paper on Growth, Employment and Competitiveness stressed the importance of SMEs, infrastructure and new technologies. In the 1994 Communication ('An industrial competitiveness policy for the European Union' (COM (94) 319 final), the onus was put on intangibles and industrial co-operation. The issue of globalisation was addressed in the 1999 Communication ('The competitiveness of European enterprises in the face of globalisation – How it can be encouraged' (COM (98) 718 final).

³ 'Productivity: the key to competitiveness of European economies and enterprises' (COM (2002) 262 final)

development of synergies between industrial policy and the other policies geared towards achieving the objectives of the Lisbon strategy.

Developing the growth potential of the European Union must remain central to the objectives of industrial policy. It aims at reinforcing the Union's ability to achieve higher growth rates and to generate high living standards and numerous and lasting jobs.

In order to reach this objective, **the Union's industrial basis must be consolidated through specific policies.** As a matter of fact, a buoyant industry generates positive externalities on the economy as a whole, increasing the growth potential and the vibrancy of the economic fabric, fostering innovation and training as a result of increased demand for skills. In this perspective, industrial policy plays a key role by concentrating on strategies, the creation of a favourable environment and clear support to key investments that can generate growth. On the basis of the horizontal approach aimed at creating adequate framework conditions, a number of priorities should be identified with a view to facilitating the development of domains with a strong potential. This approach must be closely coordinated with other EU policies that can also foster or accompany the development of the Union's industrial base.

Enterprises, for their part, will retain the prime responsibility for achieving competitiveness. They also contribute to EU environmental and social priorities, by putting corporate responsibility into action on a wider scale.

This Communication marks the start of a process in the broader context of the Lisbon and Gothenburg agendas. The Commission's wish is that it will trigger a broad debate on how to improve industrial policy's contribution to the competitiveness of industry and to refine the integration between the various EU policy instruments that have an impact on industrial competitiveness.

II. THE COMPETITIVENESS OF EU INDUSTRY⁴

II.1 Industry as the source of Europe's wealth

A vibrant, competitive industry is essential for Europe to sustain and increase its prosperity while meeting its wider social, environmental and international ambitions.

In recent years, the structure of production in Europe has been experiencing marked changes. The share of the services sector in EU output has increased from 52% in 1970 to 71% in 2001, while that of manufacturing has decreased from 30% to 18% in the same period⁵. As a result of this "tertiarisation", policy makers' attention has not maintained a sufficiently strong focus on manufacturing, comforted by the **widespread, but erroneous, assumption that in the knowledge economy and the information and service societies manufacturing industry no longer plays a key role.** This statistical trend reflects the impact of two forces: first, high productivity growth in the manufacturing sector relative to services, and second, the associated increase in wealth, which has resulted in more than proportionate increases in the

⁴ The analysis in this section is complemented by a separate statistical annex SEC(2002) 1340, which contains the tables and graphs referred in the text.

⁵ The 'services sector' comprises: wholesale and retail trade; restaurants and hotels; transport and storage; communication; finance; insurance; real state; business services; and, community, social and personal services. The last item includes public administration, health, education, defence, as well as "other community, social and personal services".

demand for household-oriented or personal services⁶. In parallel, thanks to productivity gains the relative price of manufactured products has been declining over time.

The **interdependence between the service and the manufacturing sectors has also increased over time**, as input-output data show. The aggregate national accounts statistics hide the fact that manufacturing companies have been outsourcing activities regarded as not central to their line of business, which were earlier accounted for as part of manufacturing. Increased demand of services from manufacturing has contributed to the rise in output of business services, which in 2000 accounted for 48.3% of the EU15 GDP (see graph 1.3)⁷.

These developments are related to the importance of the quality and quantity of knowledge that economic activities rely upon. Knowledge and the economy's ability to transform it into technological and commercial applications are at the root of productivity increases and the associated competitiveness challenge. The available stock and rate of accumulation of human capital play a crucial role. The **growing complexity of knowledge has led to increased industry specialisation and lies behind the outsourcing trend**, particularly of ICT-related and other knowledge-intensive services, which act as sources of innovation and product differentiation, contributing to productivity growth.

But **the intertwining of manufacturing and services goes far beyond outsourcing**. A whole array of services associated or bundled with products has developed. These services, mostly carried out by specialised service companies, are dependent on manufacturing. Manufacturing innovations have also opened the way for totally new service concepts, as with telecommunications and information technologies. In turn, industrial competitiveness relies on the quality and cost-effectiveness of transport, financial and business services. Nevertheless, it is finally in manufacturing that most new technological applications are introduced and result in economic value. Also, knowledge-based, scientific breakthroughs only lead to new products if a solid and efficient manufacturing base exists to produce them.

Given the importance of these developments, the scope of this Communication reflects the interdependence between manufacturing and services.

II.2 A snapshot of European industry: some trends, strengths and weaknesses

II.2.1. European industry is modern and competitive in many respects

In the face of increased global competition, **most European industrial sectors have made substantial efforts to upgrade their production infrastructures and integrate new forms of organisation**. Through investments in capital equipment, in-house research, or contacts with the science base, state-of-the art knowledge has permeated much of the textile, food-processing, furniture, farming and fishing, retail, engineering and chemical industries. All these sectors, labelled as medium or low-tech, now use innovative and technology-based processes in their production.

This process has led to an **upgrading of the skill content of jobs** which, more than the growing share of high-technology sectors in total production, accounts for the rising demand of highly-skilled labour. The industry's shift in demand towards higher levels of educational

⁶ As incomes increase, the demand for services grows more than proportionally (in other words, the income elasticity of the demand for services is greater than one).

⁷ This broad definition of business services includes all the 'services sector' except community, social and personal services.

attainment, which means that industry's competitiveness will increasingly depend on the qualitative level of human capital, has been matched by a continuous rise in the average duration of education of the working population in the EU. However, at 87% and 90% of the US and Japan levels respectively, the EU still underperforms its main competitors (see graph 6.1). Public spending in education and training as a percentage of GDP, albeit at a relatively high level, has also been declining steadily from 5.7% in 1990 to 5% in 2001. This is at odds with the Lisbon goals of 'a substantial increase in per capita investment in human resources'. The level of private investment in education, lifelong learning and scientific investigation is also much lower than that achieved by our main trading partners. In addition, the efficiency of investments in education and training also raises concerns.

Substantial investments in environmental protection⁸, clean technologies and environment-friendly production processes have also **enabled the European industry to take on board the sustainable development dimension**, breaking the link between production and emissions of airborne pollutants⁹.

Partly in response to the growing importance of the internal market and to the introduction of the euro, but also reflecting world-wide trends of consolidation and restructuring, the EU industry experienced significant mergers and acquisitions (M&A) activity in the second half of the 1990s. The services sector saw a surge in M&A activity with an EU target in the post-1995 period while it was less intensive in the rest of the economy. The key reasons for this have been the late liberalisation of the services sector (compared to the rest of the economy) and also the lessening of constraints in the operation of state monopolies. M&A activity in the EU peaked at 16,750 operations in 2000, but eased back since. As the dispersion of shareholdings widens it is possible that M&A activity may rise again in the future¹⁰.

European industry remains a dominant force in international trade. The greater presence of new trading partners in world markets has eroded the share of the EU in world exports. However, this trend is less marked for the EU than for the US and Japan. The EU's share fell from an average of 19.3% over the 1991/95 period to 18.4% in 2002. Over the same period, the US share went down from 15.1% to 12.1%, and Japan's share from 12.2% to 8.2% (see table 2.1 and graph 2.3). Furthermore, in some key sectors such as automobiles, aeronautics or some categories of telecommunications equipment, EU companies have achieved global leadership. The trade balance for goods – which has been in surplus by between 1 and 2% of GDP in 9 of the last 10 years – and the upward trend of the export ratio for goods in EU GDP confirm the solid competitive position of the EU industry in global trade (see graphs 2.1 and 2.2).

II.2.2. ...but displays slow productivity growth

In the 1990s, even if some small EU countries have recorded outstanding productivity improvements, **productivity growth in the European manufacturing industry has been below the US levels** (see table 4.2). A wide gap has emerged in the second half of the decade, with the EU displaying a rate of 3.2% compared to 5.5% for the US for the period 1996/2000. Despite possible difficulties about the accuracy of productivity measurements, the data reflect an acceleration of the US rate of labour productivity growth, particularly when compared to

⁸ Total spending related to environmental protection has risen to 2% of total industrial value-added
⁹ For instance, despite a 30% increase in industrial production since 1985, emissions of carbon dioxide have fallen by 11% and emissions of acidifying gases by some 50% over the same period. (Commission Competitiveness Report 2002)

¹⁰ See "Mergers and Acquisitions" European Economy, Supplement A, No. 12, December 2001.

the situation in the second half of the 1980s. For the whole EU economy the rate of productivity growth is lower than for manufacturing alone, reflecting the relative weaker performance of the service sector, and displays a marked slowdown from an average of 1.9% in the first half of the 1990s to 1.2% in 1995-2001. Overall, **these figures entail a dangerous deterioration of the growth potential of the EU** and an obvious risk for the competitiveness of its industry. The Commission's Competitiveness Reports of 2001 and 2002 identified insufficient innovative activity and weak diffusion of ICT as key determinants of Europe's under-performance in productivity growth.

The link between ICT adoption and productivity growth is now widely accepted. The EU rate of ICT expenditure has been gradually rising over the last years, from 5.4% of GDP in 1996 to 7.1% of GDP in 2001, almost narrowing the gap with the US figures which suffered a marked decline in 2001. However, the **increase in ICT spending of the last few years has yet to translate into productivity gains**.

On the other hand, although some EU companies are world-class innovators, a low share of European patent and R&D activity vis-à-vis the EU's main competitors indicates that, overall, the **European innovative performance remains too weak**. The 2001 European Innovation Scoreboard shows that, while the best performing countries in the EU exhibit advances over the USA and Japan, the EU as a whole is lagging behind for most of the 17 innovation indicators. Research investment in the EU, at 1.9% of GDP in 2000, as against 2.7% in the USA and 3% of Japan, is still far too low, and the gap is even greater if private sector research alone is taken into account (the private sector alone accounts for 84% of the gap between the EU and the US). This gap is reflected in the number of European high-tech patents, 28 per million inhabitants, which is particularly telling compared to the most performing European countries like Finland (138), Sweden (95) or the Netherlands (58). Another significant indicator is the number of researchers¹¹.

These facts lie behind the less encouraging competitiveness performance of the EU in some of the highest value added segments of the economy. The "Electronics" and "Office machinery and computer industries" are two striking examples of knowledge intensive sectors where the EU should improve its performance. In 2000 the EU share in total OECD exports for these sectors was 16.4 and 12.3% respectively, compared to 23.7 and 24% for the US¹². Different measures of comparative advantage reveal that the **EU tends to specialise in medium-high-technology and mature capital-intensive industries** (see section 2). **If it is essential to keep the strengths in these sectors** which represent a higher share of total output and employment, the **EU should seek to reinforce its position in enabling technologies** such as ICT, electronics, biotechnology or nanotechnology, where it is often lagging behind its main competitors. Technology driven industries are not only a source of knowledge and technological spill-overs throughout the economy but they are also the ones which exhibit greater productivity growth (see graph 4.1). The European industry's relative weakness in these fields as well as their low share in the economy weigh on the overall growth and productivity performance of the EU. In addition, the relatively slow pace of change of the

¹¹ The share of researchers in the total workforce is 5.1 per thousand in the EU. The corresponding figures are 7.4 in the US and 8.9 in Japan. With regard to private sector researchers only, the figures are 2.5 per thousand in the EU, 7.0 in the US and 6.3 in Japan.

¹² OECD Main Science and Technology Indicators.

European productive structure has hampered a rapid redeployment of resources to new market opportunities.¹³

Finally, **Europe's weak productivity growth, as well as the relatively low employment rate, may also be related to remaining structural problems.** These include the fragmentation of certain service and product markets and – despite the progress registered over the 1990s – remaining obstacles to geographical mobility and pervasive skill gaps for many categories of workers.

II.2.3 SMEs, progressively integrated in clusters and production networks, play a central role

SMEs are the backbone of European industry (see table 7.1)¹⁴. They account for about two thirds of employment and 60% of total value added. They stimulate the competitive dynamics of the economy, forcing large companies to increase efficiency and innovate. Furthermore, many European SMEs are world players in niche markets. Their exports amount to 13% of their turnover.

New organisational patterns, under which large firms often operate through EU-wide production and subcontracting networks have also enhanced the importance of SMEs. ICT allow big companies to manage far-flung supplier webs that can integrate hundreds of SMEs. The performance of large firms depends increasingly on the competitiveness of their small and medium suppliers, which in turn depend on the economic situation of these larger partners.

Innovative clusters, while relying on regional sources for their competitiveness, are also increasingly involved in supranational knowledge and production networks. **Companies in such clusters, mostly SMEs, are becoming the dynamic part of Europe's industrial landscape and a source of innovative ideas.** Some European clusters, such as in biotechnology in the Munich and Stockholm areas – where participating firms are often spin-offs from Universities – or in textile in Northern Italy, are world class.¹⁵

Expanded supplier networks have amplified the linkages between apparently unrelated sectors of the economy, as well as between different regions and countries of the EU. For example, engineering companies in landlocked Central European countries – including SMEs – are dependent on demand for engines and other components from shipbuilding companies located elsewhere. Similarly, SMEs in the clothing sector rely on the quality, availability and cost of synthetic fibres produced by fibre manufacturers using raw materials developed by the chemical industry.

Greater outsourcing and downsizing by large firms, even though they can cause temporary adjustment problems, have also created new opportunities and incentives for self-employment. However, **still too few Europeans wish to be self-employed** (see graph 7.3). In addition, **relatively few small and micro companies in Europe grow to the necessary**

¹³ Structural change relates to the economy's capacity to re-deploy resources rapidly in pursuit of new opportunities while exploiting its strengths. The Commission's 1999 Competitiveness Report identified a link between speed of structural change and output and export growth.

¹⁴ Observatory of European SMEs 2002 / No 2. The data correspond to a broad definition of SMEs, including micro companies.

¹⁵ Regional clusters in Europe have been analysed in the Observatory of European SMEs 2002, No.3

critical size to compete effectively with large dominant incumbents or to enter foreign markets.

III. IMPLICATIONS OF ENLARGEMENT FOR INDUSTRY¹⁶

III.1. Significant – but unequal – progress has already been achieved

Candidate countries have made **considerable efforts aimed at structural reform**, achieving a high degree of macroeconomic stability and economic integration with the EU. At the microeconomic level, market liberalisation and privatisation have been accompanied by significant industrial restructuring. They have also modernised their institutional, legal and administrative environment.

Nevertheless, **sizeable differences still exist between the structure of the manufacturing industry in existing and in future Member States**. In the latter, industry is less specialised and still more centred on low-technology sectors including food and beverages, textiles, wood products and basic metal industries. But this is changing. In the more advanced countries production is shifting markedly towards more sophisticated sectors. Labour productivity, albeit in all cases still around or below 50% of the EU average, is also growing quickly. With increased foreign investment and public financial transfers in the form of pre-accession aid, all candidate countries have benefited from important technological and organisational knowledge transfers as well as institutional learning. In 2001, cumulated inflows of foreign direct investment alone ranged from € 521 per capita in Slovakia to € 2.284 per capita in the Czech Republic¹⁷. These trends have been reflected in **growing evidence of catching up and gradual convergence with the industrial patterns prevailing in the EU**.

In the **current Member States industry has also largely benefited from the prospect of enlargement**, taking advantage of enhanced investment opportunities in the candidate countries and of the possibility of tapping into pools of highly skilled labour at relatively low cost. At the same time, the liberalisation of trade in industrial products under the Europe Agreements and the progressive implementation of the Community ‘acquis’ in most sectors have provided the EU industry with a large additional customer base (approximately 110 million with Bulgaria and Romania).

III.2. Some areas will still need specific attention

Although **industry in the future Member States is broadly ready to compete** in an enlarged EU, deeper integration will inevitably entail some **localised problems**. Further **restructuring will be necessary**, particularly in the steel sector where over-capacity problems remain. In other traditional sectors, large firms that have not yet been privatised are finding it difficult to deal with increased competition. Furthermore, in a number of areas or sectors, the **cost of complying with the Community ‘acquis’**, especially environment legislation, may in the short term have negative implications for the cost structure of businesses, although transition periods should help alleviate this problem and candidate countries will more easily access sustainable technologies from current Member States.

¹⁶ The impact of enlargement for industry is further analysed in a forthcoming document to be issued by the Commission services.

¹⁷ Source: Eurostat from national sources. Romania and Bulgaria not included. Data for Malta, Cyprus and Turkey is not available.

Entrepreneurship and SMEs have developed slowly in the candidate countries. Amongst the causes of this situation are the lack of managerial, organisational and technological know-how, difficult access to finance, insufficient supporting institutions and difficulties to integrate in production networks. In some countries, the business environment still makes life too difficult for smaller businesses. Support in particular to SMEs in meeting the challenges of contemporary societal and environmental demands would be crucial in ensuring that they too can fully benefit from the advantages of a stable, accepted and predictable business environment.

In the existing Member States risks for businesses are likely to be concentrated among **SMEs in border regions**, especially in labour intensive sectors that may be faced with wage competition. However, with the exception of a few sectors such as textiles, industrial products from the candidate countries have already enjoyed virtually free access to the EU since 1995 and therefore **most of the expected adjustments have already taken place**. In addition, it is also companies in bordering regions that will enjoy the largest new opportunities as in many industry and service sectors they still retain significant comparative advantages vis-à-vis the candidate countries.

III.3. Enlargement offers new opportunities for competitive reorganisation

Given the increased heterogeneity of wage structures and technological skills in the enlarged EU, industry will have enhanced opportunities for competitive reorganisation. During the transition period the candidate countries have tended to specialise in low-cost production – a move reflected in limited transfers of production from the current Member States to the candidate countries, which made it possible to retain in Europe activities that might otherwise have been re-located outside Europe.

However, **many companies have embarked on a strategy going beyond the outward processing of low-cost production, reshuffling their value chains and integrating companies from the candidate countries on the basis of local technological inputs and skills**. As local suppliers and subsidiaries move up in the value chain they benefit in turn from higher technological knowledge spill-overs. The automobile industry is a case in point.

Overall, enlargement is already a reality for industry and has opened up many opportunities. The challenge in the candidate countries is to develop the skills as well as the institutional and business framework that will enhance the possibilities for local companies to successfully integrate in international production networks. Industrial policy should seek to foster and facilitate such developments in order to release the full potential for economic convergence of the new Member States. At the same time, the industrial policy tools will also have to be applied in a way that takes the specific needs of candidate countries into account.

IV. CHALLENGES FOR INDUSTRIAL POLICY IN AN ENLARGED EUROPE

IV.1. The challenge of globalisation

In 1990, globalisation was only starting to emerge as a policy issue. It is now recognised as one of the key change factors in contemporary economic systems and societies. The

Commission has already analysed its impact on EU competitiveness, identifying opportunities, challenges and policy responses¹⁸.

Most of the world, including China and Russia, is now taking part in the market-based international economy. This opens up **new markets for EU products and services**: as highlighted above EU companies are selling a growing share of their production in foreign markets. At the same time it increases competition from imports and can lead to re-location of productive activities to countries with lower factor costs. As Europe cannot compete on cost alone, **knowledge has a central role to play** in helping industry adjust to the pressures of globalisation, in all sectors – whether high technology or not. In this context, fostering innovation and retaining, developing and/or attracting highly skilled human capital are essential if the enlarged EU is to keep high-value added knowledge-based activities within its borders. Paradoxically, in a globalised economy location remains a crucial factor for research and innovation¹⁹. Therefore, **developing the attractiveness of the EU as a productive location is as important as ever**. In this respect, the EU should examine whether factors such as the cost of production factors such as energy do not influence its attractiveness unfavourably. Similarly, in an increasingly networked economy, the formation of innovative clusters is a key priority.

In addition, in a more integrated world, instability can spread fast, as demonstrated for example by the rapid spread of successive financial crises amongst emerging economies in recent years. **Globalisation therefore requires industrial policy to be able to respond quickly to unforeseen developments**.

Even though **globalisation calls for increased convergence on regulatory issues**, differences of approach between the EU and its competitors can make this challenging. For example, the EU generally handles the risks associated with industrial products (such as environmental, safety and health issues) pro-actively, for example through regulation. In the United States, such risks are often handled by private sector action based on the results of litigation – essentially an ex-post approach. The challenge lies in establishing cooperation between systems based on public requirements and those based on litigation. Standards and technical regulations are other areas where differences of approach can be difficult to reconcile.

IV.2 Technological and organisational change

Globalisation has been accompanied and reinforced by technological change, most notably in information and communication technologies. **ICT is a general purpose technology**. It can help raise productivity in all industries and influence the design, production, distribution and marketing of most products and services. It has also facilitated new forms of organisation such as outsourcing and the tight inter-linkage between industry and services underlined by the above analysis. It affects growth far beyond the ICT-producing sector.

It is the combination of ICT, new managerial and organisational techniques and a skilled labour force that gives rise to significant competitiveness improvements. Technological and organisational change must therefore be accompanied by constant upgrading of the skills of the labour force – including in positions that are traditionally

¹⁸ See footnote number 2.

¹⁹ This is because of the importance of “tacit knowledge”, which as opposed to information, or “codified knowledge”, is not formalised and can only be transmitted through social interaction. This distinction was made by R.Nelson and S.G.Winter (1982), “An evolutionary theory of economic change”.

regarded as low-skill – hence the importance of life-long learning. In fact, the whole work organisation needs to be geared to a positive management of change, including the existence of sufficient incentives for the labour force to adjust to new demands.

A key challenge for the EU is **to ensure widespread adoption and efficient use of ICT** in all industries, including those regarded as traditional. The Lisbon strategy aims to improve the conditions for ICT diffusion. That is why it is so important that key issues addressed by the Lisbon process be resolved.

Technological change does not stop at ICT. Other promising technologies are emerging, with a huge potential to improve industrial competitiveness. They include biotechnology, nanotechnology, and clean energy technologies, and there have been breakthroughs in the area of new materials. New market opportunities are therefore emerging, but these will only be exploited if EU industry improves its adaptability, so that resources can be shifted swiftly in response to new technological developments.

IV.3 The key role of innovation and entrepreneurship

A distinctive feature of advanced economies is the critical role of entrepreneurship and innovation as central drivers of growth.

Motivated entrepreneurs, ready to take risks, create new firms which are a major source of jobs. Particularly in times of rapid technological progress, **the continuous creation of new firms, and the growth of existing ones, is key for adjusting to new market opportunities and achieving innovation and productivity growth.**

Competitiveness and economic growth are also increasingly based on innovation, that is, on the development and economic exploitation of new or improved products and services, and the optimisation of business processes. Innovation continuously redefines markets and opens up new sectors of economic and social activity. It concerns every industrial sector, both old and new.

Knowledge is the core ingredient of innovative activity. Innovation is mostly the result of complex and interactive processes, through which companies tap on complementary knowledge from other organisations and institutions. In addition, innovations are very often founded on new management and organisational methods based on ICT and investment in new equipment and skills. Other forms of innovation related to commercialisation and marketing techniques (presentational innovation) have also gained importance in the creation of economic value.

The Commission has recently pointed out the fact that Europe is spending less on R&D relative to GDP than its main competitors²⁰. Fragmentation of the R&D effort, closed and isolated national research systems, insufficient links between industry and the research base and disparities amongst legal and administrative regimes are taking their toll on R&D investment and knowledge creation. In addition, the ‘productivity’ of European research investment is low: **the EU innovation system has an insufficient capacity to turn new knowledge into value-creating new or improved products, services and processes.**

²⁰ In its Communication “More research for Europe – Towards 3% of GDP” (COM (2002) 499 final)

IV.4. Sustainability and new societal demands

Rising material living standards in Europe have brought with them mounting demands for environmental protection, quality of work, corporate social responsibility and consumer and public health protection.

Public institutions have a responsibility to respond to society's concerns. This has been reflected in the decision at the Gothenburg European Council in 2001 to establish sustainable development as a key policy objective. Sustainable development has three pillars, economic, social and environmental. This challenges industrial policy to respond to **increasing social and environmental demands. Business, too, has a part to play in responding to these demands.** This is at the core of the debate on corporate social responsibility.

The encouraging progress already achieved towards decoupling the trends in EU industrial output and some polluting emissions has shown that **higher competitiveness and environmental protection can be achieved by industry with the support of an appropriate policy mix.**

The growing demand for safety, health, consumer and social protection in part reflects public concerns about the environmental, public health, or ethical implications of some new technologies. It may also reflect fears that globalisation will lead to loss of cultural identity, increased competition from low cost countries, or the undermining of economic structures. It reflects a legitimate public choice regarding the use of increased prosperity. As to the demand for corporate social responsibility, it reflects the need to review the way in which companies are directed, controlled and managed.

These demands from society can also create new business opportunities. Thus the focus on environmental protection has given EU companies a leading edge in environmental technologies and encouraged them to develop sustainable production based on lifecycle analysis. Demand for improved quality of life has opened up leisure-related markets. Attention to consumer concerns, and especially to food quality and safety issues, has also created new market niches. However, new demands can also generate additional opportunity costs.

Policy must therefore strike the right balance, so that the ambitious Lisbon and Gothenburg goals can be met. Strong economic growth provides the resources to meet rising environmental and social demands, particularly when the ageing of the European population is creating major additional social demands.

Some of these issues can only be solved properly in a **global institutional framework**. Such structures and rules are largely in place for trade in goods. In other areas, for example competition, substantial progress has been made in strengthening the international cooperation in the formulation and application of substantive and procedural rules. But for environmental and social issues, there are still serious gaps in the global framework. Global governance often lacks effective enforcement, or is undermined by non-participation of major players. Progress in this respect could **help prevent EU companies from being subjected to costs or other constraints that are not imposed on key competitors, at the same time as making a positive contribution to the achievement of key EU policy objectives** and allowing industry to compete while meeting the societal and political requirements of the European marketplace.

V. THE WAY FORWARD

Industrial policy will continue to rely on a number of factors underpinning competitiveness and growth. In addition to traditional assets such as a stable macro-economic environment, the key importance of innovation and knowledge, entrepreneurship and sustainability must be underlined.

On this basis, this chapter revisits the EU approach to industrial policy.

V.1 Cross-cutting factors underpinning competitiveness and growth

Europe possesses a number of assets that underpin the competitive development and growth of its enterprises. These include in particular:

- A stable political and macroeconomic environment with a well-established rule of law, which allows enterprises to plan better for the future, to invest and grow;
- A single market;
- A high level of social cohesion and a well-trained, highly educated and adaptable workforce, which, even though it needs constant improvement, in particular through lifelong learning and retraining, is a core aspect of the knowledge economy;
- A long established practice of dialogue at all levels between the social partners, which aims at modernisation in accordance with the concerns of employers and employees;
- Services of general interest that contribute to the competitiveness of user industries by providing secure quality services, while guaranteeing universal service at competitive prices. The Green Paper on services of general interest to be presented in early 2003 will foster a debate on how to improve their responsiveness to business needs in terms of infrastructure, education or training;
- Highly-developed energy, transport and telecommunications network industries. Infrastructure will however need to be significantly strengthening²¹, especially in the new Member States.

Even if attention must remain focused on continuously maintaining and improving these key underlying factors, a solid base is already in place.

A stronger policy focus, in line with the Lisbon strategy, should also be put on the direct drivers of growth and productivity of European industry. Along with the widespread diffusion of ICT, recent work from the OECD and the Commission²² has emphasised the core role of innovation and entrepreneurship as the key drivers of growth and productivity. More and more, sustainable development is also becoming a driver of growth and productivity for the EU economy. Industrial policy will have to pay particular attention to nurturing these strengths.

²¹ Enhanced availability of broadband telecommunication infrastructures and the development of Trans-European Networks are key priorities in this respect.

²² In particular the OECD Growth project, 2001; or the Commission's Competitiveness Reports.

V.1.1 Promoting innovation, knowledge and research

The EU should devote particular attention to improving its innovative performance by tackling some critical factors of innovation that are not yet sufficiently developed.

Following the goal set at the Barcelona European Council that **R&D investments** in the EU should be increased, with the aim of approaching 3% of GDP by 2010, the Commission, in a recent Communication²³, has emphasised the need to establish framework conditions that are more conducive to private investment in R&D, as well as to ensure a better use of public financing of industrial research. It has also launched the **European Research Area (ERA)** initiative with a view to overcoming the fragmentation of research activities in Europe²⁴.

R&D policy is a key instrument for increasing the EU's growth potential. Knowledge and innovation are the basis on which high value added industries such as ICT, biotechnology and nanotechnologies can develop. Likewise, industrial policy and R&D policy must create the right conditions for stimulating innovation, in line with the Action Plan on R&D which will be put forward before the Spring European Council.

Technological platforms could be considered to foster marketplaces for cooperation among stakeholders and work out a long-term strategic plan for R&D for specific technologies involving major economic or societal challenges, such as the advent of hydrogen as a new source of energy. They would ensure synergy among public authorities, users, regulators, industry, consumers, and poles of excellence viewed as places where basic research and technology transfer are closely linked. There is a need for coherence between research, which can create new opportunities, and the downstream regulatory framework in which these technologies can be developed and marketed.

In addition, investment in **intangible assets** and **human capital** should be stimulated to make the most efficient use of existing knowledge and maximise its diffusion. Taking better account of the needs of knowledge-intensive service sectors may also contribute to this goal²⁵. Finally, encouraging and facilitating the emergence of **innovative clusters and networks** will be another key priority²⁶. In this respect, the Commission has already recognised the usefulness of redirecting public expenditure towards human capital accumulation and research and development, in line with the requirements of the Lisbon strategy²⁷.

Policies that shape the regulatory framework for firms (competition, IPR); the fiscal incentives (favourable tax treatment of innovation-related expenditure); and the funding possibilities (research, financial services, regional policy) can all be mobilised to foster innovation. Synergies between all these areas of policy action should be reinforced in order to maximise their contribution to growth-enhancing innovation. The central role of innovation in the knowledge-based economy calls for determined action by the EU and the Member States. The Commission will examine the basis for European innovation policy and outline an innovation strategy in a forthcoming communication.

²³ Communication "More research for Europe – Towards 3% of GDP" (COM (2002) 499 final)

²⁴ In its Communication "The European Research Area" (Com (2002) 565 final)

²⁵ The OECD (Innovation and productivity in services, 2001), has also developed the role of knowledge-intensive services in innovation and growth.

²⁶ Current research emphasises the importance of linking the various actors in innovation systems, including new actors such as research entrepreneurs, incubators, innovation centres, etc.

²⁷ Communication "Public finances in EMU – 2002" (COM (2002) 209 final)

Defence industries play a specific role in this respect. Among their specific features are the fact that their vibrancy depends on orders from the State and their high record in terms of research and innovation. The innovative effects of investments in these industries subsequently spill over the economy as a whole, as demonstrated by the US example. It is essential that the EU carry out a reflection on defence industries following the achievements in areas such as the aircraft industry or satellites.

V.1.2 Entrepreneurship

The business environment should be conducive to the creation, growth and development of SMEs and to entrepreneurial activity in general. Limited access to finance at early and intermediate stages of the lifecycle, lack of skills and regulatory and a relatively higher tax burden all constrain SME growth (see graph 7.1). The innovative activity of SMEs could also be further enhanced by better co-operation and interaction across Member States, as well as improved access to research programs, which would allow young companies to draw on complementary know-how and develop the necessary competencies to come up with new products and services. Finally, the entrepreneurial spirit should be further promoted in education and training programmes starting from school.

Entrepreneurship is a cross-cutting objective, which, as innovation policy, requires a concerted effort across a number of policy areas such as education, internal market, financial services, training or fiscal policy. Fostering a business-friendly environment for starting up and developing new businesses is part of the Lisbon strategy and was the subject of the European Charter for Small Enterprises (adopted at the Feira European Council in 2000). The forthcoming **Green Paper on Entrepreneurship** will relaunch the debate on achieving a more entrepreneurial Europe.

V.1.3. Promoting a sustainable structure of industrial production

The need for EU industry to achieve a more sustainable production structure is becoming a driver of growth and productivity, as reflected in the outcome of the World Summit on Sustainable Development in Johannesburg. Forward-looking firms, not least SMEs, can obtain profits and “sustainable value” through the use of design and innovation to create more environmentally-friendly products and the new markets that are increasingly demanded by regulators and consumers.

The EU needs to develop and further strengthen its **sustainable production policy** to meet its Johannesburg Summit commitments on sustainable production and consumption patterns. This strengthening will build upon existing initiatives and be consistent with them. It will also be developed in full consultation with industry and other stakeholders in order to ensure their full commitment and encourage voluntary actions. Key elements of such a strengthening may include:

- encouraging a more widespread adoption of best-practices to improve eco-efficiency in resource use and to increase the use of renewable resources;
- promoting a commercially viable recycling industry and the adoption of best practices;
- implementing a life cycle approach to integrated product policy through voluntary agreements and environmental product standards and declarations;
- encouraging the development and diffusion of clean technologies by tackling barriers to their uptake and encouraging public-private interaction in R&D;

- extending the use of environmental management schemes, taking account of the specific features of SMEs, and further promoting corporate responsibility.

In addition, promoting a sustainable structure of industrial production would also imply developing the capacity to promote, master and anticipate change in the organisation of work.

V.2. Revisiting the EU approach to industrial policy

This section first underlines the importance of the framework conditions that constitute the environment in which businesses develop. It then looks at the tools that are available to assess the impact of these conditions on competitiveness and to detect possible further improvements. In the framework of the Lisbon strategy, the section then explores the way to create a virtuous circle between the various policies that contribute to industrial competitiveness and thereby to achieving sustainable development from an economic, social and environmental viewpoint. Special attention is also paid to the policy needs of the new Member States and to the need to foster global governance. Finally, this section looks at how to assess whether industrial policy is relevant to the specific issues and characteristics of individual industry sectors.

V.2.1. *The key importance of framework conditions*

European firms compete in an increasingly global economy, but the business conditions they face in the internal market are key determinants of their competitiveness, growth and employment performance. Many aspects of the framework within which businesses operate in the internal market depend on institutions and structures, which may be public, semi-public or even private. The framework services all these elements provide and the efficiency of the “system” they form, and in which businesses are embedded, deeply influence their performance. **Focusing on system failures has been identified as a means of greatly increasing the efficiency of industrial policy**²⁸. The EU should develop such a system-oriented approach, responding as far as possible to industry’s identified needs.

One can distinguish between **four main categories of framework conditions** that are relevant from an industrial policy perspective:

- Rules²⁹ that set the general market framework (such as company law, general principles of contract law³⁰, competition and internal market rules, social rules, intellectual property rights, fiscal and labour rules, investment regulations, international trade rules, consumer policy);

²⁸ Systemic failures can take many forms. Examples are weak links between industrial research and the science base, IPR systems that provide insufficient incentives to commercialise and diffuse the findings of public research, difficult access by SMEs to new technologies, or lack of finance at certain specific stages of a company’s lifecycle.

²⁹ Rules as understood here may result from legislative or regulatory instruments, but also from alternative instruments such as negotiated agreements between stakeholders, for example the social partners or producers and consumers.

³⁰ The consultation triggered by the 2001 Communication on European contract law (COM (2001) 398 final) revealed that there are a large number of obstacles and disincentives to cross-border contracts, increasing transaction costs and thereby affecting the competitiveness of businesses, particularly SMEs. The Commission will propose measures to remedy these problems in an Action Plan to be issued in 2003.

- Rules that address specific categories of products and services directly (such as regulations on placing products on the market, associated with issues such as safety, interoperability, standardisation, or product-specific trade measures such as customs tariffs or anti-dumping measures); sector-specific regulations can also have an impact on the competitiveness of other sectors, for example if they affect the price or availability of key inputs;
- Institutions that enable the market to operate, which may be public (such as courts, company registers, competition authorities or patent offices), semi-public or even private (such as technology transfer institutions, standardisation and conformity assessment bodies).
- Broader conditions, whose direct impact is usually more difficult to assess and which are often less easy to influence in the short term – such as the macro-economic framework, societal values influencing entrepreneurship or the political stability of a country.

Since the adoption of the 1990 Commission Communication on industrial policy, European industry has benefited from a number of **significant policy achievements** in improving framework conditions. Above all, the monetary Union is now a reality and the internal market has now been established in many areas. The internal market has brought about the structural reforms needed to create new business opportunities, increase productivity and expand market size for enterprises selling or buying goods and services. The advent of a single currency enhances transparency, reduces transaction costs and multiplies the economic potential of the internal market.

Significant progress has also been made in liberalising sectors such as telecommunications, energy, and transport, improving the competitive situation of user industries. This will need to be further pursued and refined, especially in order to reinforce the competitiveness of users while preserving the viability of universal service.

There are still **areas of shortfall**, however. Regulatory barriers and technical barriers to trade and establishment in some sectors hamper the smooth functioning of the internal market. The financial environment of business, and SMEs in particular, could benefit significantly from deeper, more liquid, efficient and integrated financial markets. In the internal market in services there is a huge gap between the vision of an integrated European economy and the reality as experienced by providers and users of services³¹. In addition, shortcomings in intellectual property protection undermine competitiveness. The Community patent would provide clear gains for the competitiveness of European industry, innovation and research. Nonetheless, Member States continue to put vested national interests first and one year after the Lisbon deadline of December 2001, little progress has been made. Differences in indirect taxation may distort internal trade and fragment the market for goods and services. The complexities of the 15 national corporate tax systems create obstacles to cross-border activities and to the realisation of the benefits of the internal market. The slow progress that has been made in a number of areas, such as the public procurement markets, is not consistent with the Lisbon goal either. Uneven implementation of commitments reduces the benefits of economic integration.

Recent corporate failures have led to massive destruction of wealth and public distrust in market integrity. A sound corporate governance framework is widely recognised as one of the

³¹ See the Commission's "Report on the state of the internal market for services", COM (2002) 441, 30 July 2002.

key prerequisites for the efficient and sustainable development of competitive businesses. A proper definition of the roles and responsibilities of the different company organs leads to the best possible assessment and development of available business opportunities, which in turn promotes growth, innovation and employment. Adequate protection of public interest, without discouraging risk taking and reliance on sound business judgement, enhances trust in financial markets, which results in improved access to cheaper finance. A balanced approach to corporate governance finally fosters a greater attention to stakeholders issues and corporate social responsibility. With the increasing globalisation of the economy, actions at national level may no longer be sufficient. Taking into account the recently published recommendations of the High Level Group of Company Law Experts³², the Commission intends to present an Action Plan on Company Law (including Corporate Governance) in a Communication to be issued in the first quarter of 2003.

A number of important framework conditions are defined directly at EU level, where despite the achievements, there is still significant scope for further action, in particular regarding the regulatory framework. In other areas, **it is the Member States (or their constituent entities) which play the key role in setting framework conditions**. Direct taxation and social regulations are clear examples. Even in areas falling within EU competence, lack of transposition of legislation or its uneven implementation of rules at national or sub-national level may sometimes negatively affect framework conditions. Work should continue on exploring how the EU can strive to improve framework conditions in spite of this peculiar institutional set-up.

V.2.2. A more systematic EU approach for improving framework conditions

The issue of the tools of industrial policy is closely related to its main aim, improving the environment in which companies operate. In this respect, industrial policy cannot be distinguished from enterprise policy as defined in the Commission Staff Working Paper 'Towards Enterprise Europe: Work programme for enterprise policy 2000-2005'³³. This document defines enterprise policy as a policy that 'needs to address the entire business environment to enable enterprises, whatever their size, legal form, sector or location to grow and develop. In Enterprise Europe, anyone with a commercially feasible idea should be able to realise it, with access to the best technology, and then deliver it, by the best possible means, to the appropriate market'. **Industrial policy can therefore be defined as the application of enterprise policy instruments to the industry sector.**

The EU has developed a number of approaches to improve the framework conditions in which companies operate. Efforts have gone into two main directions.

At EU level, it has striven to develop **new approaches to regulation** that aim to make it less burdensome for businesses. Key developments in this area include:

³² The High Level Group of Company Law Experts, set up by the Commission in September 2001 in order to provide recommendations for a modern regulatory European company law framework, presented its recommendations in their final report on 4 November 2002. This report contains an important chapter on corporate governance, and presents detailed recommendations on the following issues: disclosure by companies of their corporate governance structures and practices, reinforcement of shareholders rights, role of (independent) non-executive or supervisory directors, quality of corporate reporting and reliability and integrity of external audits, co-ordination of Member States efforts in the area of corporate governance.

³³ SEC (2000) 771.

- The New Approach to product policy, which limits regulation to essential requirements linked to product safety or interoperability. Manufacturers are free to choose the technological solutions which ensure that essential requirements are met. This fosters innovation, competition and manufacturer responsibility. Voluntary harmonised standards play a key role, as they provide the most convenient way to comply with the essential requirements;
- The Global Approach to conformity assessment, which is linked to the New Approach and aims, wherever possible, to offer manufacturers a choice between alternative conformity assessment procedures, including in many cases self declaration of conformity with the essential requirements. This approach is less prescriptive and has the advantage of increasing manufacturers' sense of responsibility;
- Incentives to the standards organisation bodies to continue developing European standards, as well as new standardisation products that can be elaborated very rapidly. This is important in areas where technical progress is very fast, as it ensures that standards reflect the technological state-of-the-art;

More generally, the Commission launched in June 2002 a broad **Action Plan on “simplifying and improving the regulatory environment”**³⁴, in line with the invitation of the Lisbon European Council. This action plan sets out a series of general measures to improve the preparation of EU action (impact assessment of legislative and political initiatives to measure the likely effects of policy options on various categories of stakeholders, including industry, principles and minimum standards for public consultation), to simplify and reduce the volume of the Community acquis³⁵, to facilitate the choice of appropriate and efficient instruments, including so-called “alternative” instruments such as co-regulation and self-regulation, and to improve the respect of EU rules. A substantial part of the proposed measures are currently the subject of negotiations aimed at concluding an inter-institutional agreement on “better regulation” before the end of 2002, in line with the invitation of the Seville European Council.

On this basis, and within the limits of the Treaty and while respecting the prerogatives of the European Parliament and the Council, the EU should develop and make further use of its experience of better regulation in a number of areas that are still covered by detailed directives and where legislation could be simplified.

The Action Plan will, among other things, facilitate consideration of **alternatives to traditional legislation or regulations** where appropriate. Within the framework to be agreed with the other institutions, the Commission could promote, for example, co-regulation and self-regulation, relying on agreements between stakeholders³⁶ or voluntary undertakings (such as codes of conduct), by manufacturers or service providers. Such voluntary instruments could be promoted, in particular in areas characterised by rapid technical progress. The European approach to standardisation could also be further used in areas such as services.

³⁴ COM(2002) 278

³⁵ The action plan confirms the Commission objective of reducing the volume of the Community acquis by at least 25% by end-2004 and announces a Commission initiative for a simplification programme, building on the experience of e.g. the SLIM (Simpler Legislation for the Internal Market) exercise, aimed at streamlining internal market legislation.

³⁶ The area of industry relations offers examples of such agreements in the framework of the social dialogue. The Commission's proposals in the context of the Green Paper on consumer protection and its follow-up Communication follow a similar line of innovative regulatory proposals.

Another key element in ensuring that regulations do not create unnecessary burdens for business is **predictability**, which has two components. First, businesses need sufficient lead time to comply with the new rules so that the costs of adjusting their products and processes are not unbearable. Second, rules need to be stable and should not be amended too frequently, especially where they imply significant compliance costs³⁷.

In areas where competence lies mostly with the Member States, the EU has also developed novel approaches with a view to measuring and comparing the competitive impact of individual framework conditions and to fostering improvements thereof. Since the Lisbon European Council this approach has been known as the **open method of coordination**. It has enabled the EU to play a positive role in fostering competitive improvements in such areas. The instruments that can be used in this respect include:

- In-depth analyses of the situation, supported by appropriate measurements, with regard to individual framework conditions identified as particularly relevant. This takes the form of scoreboards, such as the enterprise policy scoreboard or the innovation scoreboard, as well as the competitiveness reports or the composite indicators on the knowledge society in areas related to R&D and human capital;
- Comparisons between the respective performance of individual Member States (and selected third countries) with a view to conducting benchmarking exercises, with an appropriate follow up;
- Identification, exchange and implementation of best practices;
- In addition, increasing use will be made in the future of quantitative targets³⁸. Such targets, to be set by the Member States, can be used as yardsticks for monitoring competitive improvements when accompanied by corresponding measurements.

These approaches have already been developed with regard to a number of critical competitiveness factors, especially from the point of view of SMEs, for example start-up procedures, access to finance, business support services, business incubators, transmission of businesses, innovation and research and development or human resources. These policy instruments are still under development, however, and the **EU could use this methodology much more broadly, in order to cover a wider array of relevant competitiveness factors**. In a number of instances, further use of these tools will also imply the increased availability of adequate, reliable statistical material.

V.2.3. Improving the integration of EU policies with an impact on industrial competitiveness

As a wide variety of conditions and factors determine competitiveness, all policies that affect these factors also influence competitiveness. The EU should therefore ensure that their potential for improving competitiveness is fully tapped. In addition, industrial policy must

³⁷ The use of voluntary approaches combined with an appropriate level of government regulation is part of an approach that aims both at achieving a high level of protection of legitimate interests such as consumer protection and at increasing the transparency and predictability of the regulatory environment for business.

³⁸ As indicated in the Commission Communication on a Better Environment for Enterprises (COM (2002) 610 final).

aim to anticipate and facilitate adjustment of productive systems, ensuring that its consequences can be managed.

Article 157 of the EC Treaty provides that ‘the Community shall contribute to the achievement of the objectives [of industrial policy] **through the policies and activities it pursues under other provisions of this Treaty**’, in addition to specific measures aimed at supporting the actions carried out at Member State level.

Therefore, it is essential to ensure appropriate integration between all EU policies that can contribute to meeting these objectives. This has become even more important in the context of the sustainability strategy, as a proper balance between its three dimensions – economic, social and environmental – must be found.

There are a number of policies whose integration with industrial policy is already well developed:

- **Trade policy** has among its main objectives improving the openness of the world trading system and, more specifically, opening up protected third country markets to EU producers and service suppliers. At the same time, by giving EU producers cheaper access to foreign inputs while subjecting them to increased competition from third countries, it both enables and forces them to improve their competitiveness.
- **Single market-related policies** also have a broadly positive impact on competitiveness, as discussed above, in particular by fostering liberalisation of markets and harmonisation of rules, even though the pace of progress has been uneven, with progress still needed in a number of areas.
- The same can generally be said of the closely related **energy** and **transport policies**.
- **R&D policy**, by reinforcing the knowledge base and focusing on key enabling technologies, is also a major contributor to EU industry’s competitiveness. It could be further mobilised to provide specific support to projects of European interest – such as Galileo – while taking advantage of the specific competition rules on collaborative research.
- **Competition policy** also reinforces industrial competitiveness. Through its regulatory framework, it induces firms to enhance their efficiency and thus enables them to better survive in their markets. It also prepares EU companies for the challenge of third country markets. In this context, the increasingly global dimension of many markets needs to be taken into account. The nature and the practical application of competition and industrial policy have each its own emphasis that need to be balanced in the decision-making process³⁹.
- As in the past, the potential offered by **regional policy** will need to be fully tapped in order to accompany the restructuring that will inevitably continue to occur in a number of sectors as a result of shifts in demand and increased global competition. It will also play a key role

³⁹ The Commission Communication “Productivity: The key to competitiveness of European economies and enterprises”, COM(2002) 262, (particularly chapter seven) points to a number of challenging areas for work.

in supporting the efforts which future Member States will have to make in order to close the competitiveness gap, as well as to alleviate their social consequences.

- The coherence between **macroeconomic policy** and structural policies is ensured by the Broad Economic Policy Guidelines.

Other policy areas, which often correspond to new demands from society, reflect more recent challenges. As a result, their interface with industrial policy could be further improved. This interface must take full account of the EU's **sustainability strategy**, which implies **the simultaneous pursuit of objectives under its three constituent pillars** – economic, social and environmental. While the objectives pursued by policies under these three pillars may *prima facie* appear difficult to reconcile, the sustainability objective is in fact a positive sum game, provided that a number of conditions are respected. First, full account has to be taken of the **dynamic interactions between policies**. Second, there must be a '**reality check**' to ensure that one pillar of sustainability is not developing to the detriment of the others. In other words, constant monitoring is needed to ensure that the three dimensions are progressing simultaneously and in a way which fosters competitiveness.

- **Social and employment policies**, including **vocational training policy**, have a key role in ensuring that the promotion of competitiveness is part of the balanced implementation of the Lisbon strategy. By helping constantly upgrade the skills of workers and thus fostering quality in work, they contribute to meeting demand on the labour market and make a key contribution to the knowledge-based economy. In addition, they can help facilitate the acceptance of necessary industrial restructuring by mitigating its adverse social consequences. Investment in human capital by individuals, enterprises and public authorities is essential for the management of change and combining flexibility with new forms of security for employees.
- **Consumer protection and public health policy** are an essential precondition for consumer confidence, which in turn is the basis for stable and growing demand. Of course, these policy may also include strict regulatory requirements. However, they can also create opportunities for growth by providing a predictable framework to companies. They can also play an important role in fostering public acceptance of certain technologies or commercial techniques against the background of increasingly demanding consumer markets.
- **Environmental Protection** may need to restrict or even ban the use of certain inputs or technologies, which can raise production costs in the short term. In the longer term, however, it can help EU companies gain a competitive edge at the global level and creates new markets for clean products and technologies.
- The growing demand for **corporate social responsibility**, while creating challenges for businesses and policy-makers alike, may ultimately make a positive contribution to the competitiveness of European business by reinforcing the consensus around the European social and economic model.

In all these cases, one of the key issues is ensuring that the means used to achieve these legitimate objectives are as cost effective as possible and that industry retains its competitiveness and is in a position to contribute actively to the further pursuit of societies ambitions.

The EU must therefore ensure that the right balance is struck between measures under the various policies. Member States should do the same in their respective areas of competence. Evidence of an unbalanced policy mix should lead to appropriate corrective action.

There is no miracle solution **for finding the right balance in individual cases**. However, the EU has started to develop a **variety of tools** that could be used depending on the nature of the situation. These tools are addressed in the framework of the Action Plan on better regulation (see section V.2.2. above). In addition, the following considerations must be borne in mind:

- The combination of adequate policy instruments can help reconcile the objectives of apparently inconsistent policies. For example, the EU's business-friendly approach to product regulation also offers effective guarantees to consumers and users thanks to effective market surveillance mechanisms, as provided under the revised Directive on General Product Safety.
- New approaches to and strengthened monitoring and enforcement of regulation can help ensure a level playing field.

On the basis of these elements, the EU will continue to refine its methodology.

Lastly, an even newer policy area, **justice and home affairs**, is expected to have a positive impact on competitiveness and entrepreneurship. In the context of the common policy on immigration. The Commission has put forward proposals that will help address the shortage of skilled labour by facilitating the mobility of long-term resident third country nationals and the admission of third country nationals for employment and self-employment.

V.2.4. Responding to the specific needs of candidate country industry

Enlargement offers new opportunities and competitiveness gains for industry. Experience already gained in improving the framework conditions for business activity can help stimulate these developments in the candidate countries. Analytical and benchmarking tools can point to improvements in infrastructure, skills and local institutions.

Some industrial policy instruments may have to be adapted to respond effectively to specific needs of candidate countries. Policy actions aimed at creating an environment conducive to entrepreneurship, skills upgrading and SME development could be implemented with particular intensity in candidate countries. In April 2002, candidate countries signed up to the principles of the European Charter for Small Enterprises as the basis for policy action in the field. Their progress has been actively monitored by the Commission⁴⁰. The actual balancing between the pillars of the sustainable development strategy will also have to ensure that at all times simultaneous progress is made in the path towards social, environmental and economic objectives. Other areas that may require special attention include supporting the development of business services, promoting the culture of inter-firm cooperation and enhancing the development of innovative clusters. Support from the structural funds should also contribute to achieving industrial policy priorities.

Finally, the Commission is already pursuing a number of actions to assist those specific cases where restructuring is still under way, notably in the steel sector. Moreover, as underlined by

⁴⁰ Report on the Candidate Countries' Measures to Promote Entrepreneurship and Competitiveness. Commission Staff Working Paper, SEC(2001) 2054.

the Strategy Paper on the progress towards accession of candidate countries⁴¹, until the date of accession the Commission will also continue to monitor closely how they are meeting their commitments.

V.2.5. Striving for improved global governance

The effectiveness of EU policies on competitiveness depends partly on success in improving global governance. In some areas, such as competition policy, substantial progress has been made in this respect⁴². In other areas, such as environment protection, consumer safety and social and labour standards, the development of globally accepted principles will need to be further pursued. Such progress should enable the EU to better address at the global level issues that call for global solutions, **raising global standards world-wide, while helping ensure that the costs involved in dealing with global issues are not borne disproportionately by EU businesses.**

EU policy, while continuing to pursue actively such legitimate public policy goals, should have the clear objective of building international frameworks that ensure that commitments are being undertaken on a broader basis. The negotiations currently underway in the framework of the Doha Development Agenda (DDA) will allow the EU to make important contributions to this debate.

Other policy instruments can also be mobilised to this end. Dialogues between EU regulatory authorities and their counterparts in key third countries can play a useful role in progressing towards a more level global playing field, whereas dialogues involving representatives of business communities⁴³ can put decision-makers under pressure to deliver a simpler and more transparent environment for trade and investment.

In addition, as mentioned earlier, the EU has made substantial achievements in a number of areas, such as the creation of successful, business-friendly approaches to product regulation and to better regulation in general, or pioneering attempts to reconcile industrial competitiveness and environmental protection. It should continue to actively promote these achievements internationally, as its contribution to improving global governance.

More specifically, the EU should lend renewed support to initiatives that could lead to extending its regulatory approaches to countries in its immediate neighbourhood, beyond the enlarged EU and the European Economic Area (EEA). The planned establishment of a Euro-Mediterranean Free Trade Area by 2010, as well as Stabilisation and Association Agreements with countries from the Western Balkans and increasingly close relations with Russia and other Eastern European countries could offer interesting opportunities in this respect.

⁴¹ “Towards the Enlarged Union: strategy paper and report of the European Commission on the progress towards accession by each candidate country”, COM (2002) 700 final

⁴² In addition to the establishment of cooperation mechanisms on competition matters on a bilateral basis with third countries, the EU has for example actively participated in the creation of the International Competition Network, a project-oriented and consensus-based organisation of more than 70 antitrust authorities.

⁴³ Key examples of such dialogues include the Trans-Atlantic Business Dialogue (TABD), the EU-Japan Business Dialogue Round Table, the EU-Russia Round Table of Industrialists and the Mercosur-EU Business Forum (MEBF).

V.2.6. *The sectoral relevance of the revisited approach*

EU industrial policy will continue to follow a horizontal approach. This is reflected for instance in policy actions to foster entrepreneurship or innovation, which benefit all businesses. Further, policy action to ensure free movement of industrial products has a horizontal objective. However, its application depends on sectoral characteristics. For instance, products from the pharmaceutical or automotive industry are subject to detailed regulations, because of their inherent characteristics or use. Thus a horizontal policy is applied differently, according to the sector. Similarly, supporting measures, such as in the area of research and development, follow thematic priorities. Industrial policy therefore inevitably brings together a horizontal basis and sectoral application.

In-depth analyses and regular monitoring of the competitive situation of individual sectors should enable the Commission to assess the appropriateness of the policy mix. **Consultation with stakeholders** can play an important role in this assessment and the subsequent decisions on the most appropriate policy-mix to apply. As in the past, the Commission, where appropriate, may set out the line it intends to follow in policy documents.

The annex of this Communication looks at a number of industry sectors with different characteristics and facing different challenges. These sectors should only be viewed as examples, which were chosen because they cover a wide array of different situations. They are used to illustrate how to assess whether the combination of factors and policy actions which influence the competitiveness of each sector is right or should be rearranged, in compliance with the overall revisited industrial policy approach, on the basis of a brief analysis of the sector's strengths and weaknesses.

The fact that **the application of policy needs to take account of the specific characteristics of sectors does not mean that industrial policy must be fragmented**. On the contrary, a broad view is needed. This will guarantee that the application of industrial policy in a given sector is consistent with the interests of other sectors.

In addition, **approaches that are tested in a given sector can be added to the industrial policy toolbox and used as models in other sectors confronted with similar needs**. The novel approaches that have been developed by the European Commission to ensure the participation of stakeholders in analysis and policy shaping are good examples. A number of initiatives have been viewed as successful in helping shed light on challenges to the competitiveness of individual sectors' and possible policy responses. They include the review of pharmaceutical legislation and the High-Level G10 Medicines Group⁴⁴ in the pharmaceutical sector, the STAR 21⁴⁵ report on the aerospace industries – itself a follow-up on the ACARE⁴⁶ initiative – or the Action Plan on Biotechnology and Life Sciences⁴⁷. They offer a model of how to ensure that EU industrial policy better responds to the needs of business.

⁴⁴ The 'High Level Group on Innovation and Provision of Medicines', also known as 'G10'.

⁴⁵ Strategic Aerospace Review for the 21st century.

⁴⁶ Advisory Council for Aeronautics Research in Europe.

⁴⁷ Included in the Communication from the Commission «Life Sciences and Biotechnology – A strategy for Europe» (COM (2002) 27 final)

VI. CONCLUSION

The industrial policy of the European Union has a key contribution to make to the three following tasks.

- The first is to **set out the boundaries** within which industry and entrepreneurs can pursue their ambitions. It aims to establish a predictable legal framework which can be adapted in response to policy needs. Its counterpart is that they should be confident that, when they respect these obligations, European society as a whole accepts the pursuit of their activities. For the Commission, as for Member States, this must be an active role, for failure to set this framework correctly can lead to risks for the public, or to the waste of industrial resources and the frustration of entrepreneurial initiative.
- The second is to **ensure that the conditions are present for industry to develop** and to realise its competitive potential. European society cannot be passive in its attitude to the source of its wealth. The availability of technology, skills, an educated workforce, a positive attitude to risk-takers, finance and the other conditions which form a truly competitive and innovative business environment have to be the active concern of its policymakers.
- The third is to **ensure that the frameworks, institutions and instruments** that are necessary to the business environment and for industry to be able to act in accordance with its public obligations **are in place and function efficiently**, in the broadest sense.

Although this is horizontal in its nature, it has to be applied in a way that is adapted to the specific characteristics of different sectors.

The goal set by the Lisbon European Council and the challenges of sustainability are ambitious and can only be met if EU industrial policy is fully mobilised. A robust set of policy instruments is available and there is a general willingness of interested parties to contribute. However, success, and ultimately the availability of more and better jobs and greater social cohesion, will only be possible if efforts are fully focused.

The **Commission intends therefore, over the coming months, to screen the way in which its main policies interface with the competitiveness of EU industry**. This exercise will also help industrial policy to contribute to meeting the objectives of other policies.

This debate must not remain confined to the Commission. **All the EU institutions, but also the Member States and candidate countries**, should pick up the challenge in their turn. Improving EU industrial policy, to ensure that it stimulates and sustains EU industrial competitiveness, is a concern for us all. In this respect, the Commission invites all interested parties to provide comments on the issues raised by this Communication.

The newly established **Competitiveness Council** will have a key role to play in pushing forward the process started with this Communication. It offers a forum to establish the roadmap for industrial policy's contribution to the Lisbon goal and to monitor progress. It can ensure coherence between the policies at EU and at Member State level and improve their interaction. It is well placed to review both the general competitiveness situation and that of individual industry sectors.

This is a process that is starting. The Commission will come back to the issue to draw further conclusions, in the light of its progress and may propose further initiatives.

ANNEX:

CHECKING THE INDUSTRIAL POLICY MIX: SOME SECTORAL EXAMPLES

1. *The steel sector*

The EU is the second biggest steel producer in the world after China, but the first in respect of the quality of the production. The EU produces about 20% of the world steel output, its turnover is calculated at €70bn and it employs 250.000 people. Furthermore, aside from its own economic importance, this industry is a key supplier to the biggest, and perhaps most internationally oriented, manufacturing sectors, such as construction, vehicles, machinery and equipment, and fabricated metals. It is characterised by the coexistence of very large firms (the numerous mergers of the last few years have created a limited number of truly global players in the EU) and of smaller, specialised producers. The sector is integrated: the top 5 producers represent over 60% of the total EU production, and one of them is the largest world steel producer. Concentration within the steel business is motivated not only by the need to obtain synergy benefits and cost reductions resulting from efficiency measures, but also to reach the financial critical size needed to be able to invest in the necessary, and very expensive, innovative technology. Usually regarded as a traditional sector, it has modernised very significantly in order to adjust to a changing competitive environment.

The EU steel sector is one of the most competitive in the world. This performance is largely due to its 20-year-long restructuring effort. During this period, the EU steel industry has closed down 50 millions tons of excess capacity and reduced manpower from 900.000 to 250.000 people.

In order to keep a competitive edge on technology, the EU industry strongly depends on its ability to innovate, requiring a significant research activity. Moreover, the key of success is to focus progressively on the production of quality steels, tailor-made to the needs of customers. Successful quality competition is thought to be crucial because the EU steel industry, characterised by a limited cost flexibility, will continue to face competitors benefiting from comparative cost advantages and/or less stringent regulations (state aids, environment). Profitability in the steel sector will continue to be influenced by price volatility caused by rapid demand fluctuations in combination with rigid supply structures and/or currency realignments.

The EU has complemented the restructuring efforts of the industry through the specific framework of the ECSC Treaty. This included tolerating State aid only in as far as it was accompanied by capacity reductions, accompanying measures to mitigate the social impact of restructuring, and support to research and development (in particular applied research and support to pilot/demonstration projects). The ECSC Treaty has now come to an end but the EU's contribution to the modernisation of the sector will be pursued in the framework of the EC Treaty. **The present policy mix, involving in particular a strong contribution from R&D and training policies, therefore seems to adequately address the needs of the sector, even though efforts will be needed to maintain competitiveness.**

Enlargement, in particular, will confront the EU with non-viable capacities and low productivity in some of the new Member States, and current restructuring efforts will need to be pursued beyond accession. The experience accumulated by the EU in supporting earlier

adjustment in existing Member States – involving the coordinated use of competition, R&D, professional training and regional policies – can be used as a source of inspiration in this respect. Alignment with the Community ‘acquis’, in particular EU environmental regulations, will also constitute an important challenge for the steel sector in the new Member States. Targeted support from the EU could be useful in both respects.

In addition, the international competitiveness of EU steel producers is threatened by protectionist measures in third countries, as well as by problems of supply of key inputs, in particular ferrous scrap, whose export is restricted by certain third countries. Trade policy instruments will need to remain mobilised with a view to removing these obstacles.

Industrial policy will need to ensure that all these instruments are well coordinated so that maximum leverage can be achieved, while keeping in mind the need for a balance between the three pillars of sustainability.

2. *The chemical industry*

The EU chemical industry is rather heterogeneous. Company sizes vary greatly, and SMEs coexist with world-class companies. The sector plays a major role in the EU, featuring in the top three industries in 11 of the 15 Member States. It also plays a key role as a supplier of a variety of downstream, user sectors, ranging from farming through textiles and automobile.

Its overall competitive position is favourable⁴⁸. The industry’s value added has been growing at 3.2% per annum over the 1990s, to be compared with 1.9% for manufacturing in general. The chemical industry generates 16.2% of manufacturing's added value in the EU. A significant increase in labour productivity of 3.4% p/y since 1996 has largely contributed to the current competitive position. Moreover, with a trade surplus of €50 billion, the second biggest of all EU manufacturing sectors, it is also a major source of income for the EU as a whole.

However, price competition based on low-cost feed-stocks in the Middle-East and heavy competition from China in low-cost/low-margin products is likely to become more intense. This reinforces the already existing trend towards “commoditisation” of chemical products. To stay ahead of this battle and to maintain its competitive position, the industry’s spending on research and innovation will need to be increased. However, profit margins are lower than in the US, making it more difficult to finance investment and research. Furthermore, skill shortages are widely reported. In addition, increasingly stringent environmental and public health requirements are creating special challenges for enterprises in this sector, especially SMEs. **The combination of these factors could lead to a deterioration of the overall competitiveness of the European chemical industry. This risk calls for reinforced vigilance on the part of the EU.**

The EU has established an internal market in chemicals, which has been a major stimulus to its competitiveness. Public and political concern about the protection of human health and the environment from the potential risk from the estimated existing 30,000 chemical substances marketed in quantities above 1 tonne per year (99% of the chemical market) has raised the need for a major overhaul of this policy. The challenge is to achieve a high level of protection for all chemicals while ensuring the efficient functioning of the internal market and stimulating innovation and competitiveness. The Commission has proposed a strategy for

⁴⁸ Source: Eurostat, European Business “Facts and Figures 1990 – 2000”

meeting these challenges⁴⁹. The legislative package from the Commission will aim at a cost-effective implementation of the strategy proposals⁵⁰, while providing the high level of protection that EU citizens require for health and environment. However, it must be carefully implemented and managed if the competitiveness of industry is to be preserved.

A further challenge will lie in the upgrading of the chemical industry in the new Member States and transposition of the Community acquis, which will in a number of areas be costly.

A pro-active approach extending beyond regulatory issues is therefore needed if the EU chemical industry is to be put in a position to address the looming competitive challenges successfully. This could include, subject to cautious monitoring of developments in the chemicals sector, a variety of measures:

- As in other sectors, innovation is a key factor, and an integrated approach could ensure the mobilisation of relevant EU policies – in particular R&D policy and human resources policy – to address the needs of the chemical industry;
- As a very large user of energy, the chemical industry would benefit more than most other sectors from further energy market liberalisation, resulting in enhanced competition and lower prices;
- In terms of regulation, policy makers need find the right balance between short-term burdens on the industry, on the one hand, and longer term improvements to the environment and to public health as well as encouragements to innovation, on the other, in a way that takes account of the opportunity cost in terms of lost alternative investment and of its consequences on industry's competitiveness.
- The chemical sector would also clearly benefit from the development of global rules on environmental protection where this is possible;
- Lastly, trade policy instruments are indispensable to open up new opportunities for EU companies in third country markets. The achievement of a Free Trade Area between the EU and the Gulf Co-operation Council (GCC) could make a positive contribution to this, as well as the extension of the Chemical Tariffs Harmonisation Agreement (CTHA) to further trading partners or, in the longer term, a complete elimination of tariffs on chemicals.

A well-balanced combination of these policy instruments should help maintain the competitiveness of the chemical sector while allowing substantial progress in achieving the environmental and social objectives of the EU's sustainable development strategy.

3. *The aerospace industry*

The defence and aerospace industry is characterised by specific structures: the market for large civil aircraft is dominated by two global players, whereas those for defence goods have State bodies as the only buyers. It has also been traditionally characterised by strong State intervention, including cases of outright State ownership – although a privatisation process is well underway in several Member States – and public support to research and development

⁴⁹ White Paper setting out the strategy for a future Community Policy for Chemicals (COM(2001) 88)

⁵⁰ The total direct costs to the industry for risk assessment under the current proposals are estimated at between € 1.4 billion and € 7 billion, with the most likely value at € 3.6 billion.

activities. The industry is research-intensive and neither civil aircraft nor defence goods are subjected to the normal rules of world trade.

Even though Europe has fostered the emergence of a global competitive player in the sector of large civil aircraft and has made significant inroads in other sectors (helicopters, satellites and their launchers), the competitiveness of industry is under attack, as a result of a combination of factors:

- Insufficient EU-wide industry consolidation: even though there have been efforts to overcome the geographic segmentation of markets, the process of Europe-wide consolidation is still incomplete;
- Fragmented and uncoordinated R&D efforts;
- An incomplete internal market: as far as defence markets are concerned, fragmentation remains the rule, as a result of incompatible national requirements, and the Action Plan that had been proposed by the Commission in 1997 as part of the Communication on ‘implementing a European strategy on defence-related industries’⁵¹ has not seen any concrete follow-up, primarily as a result of a lack of commitment by Member States. In addition, Member States have been reluctant to take a joint approach to public procurement in the defence sector. In the civil sector, on the contrary, the decisions taken by the European Parliament and the Council to set up a European Aviation Safety Agency (EASA), to create common regulation in the fields of aircraft noise performances and security and to pave the way towards the creation of the Single European Sky, give a chance for the European airspace industry to operate in a more harmonised technical environment counterbalancing the consequences of the present diverging national rules;
- Generally diminishing demand: defence industries have been faced with shrinking markets since the end of the cold war, whereas manufacturers of civil aircraft are still suffering from the crisis that has struck airlines as a result of the 11 September 2001 events⁵². The structural situation of the aviation industry depends on its capacity to merge and consolidate itself at European level⁵³.

As a result of these combined handicaps, European manufacturers have been losing ground and are finding it difficult to sustain the levels of investment and innovation that are needed to remain competitive. **The industry therefore finds itself in a critical competitive situation, and rapid and determined action is needed if this trend is to be reversed.**

The policy mix that has been applied at EU level to the aerospace and defence industry has usually not gone beyond support to R&D activities. This is clearly not enough to address the competitive challenges in this sector successfully. The Commission has set up an advisory group made up of industry executives and Members of the Commission and other EU institutions. This initiative, known as STAR 21⁵⁴, has resulted in a report which, on the basis

⁵¹ COM (97) 583 final

⁵² The buoyancy of the EU aerospace industry therefore depends in no small measure on the economic situation of carriers.

⁵³ The recent decisions by the Court of Justice, recognising the exclusive competence of the European Community in the fields governed by internal Community rules should facilitate the adaptation of the relevant regulatory framework.

⁵⁴ Strategic Aerospace Review for the 21st century.

of an analysis of the situation, identified a number of recommendations for policy action aimed in particular at improving competitiveness.

The recommendations deal with research and development, human resources and the mobility of researchers, harmonisation of military requirements in order to facilitate the emergence of a single market, an ambitious space policy (in particular with the Galileo programme) and fostering governance of civil aviation at European level as well as the emergence of an effective European policy on defence.

The instruments of a more ambitious industrial policy in this sector could easily be developed on the basis of a clear commitment. What is needed is such a clear commitment by all interested parties – and above all the Member States – to concrete action to improve the competitiveness of these key industries.

4. *Biotechnology*

Biotechnology is an intensely innovative activity, highly dependent on knowledge and specialist resources, that increasingly influences the competitiveness of ‘downstream’ industries such as pharmaceuticals, crop protection or agro-food. Large firms are important but the role of SMEs for innovation and their links with universities and research centres (from which they are often spin-offs) explain some key features of this industry, namely clustering and geographic concentration.

Although some European companies are world-class, overall the innovative capacity of the European biotechnology sector remains far below the US level and the gap does not appear to be diminishing. The ratio of patents granted by the US and European Patent Offices to US and EU companies is approximately 3 to 1 and 3 to 2. US biotechnology companies also grow faster and have more new products in the pipeline than their EU counterparts⁵⁵.

These developments are largely the result of problems faced by SMEs in this field, such as long development times, strict authorisation procedures and a shortage of finance, which means that SMEs which pioneer new products and processes are often unable to ensure their marketing. As a result, instead of rapid internal growth, they have to license their patents to larger companies or accept take-over. In addition, ethical, environmental and consumer protection issues have made it difficult to establish a commonly accepted and workable legislative framework. In turn, this has made it difficult for companies to develop products and processes that can be placed on the market under predictable conditions. This in turn is affecting the competitiveness of downstream industries, first and foremost the pharmaceutical sector.

Together, these issues point to serious gaps in the policy framework for this knowledge intensive activity, which have to be addressed if it is to make its full contribution to EU competitiveness. Although the EU has recognised very early the importance of biotechnology, the policy focus was originally placed on the environment and consumer protection aspects, without directly addressing European biotechnology’s competitiveness (apart from support to R&D activities).

This was clearly insufficient to address its weaknesses, and this is the reason why the Commission has undertaken an in-depth analysis of the competitive situation of the EU

⁵⁵ These issues are also covered in the Commission’s 2001 Competitiveness Report. Patent ratios correspond to 2000 for the USPTO, and 1997 for the EPO.

biotechnology sector on the basis of studies, thorough consultation of stakeholders, and benchmarking amongst Member States and the US. These exercises led to an identification of the needs of the industry and a solid understanding of its strengths and weaknesses. The recent Action Plan on Life Sciences and Biotechnology⁵⁶ proposes an integrated and comprehensive strategy combining measures to promote competitiveness with others that seek to ensure responsible governance. It is based on an extensive consultation of stakeholders to address societal concerns. Among the main elements of the Action Plan are the following:

- Strengthening the value creation chain is essential. Biotechnology is highly knowledge- and resource-based. Strong priorities therefore are the availability of a skilled workforce, effective support for world-class research, linking centres of excellence in the European Research Area, an accessible and effective system of intellectual property protection, and sufficient availability of capital.
- Responsible governance must be ensured. Effective societal scrutiny and an ongoing public dialogue are key preconditions for biotechnology development in Europe. The dialogue must necessarily include ethical issues that are at the core of certain areas of biotechnology. A science-based, transparent, effective and proportionate regulatory framework respecting precautionary principles and appropriate information of consumers is a major requirement for establishing confidence and trust, while it should not impose unnecessary administrative burdens and obstacles to responsible innovation.
- At the international level, the EU should take a lead in the development of internationally agreed guidelines, standards and recommendations and should also ensure that developing countries, according to their policy objectives, have their share in the benefits accruing from biotechnology.

All these priorities can only be achieved by relying on a combination of instruments from different policy areas (including public health and consumer protection, internal market, environmental policy, trade policy, as well as the regulatory framework – conditions of access to the market, laws authorising or forbidding certain practices, research paths or technologies – etc.). Adequate coordination of instruments from various EU policies will therefore be essential to enhance biotechnology's competitiveness.

5. *The telecommunications sector*

Telecommunications is a sector of huge importance for the EU economy, which is characterised by a close intertwining of services and manufacturing activities. With revenues of over €300 billion it employs more than 1.5 million people. It has seen double-digit growth over the past years and is contributing to productivity growth and wealth in many parts of the economy. World-class European companies have emerged in the field of services and equipment, a majority of them having based their international expansion on a pan-European presence.

This situation is the result of a profound change in the industry over the last decade, characterised by the shift from national fixed-voice monopolies to a situation where end-users are offered a broad range of innovative services from different providers. The main factors of change have been the EU-wide liberalisation process combined with the progress in digital technologies. In addition, international trade barriers in telecommunications have been

⁵⁶ Included in the Communication from the Commission «Life Sciences and Biotechnology – A strategy for Europe» (COM (2002) 27 final)

removed to a large extent, allowing competition to take place at global level in almost all market segments.

In the field of services, the industry structure is still dominated by the former incumbent operators, but their market share have been permanently decreasing in the field of fixed services, especially in long distance and international segments. In the field of mobile services, national markets are characterised by the existence of several operators, with the market share of the leading operators below 50% in two thirds of Member States⁵⁷.

In the field of telecommunications equipment, economies of scale have led to an important concentration of the industry over the last 15 years, leaving only a handful of European players present on all product segments. However, the dramatic growth of mobile and Internet services have pushed some companies to focus on mobile technologies only while all large groups have been exposed to competition from smaller innovative companies, especially from North-America, Japan and South-East Asia.

The policy mix that has been applied in the sector is the liberalisation of the infrastructure and associated services markets based on EU competition law combined with the definition of EU-harmonised regulatory principles applied by national authorities. In addition, EU support to RTD activities in the field of information society technologies (IST) have contributed to strengthen the scientific and technological basis of European industry, encouraging it to become more competitive at international level.

However, the sector is facing problems which result from a combination of factors: the burst of the Internet bubble, the economic slowdown, and over-capacity. At the same time the mobile sector is confronted with the changeover from second to third generation (3G). High 3G licensing costs are a burden on several operators in Europe. In this context, operators have reduced their capital expenditures. As a result, European equipment have carried out large-scale job layoffs. **The competitiveness of the sector is therefore under severe pressure, pointing to the need to mobilise the available policy instruments.**

In this respect, the way forward would appear to imply stimulating demand and increasing certainty for investment. The regulatory and political initiatives that are being implemented should provide a major contribution to meeting these objectives:

- The new regulatory framework, to be implemented by Member States by July 2003, is more flexible than the existing one. It will provide greater regulatory stability and transparency, and will foster increased competition and consumer choice. The new regulatory framework will need to be fully implemented on time, and to remain stable.
- The eEurope 2005 Action Plan aims in particular to stimulate secure services, applications and content based on a widely available broadband structure. Broadband has been growing slowly up until now, but with new products and services it is expected to be one of the major growth markets for equipment manufacturers in future.
- The current Research & Development programs and related initiatives should help encourage the deployment of broadband infrastructure, including 3G, and the development of new applications by supporting, for example projects on multi-lingual content, innovative mobile payment schemes, and trials of innovative 2.5-3G services.

⁵⁷ Seventh Report on the Implementation of the Telecommunications Regulatory Package, COM(2001) 706

- In the area of e-commerce in particular, the EU's efforts to secure consumer confidence through data protection, internet security and trust in business (e-confidence) will contribute to a stable and predictable environment and enhance consumer faith in online business-to-consumer transactions – an essential precondition for a competitive market environment.