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Public-private partnerships for innovation and export development: the Irish model of development

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Abstract

The social partnership process is acknowledged by most independent observers as an important cornerstone underpinning the rapid economic growth of Ireland. It is seen as a virtuous circle in the economy between government, employers, labor, farmers and voluntary groups encompassing pay, profitability, investment, employment and tax reform. It means that all groups in Irish society have a stakeholding in economic and social progress and in the strengthening of social cohesion. The real secret behind the success of the Irish social partnership model can be summarized in one phrase – a shared understanding characterized by a problem-solving approach designed to achieve consensus.

Introduction

Prior to Ireland's EU accession in 1973, the country was one of the poorest in Europe. Today Ireland is one of the richest and most globalized countries in the world with a per capita GDP of \$55,500. The country benefited from a conjunction of favorable national and international trends that underpinned the enormous growth of the Irish economy since then. On the international front, a number of factors were important including the positive effects of the growth in global trade and the expansion of the US economy; the growth of foreign direct investment globally in the 1990s and in particular in Europe under the impetus of the Single Market; and broadly favorable exchange rate trends.

On the home front, Ireland benefited enormously from a number of factors: the results of earlier strategic decisions to abandon protectionism and embrace free trade; improve human capital and encourage inward investment into the country; the enhancement of the enterprise environment created by reform of the public finances; the improvement of infrastructure and the business environment generally; reduction in taxation; wage moderation under the series of three-year partnership agreements between Government, employers and trade unions; and finally demographic trends that ensured that labor supply did not act to limit growth potential.

The social partnership process is acknowledged by most independent observers as an important cornerstone underpinning the rapid economic growth of Ireland. It is seen as a virtuous circle in the economy between government, employers, labor, farmers and voluntary groups encompassing pay, profitability, investment, employment and tax reform. It means that all groups in Irish society have a stakeholding in economic and social progress and in the strengthening of social cohesion. The real secret behind the success of the Irish social partnership model can be summarized in one phrase – a shared understanding characterized by a problem-solving approach designed to achieve consensus.

The Irish State apparatus involved in long-term strategic planning, social cohesion, national competitiveness, attraction of FDI, indigenous industry development, export development and science, technology and innovation is a combination of Government Departments, State Agencies and Advisory Councils. These issues are all by their nature cross-cutting, interlinked and interdependent. The Irish institutional set up evolved over time into one which recognizes this interdependency and attempts to provide a complementary division of labor to give each institution its own specialist focus within an overall national strategic framework.

Of course, no one country's experience can be totally relevant to other countries, especially those from another Continent. Different historical, cultural, economic, trade and geographic contexts may make success factors in one country's experience irrelevant in another.

Nevertheless, certain success factors are universal and can be applied in any country provided the political will and resources are available to make them work. Certain 'first principles' of success can be deduced from the experience of other countries. In the case of Ireland, these are outlined in detail in the main body of this report and may be summarized as follows:

- Policy/strategy design:
 - The importance of a social partnership approach,
 - the importance of a shared understanding based on a problem-solving approach designed to achieve consensus,
 - the importance of consensus decision-making arising from *evidence-based* research,
 - the importance of having statutory bodies with clear mandates and operational independence,
 - the importance of awareness of and responsiveness to international trends,
 - development strategies should leverage areas of national competitive advantage,
 - the importance of and logic behind state support for the venture capital (VC) industry,
 - science, technology and innovation policy should recognize a global context.
- Internal organization:
 - The importance of having respected board members,
 - the importance of a Code of Practice for board members and staff of State bodies,
 - a super technical agency needs a highly educated staff,
 - continuity of a long-term national strategic vision benefits from a stable technical corp with pay comparable to the private sector,
 - a 'matrix' internal organization structure that combines sectoral and geographic expertise facilitates a more focused and effective approach.
- Coordination:
 - The importance of a collaborative networking approach,
 - Tinbergen Rule: Every major important objective in the innovation-export nexus should have a dedicated instrument/agency,
 - the value of a technically powerful centralized State agency to carry out forward-looking strategic policy analysis with direct channels to the highest levels of Government and implementing agencies.

- Implementation and oversight/evaluation:
 - Instruments for policy implementation should be transparent,
 - the importance of maintaining a focus on meeting investors' needs,
 - the importance of a mechanism to promote 'ownership' of targeted clients,
 - the importance of cost benefit analysis to show value for money to taxpayers,
 - the importance of people, ideas and partnerships in implementing innovation policy,
 - the importance of a tracking system to follow-up on the adoption and implementation of policy recommendations,
 - policy must be periodically evaluated for impact.

I. The remarkable economic transformation of Ireland

A. From poor to rich in less than one generation

In 1970, three years before Ireland's accession to the EU, the country was one of the poorest in Europe. As a small island on the Western edge of Europe flanked by much larger neighbors, its income per capita stood at €2253. As a result of economic stagnation and massive involuntary emigration over the previous one hundred years the population of the country had halved in that period to just less than 3 million people. The country had little natural resources and a tiny protected home market with virtually no modern industry.

Following the failure of protectionist policies operating in Ireland from the 1930s to the 1960s, a sense of economic crisis was pervasive in the country. By the early 1960s, the feeling was widespread that a radically different approach was needed to solve Ireland's economic problems. The need for a fundamental change in economic strategy was widely acknowledged. The crisis atmosphere put Irish politicians from all parties under severe pressure to work together to find a new way forward. This pressure resulted in the adoption of a series of new programs for economic expansion by the Government of the day whose general thrust and direction were continued over the following decades to today, regardless of which political parties were in power.

Over the three and a half decades following the 1960s the Irish

economy was transformed under the impetus of this new policy direction which saw (i) a shift from self-sufficiency to economic openness, and from the substitution of imports to the promotion of exports; (ii) the encouragement of foreign firms to set up plants in Ireland through the provision of tax incentives and grants; and (iii) the dismantling of the import tariffs and other barriers that had insulated domestic producers from international competition.

This very fundamental shift in policy completely transformed the country. The Groningen Growth and Development Center Index shows Irish GDP per capita measured in constant 1990 US dollars grew from \$3,453 in 1950 or 36.1% of the US figure to \$28,360 in 2006 or 90.8% of the US figure. In today's dollars, Irish GDP per capita has risen to \$55,500 (2006).

Because of its very strong economic growth, Ireland has become one of the highest income countries in the OECD. The Bank of Ireland 'Wealth of the Nation Report' July 2007 shows that Irish Net Wealth (household assets minus household debt) now stands at €804bn or €196,000 per capita, second among leading OECD countries. In 2006 alone the number of millionaires increased by 10% to 33,000.

B. The booming 1990s

The decade of the 1990s in particular was a period of rapid economic expansion in Ireland, driven largely by phenomenal growth in exports of manufactured goods. The OECD estimated that during the 1990s growth in Irish real GDP was over three times the US and EU averages – 6.0% per annum in Ireland compared to 1.7% for the US and 1.9% for the EU, while export growth in the same period in Ireland at 11.2% per annum was more than double the EU average of 5.5% and substantially above the US average of 6.8%.

Merchandise exports more than quadrupled in just over 10 years from €19 billion in 1991 to €90 billion in 2002 and more than 70 per cent of these exports were from high technology industries. Crucially, most of these industries are foreign owned and are the fruit of a very successful inward investment policy followed since the early 1970s.

C. The impact of FDI

The economic impact of FDI in Ireland has been and continues to be of crucial importance. Its impact is summarized in the table below showing the benefits to the economy solely from FDI companies based in Ireland.

TABLE 1
ECONOMIC IMPACT OF FDI COMPANIES BASED IN IRELAND, 2002-2005
(In billions of euros)

	€ billion 2002	€ billion 2003	€ billion 2004	€ billion 2005
Sales	71.5	72.5	73.9	77.4
Exports	67.3	68.6	69.8	73.8
Direct Expenditure in Irish Economy	15.3	15.9	15.5	14.9
Of Which:				
Payroll Costs	5.2	5.3	5.6	5.7
Irish Materials & Components	5.0	4.4	3.7	3.4
Irish Services	5.1	6.2	6.2	5.8
Direct Expenditure as % of Sales	21.4%	21.9%	21.0%	19.3%

Source: IDA Ireland Annual Report, 2006.

The added value to the Irish economy of this expenditure is estimated now to be running at over €40 billion annually.

A further indicator of the extent of the importance of FDI in the Irish economy in comparison to other countries is the high level of cumulative stock of inward FDI in Ireland relative to GDP, today estimated at \$230 billion – over five times that for developed countries and more than three times the EU average when measured as a percentage of GDP. This can be seen in the following table:

TABLE 2
CUMULATIVE STOCK OF INWARD FDI AS A PERCENTAGE OF GDP, 2005

Area	% GDP in 2005
Ireland	106
Netherlands	74
Sweden	48
Czech Republic	48
United Kingdom	37
France	28
Germany	18
Italy	12
EU Average	33
Developed Economies	21
United States	13
	2

Source: UNCTAD World Investment Report, 2006.

D. Diversification of export markets

The UK market had traditionally been Ireland's principal export market, accounting for over 75% of Irish exports in the years prior to EU accession. By 2002 the UK market had lost its position as Ireland's largest market. Today, the US is Ireland's largest single export market accounting for 20% of Irish merchandise exports; the UK accounts for 18% while the rest of the EU (excluding the UK) accounts for 44%. This dramatic change in the destination pattern of Irish exports was a direct consequence of (i) Ireland's EU accession in 1973 and (ii) the subsequent massive inward FDI into the country, especially from the US whose target markets from their Irish base were the EU and the US.

E. Concentration of exports in two sectors

The sectoral composition of Irish exports is highly concentrated, with 71.6% of total exports in 2004 coming from just two sectors –pharmacem, which includes organic chemicals and pharmaceuticals, and machinery and transport goods which includes ICT products. This level of sectoral concentration is high, even when compared to other small open economies. Only 55.7% of New Zealand's exports, 54.4% of Belgian exports and 50.7% of Dutch exports come from the two largest export categories in these countries.

Finland and Singapore are amongst the few countries that have sectorally more concentrated export sectors than Ireland, with over 73.2% and 72.7% of their exports respectively coming from their two main export sectors (Source: Forfas International Trade & Investment Report, 2005). This is largely a reflection of the fact that FDI companies located in Ireland account for over 70% of Irish exports and Ireland's concentration on these two sectors in particular in its efforts to attract FDI.

F. One of the most globalized countries in the world

Another measure of the extent of change in Ireland was shown in the 2004 AT Kearney/Foreign Policy Magazine Globalization Index which reported that for the third year in a row Ireland was the world's most globalized country. The Index annually tracks and assesses four key components of global integration, incorporating such measures as trade and financial flows, movements of people across borders, international telephone traffic, Internet usage, and participation in international treaties and peace keeping operations.

The Index attributed Ireland's position as the world's most globalized country to its deep economic links and high levels of personal contact with the rest of the world (Ireland's position in the 2006 Index had slipped to number four, behind Singapore, Switzerland the US). This in part is a reflection of the fact the Irish economy is one of the most open in the world with Irish trade (imports and exports combined) representing 85% of Irish GDP, or approximately double that of the EU as a whole, while per capita exports stand at \$29,300, one of the highest in the world.

G. Underlying causal factors

Most independent observers of the Irish economic 'Celtic Tiger' boom from the 1990s acknowledge that Ireland benefited from a conjunction of favorable national and international trends that underpinned the enormous growth of the Irish economy since then. On the international front a number of factors were important including the positive effects of the growth in global trade and the expansion of the US economy; the growth of foreign direct investment globally in the 1990s and in particular in Europe under the impetus of the Single Market; and broadly favorable exchange rate trends.

On the home front, the country benefited enormously from a number of factors: the results of earlier strategic decisions to abandon protectionism and embrace free trade; improve human capital and encourage inward investment into the country; the enhancement of the enterprise environment created by reform of the public finances; the improvement of infrastructure and the business environment generally; reduction in taxation; wage moderation under the series of three year partnership agreements between Government, employers and trade unions; and finally demographic trends that ensured that labor supply did not act to limit growth potential.

H. Special contextual features

There are a number of special contextual features of the Irish success story which are not relevant in the context of other countries around the world.

First, Ireland benefited substantially from a massive flow of capital from the EU for the first thirty years of its accession in 1973. During the period from the late 1970s to the early 1990s when EU aid to Ireland was at its highest, net transfers from the EU to Ireland are estimated to have represented 4% to 7% of Irish GDP.

Second, Ireland has a particularly young, growing and homogeneous population with 37% under the age of 25, the highest in Europe and one which grew from less than 3 million in 1960 to over 4 million today. This factor was especially important in Ireland's efforts to win FDI.

Third, Ireland is an English-speaking country and remains today the only English-speaking country within the Euro zone, a factor which also contributes to its ability to win FDI from outside the EU.

Fourth, Ireland because of its history of heavy emigration for over 100 years has ethnic links with many countries around the world. There are some 77 million people worldwide who claim Irish ethnic origin of whom about 44 million live in the US. This factor has also been an important contributor to Irish trade and investment success over a long period.

I. Ireland's future challenges

As a small, very open economy, Ireland's competitiveness, flexibility and innovation are key to its economic development. Government strategy is aimed at developing and maintaining an ever more dynamic enterprising and innovation-based economy, which can sustain higher living standards and an improved quality of life for all. Notwithstanding the country's enormous economic success story over the past decade, there are major challenges facing the country to maintain that level of success.

IDA characterizes the competition for FDI as 'relentless and global'. It believes investors now have a myriad of location options for each part of their business processes. Global corporations are seen as being able to organize and engineer their businesses in physical or virtual form and select the most effective location for each element. IDA believes they seek three essential ingredients: the right people and skills, a supportive ecosystem and infrastructure, and a positive and forward-looking attitude.

As a result, Ireland has had to re-invent its attractions for inward investment over the past decade, recognizing changes in global conditions and in Irish circumstances. The Government believes that the value of inward investment must now be judged on its nature and quality rather than on quantitative measures or job number alone, as was the case in Ireland in the 1970-2000 period. Today's desired investments are characterized by their leading edge nature, such as an Intel investment or their market innovation such as a Google investment. They are increasingly reliant on a highly skilled workforce operating in an agile, flexible and responsive environment.

II. The crucial importance of the social partnership approach in Ireland

The social partnership process is acknowledged by most independent observers as an important cornerstone underpinning the rapid economic growth of Ireland. It is seen as a virtuous circle in the economy between government, employers, labor, farmers and voluntary groups encompassing pay, profitability, investment, employment and tax reform. It means that all groups in Irish society have a stakeholding in economic and social progress and in the strengthening of social cohesion.

A. The pivotal role of the National Economic and Social Council (NESC)

The Council has been one of the most influential bodies in Ireland for almost 35 years in terms of its impact on public policy in economic and social development, notwithstanding its relatively small staff of 9 people. It was established in 1973 to analyze and report to the Prime Minister on:

- Strategic issues relating to the efficient development of the economy;
- the achievement of social justice, and
- the development of a strategic framework for the conduct of relations between the Government and the Social Partners.

1. The Council's funding, governance and structure

The NESC is funded to a level of €1.1 million out of the budget of the Prime Minister's Department and is chaired by the Secretary General of that Department. The heads of five other Government Departments also sit on the council. In addition, it contains representatives of trade unions, employers, farmers' organizations, NGOs and independent experts. The fact that the Council is chaired by the head of the Prime Minister's Department and contains the heads of five other Government Departments creates a strong degree of accountability to Government.

2. The Council's focus

The Council comments on the broad direction of Government policy in various areas. This could put the senior heads of Government Departments in a 'grey' area as their first duty is to serve their Ministers. Yet, they are members of a body that comments on policy. This potential difficulty is avoided, in part, by the fact that the Council rarely comments on contentious immediate policy issues or recent government decisions. It focuses primarily on the principles that should inform Irish policy.

3. The factors seen as important for Ireland by NESC

Successive analyses by the Council reflect a particular view of Ireland's position in the international system, the challenge of developing a small peripheral agricultural country, the dynamics of international trade and regional development and the role of the EU in creating an international system of governance. These include:

- The importance of competitiveness in a small open economy,
- the role of European integration in facilitating the development of a small peripheral region,
- the limited role of demand management and the crucial role of supply-side policies aimed at enhancing the quantity and quality of resources and capabilities – NESC argues that the main focus of policy analysis and development should be the supply-side measures that influence competitive advantage, social cohesion and societal well-being, and the creation of institutional arrangements which encourage discovery and implementation of such measures,
- the importance of specialization in high-value, high-growth, sectors in maximizing the gains from trade and integration,
- the damaging long-run effect of net emigration and the importance of increasing population and employment in Ireland,
- that technological development can make it possible for certain countries or regions to rapidly improve their position in the international economic system,
- the inter-dependence between the traded and non-traded sectors, and the importance of an efficient non-traded sector,
- the interdependence between the economic and the political and the need for a consistent set of macroeconomic, distributional and structural policies based on a shared understanding of key economic and social mechanisms,
- the importance of regional networking in strengthening competitive advantage.

4. The Council as a forum for discussions between the social partners

The Council has, for several decades, proved to be an important forum where diverse interests and organizations meet to discuss economic and social problems and their solutions. As the partnership system has developed, many other working groups have been created in which these organizations meet

each other and Government. The Department of the Prime Minister is the central node in this network of working groups and acts as the prime mover and clearinghouse for many issues.

The meetings of the Council are held in private, and no transcripts are kept. Government and the Social Partners believe this allows representatives of diverse interests to engage in relatively open and frank discussion of issues, expectations and values. Only the final, agreed, reports are published, not the drafts or background papers. This allows the wider policy community and society generally to see the final agreed rationale that underpins the Council's recommendations.

B. Evolution of the Irish partnership approach

For many years, organizations in Irish civil society have shared a commitment to develop the country—economically, socially, culturally and politically. Consequently, they have generally welcomed the opportunity to jointly analyze and discuss a range of policy challenges and have seen the Council as providing that opportunity. However, despite this willingness to discuss issues, there had for years been an insufficient appreciation of the interdependence in the economy between the public and private sectors, between the indigenous economy and the international economy, and between the economic and the political.

1. Earlier social conflicts

This lack of appreciation of the interdependence of factors contributed to periods when relations between social groups—particularly unions and employers, but also including government and farm organizations—were very strained. In the late 1970s and much of the 1980s, there were acute differences and conflict over wages, inflation, taxation and public spending.

By the late 1970s Ireland was experiencing increased economic difficulties—reflecting structural adjustment to free trade, increased need for social services, a turbulent international economy and recourse to foreign borrowing to fund both capital and current spending. During much of that time successive governments failed to achieve control of the public finances.

Throughout the period, the Council provided a significant opportunity for discussion, away from the heat of day-to-day conflict. Discussions in the Council in the late 1980s led to a greater shared understanding of key economic and social mechanisms and agreement on a more consistent policy framework. The Council's role became to frame a coherent and inter-connected perspective on Irish development, and the role of partnership in it.

In a context of deep economic, social and political crisis, the Social Partners undertook intensive discussion in NESAC and reached an agreed analysis of Ireland's situation and a strategy to escape from the vicious circle of stagnation, unemployment, emigration, rising taxes and debt. The Council's 1986 report, *A Strategy for Development*, formed the basis upon which a new government and the Social Partners negotiated the Program for National Recovery (PNR), which ran from 1987 to 1990. This was to be the first of seven agreements, so that Ireland has now had two decades of negotiated economic and social governance.

The success of this approach led NESAC to more consciously identify its role as one of analyzing of strategic policy issues, and building of consensus on these, rather than advising on specific policy measures. Under the chairmanship of the Prime Minister's office, this involved achieving a shared analysis of economic and social problems.

2. A later widening of NESAC's representation

The presence of employers, unions and agricultural members on the Council, and the diversity of their interests, largely prevented "capture" or dominance by any one of these special interests. Nevertheless, this structure still left NESAC open in the past to the accusation that it was captured by the social partners collectively, who traditionally represented producer interests.

In the context of high unemployment at the time, various social groups argued that the poor and marginalized were not represented through employers' associations, trade unions or farmers' organizations. While this argument was resisted by some, the Government decided to respond to this concern and bring the 'community and voluntary' pillar into NESC and the partnership process. This was achieved by a widening of NESC membership in the mid 1990s to include this group.

3. A shared understanding of the link between economic and social development

NESC argued that good economic performance and improved social protection do not inevitably occur together. Rather, they can be made to support each other where there is sufficient shared understanding and commitment. This depends critically on recognizing that social policy is not simply an exercise in redistributing a surplus, there to be creamed off *after* successful economic performance.

NESC proposed an alternative conceptual framework and reform program. It argued for a 'Developmental Welfare State' linking economic and social development more closely in ways suited to Ireland. It called for more investment in education, healthcare, child development and care, eldercare, housing, transport and employment services. It highlighted a number of ways in which Ireland's economic development machinery surpassed its social institutions and proposed that a life-cycle approach be adopted in planning and building the Developmental Welfare State. This distinguishes between different life-cycle cohorts—children, young adults, people of working age, pensioners and people reliant on care.

NESC's arguments have had a major impact on Irish policy makers, most recently in the 10-year Social Partnership Agreement negotiated in late 2006, Towards 2016 and in the development of the current €184 billion National Development Plan (NDP) 2007-2013. The NDP explicitly recognizes that economic and social progress are inter-dependent and allocates almost half of the total funding commitment to social infrastructure and social inclusion programs.

The NDP 2007 –2013 also adopts the life cycle approach proposed by NESC and outlined in Towards 2016. This orients public services around the needs of people at different stages of their lives – children, young adults, people of working age, older people and people with a disability. It aims to deliver the goals for each stage of the life cycle.

C. The real secret of success behind the Irish partnership model

This can be summarized in one phrase – a *shared understanding* characterized by a *problem-solving* approach designed to achieve consensus. This conclusion was not easily reached in Ireland and only came about after many years of trial and error, counter productive arguments about who was to blame for current and past failures, and finally the realization that, in a globalized world, the Irish economic 'boat' is tiny and that Irish people were all in that one tiny boat in which they could all sink together or survive together.

Over time, this *shared understanding* and *problem-solving* approach developed into a key and accepted ingredient of the partnership process. Indeed, NESC's analysis had, at times, focused on the partnership process itself. This revealed that a distinction can be made between two conceptions, or dimensions, of partnership:

- Functional interdependence, bargaining and deal making,
- solidarity, inclusiveness and participation.

Effective partnership involves both of these, but cannot be based entirely on either. To fall entirely into the first would validate the claim that the process simply reflects the power of the traditional Social Partners. To adopt only the second would risk reducing the process to a purely consultative one, in which all interests and groups merely *voiced* their views and demands.

1. An important third dimension of partnership

NESC concluded that there is an important third dimension of partnership, which transcends these two. ‘Bargaining’ or ‘negotiation’ describes a process in which each party comes with definite preferences and seeks to maximize its gains. But partnership involves the players in a process of deliberation that has the potential to shape and reshape their understanding, identity and preferences. This idea is implicit in NESC’s description of the process as ‘dependent on a shared understanding’, and ‘characterized by a problem-solving approach designed to produce consensus’. This third dimension has to be added to the first hard-headed notion of bargaining and to the second idea of solidarity to adequately capture the process.

The key to the process is the adoption of ‘a problem-solving approach’. As one experienced Irish Social Partner put it: ‘The society expects us to be problem-solving’. A notable feature of effective partnership experiments is that the partners do not debate their ultimate social visions. This problem-solving approach is a central aspect of the partnership process, and is critical to its effectiveness. It suggests that rather than being the *pre-condition* for partnership, consensus and shared understanding are more like an *outcome*.

It is a remarkable, if not easily understood, fact that deliberation, which is problem-solving and practical, produces consensus, even where there are underlying conflicts of interest, and even where there was no shared understanding at the outset. Using that approach to produce a consensus in one area, facilitates use of the same approach in other areas.

The key may lie in understanding what kind of consensus is produced when problem-solving deliberation is used. It is generally a provisional consensus to proceed with practical action, as if a certain analytical perspective was correct, while holding open the possibility of a review of goals, means and underlying analysis. The word compromise is inadequate to describe this type of agreement, since compromise so often fudges the issues that need to be addressed.

D. Summary of how the Irish social partnership works

- The partnership process involves a combination of *consultation*, *negotiation* and *bargaining*,
- the partnership process is heavily dependent on a *shared understanding* of the key mechanisms and relationships in any given policy area,
- the Government has a unique role in the partnership process. It provides the arena within which the process operates. It shares some of its authority with the Social Partners. In some parts of the wider policy process, it actively supports formation of interest organizations,
- the process reflects *interdependence* between the partners. The partnership is necessary because no party can achieve its goals without a significant degree of support from others,
- partnership is characterized by a *problem-solving* approach designed to produce consensus, in which various interest groups address joint problems,
- partnership involves *trade-offs* both between and within interest groups.

E. The impact of social partnership on Irish economic performance

The period of Social Partnership has been one of unprecedented economic success in Ireland. The country not only escaped from the deep economic, social and political crisis of the 1980s, but has significantly addressed its long-term developmental problems of emigration, unemployment, trade deficits and weak indigenous business development in three important ways:

- **Wage bargaining:** a striking feature of Irish economic performance in the period of partnership has been the enhanced profitability of business and improved industrial relations. The environment of wage moderation and high profitability has been a factor in Ireland's remarkable employment creation, attraction of inward investment and the unprecedented commercial success of indigenous companies.
- **A coherent and consistent macroeconomic policy:** partnership was an important element in Ireland's transition from a high-inflation and volatile economy to a low-inflation, stable, economy. Ireland's switch from sterling to the euro, combined with partnership, took the exchange rate, and therefore inflation, outside day-to-day party political competition and industrial relations conflict. It inoculated it from the unsuccessful combination of macro policy and income determination pursued in Britain for many years. By framing a new shared understanding, Ireland finally escaped the most negative effects of Britain's political business cycle. It is widely believed by independent commentators that social partnership is the crowning achievement of the 'Celtic Tiger economy'.
- **A supply-side mechanism:** The Irish experience suggests a close connection between settling major macroeconomic and distributional issues, on the one hand, and constructive engagement with supply-side problems, on the other. Closing-off macroeconomic alternatives freed management, union, community and government energies for discussion of real issues that impact on competitiveness and social inclusion—corporate strategy, technical change, training, working practices, the commercialization of state-owned enterprises, taxation, local re-generation, active labor market policy—and forced people to engage in realistic discussion of change.

It would clearly be inaccurate to attribute all the success of the Irish economy to social partnership. Partnership enhanced competitiveness, assisted fiscal correction, produced consensus and stability in economic policy, and increased flexibility in both public policy and enterprises. This created the context within which Ireland's long-term developmental strategy finally achieved its potential. That strategy involved heavy investment in education, particularly in information technology, attraction of inward investment and full participation in European integration.

The 'Celtic Tiger' resulted from the interaction of partnership with a set of supply-side characteristics that enhanced international competitiveness and encouraged fast economic growth. These included a young, well-educated, English-speaking workforce, improved infrastructure (funded by both the EU and the Irish state), an inflow of leading US enterprises (attracted by both Irish conditions and the deepening European market), a new population of Irish enterprises (free of the debilitating weaknesses of the past and open to new organizational patterns), and de-regulation of the service sectors (driven by the completion of the European internal market).

The completion of the European internal market was a most important factor in the recovery and re-orientation of the Irish economy. While social partnership stabilized the economy, European integration produced a steady pressure to make public utilities and services more efficient, consumer-oriented and independent of state subsidy or protection. Thus, Ireland benefited from an unusual, but benign, combination of institutionalized co-ordination of the key economic actors and pressure for market conformity.

III. A proactive state apparatus

The Irish State apparatus involved in long-term strategic planning, social cohesion, national competitiveness, attraction of FDI, indigenous industry development, export development and science, technology and innovation is a combination of Government Departments, State Agencies and Advisory Councils. These issues are all by their nature cross-cutting, interlinked and interdependent. The Irish institutional set up evolved over time into one which recognizes this interdependency and attempts to provide a complementary division of labor to give each institution its own specialist focus within an overall national strategic framework. The organizational set up in Ireland is discussed below in the context of a number of perspectives – Strategy Design, Coordination and Oversight; Implementing Agencies; and Advisory Councils.

A. Strategy design, coordination and oversight

The main front line public players in strategy design, coordination and oversight are the Department of Finance (DoF), the Department of Enterprise, Trade and Employment (DETE) and the State Agency, Forfas. Their roles are fully discussed in the Appendices and the following represents a summary of their primary roles.

1. Department of Finance (DoF)

The DoF is a Department of State within the Irish Civil Service with a budget of €111.9 million and a staff of 625 people. It reports directly to the Minister of Finance. It has a central role in implementing Government policy, in particular the Program for Government, and in advising

and supporting the Minister for Finance and the Government on the economic and financial management of the State and the overall management and development of the public sector. In formulating this advice the DoF is guided by its mission, which is:

'to promote a growing economy which will deliver a high level of sustainable employment, social progress and living standards.'

The DoF is responsible for the administration of the public finance of Ireland and the collection and expenditure of the revenues of the country from whatever source. It has a number of other functions which are principally to promote and coordinate economic and social planning, including sectoral and regional planning, to identify development policies, to review the methods adopted by departments of state to implement such policies and generally to advise the government on economic and social planning matters.

a) Strategic priorities of the DoF

The DoF endeavors to strike the right balance between taxation, investment in infrastructure, improved delivery of public services and the maintenance of sustainable debt levels. In its Strategy Statement 2005-2007 the Department identified seven strategic priorities:

- i. To support sustainable growth and employment creation, social progress and improved living standards through the formulation of appropriate economic and budgetary policies,
- ii. to maximize delivery of the Government's economic and social objectives through the development and management of effective taxation and public expenditure policies,
- iii. to develop policies that continue to promote Ireland's interests at EU and international level and which support social and economic progress within the EU,
- iv. to promote the effective regulation of the financial services sector;
- v. to promote and implement policies in relation to incomes, with particular reference to the public service, which take account of the financial position of the Exchequer and which promote competitiveness and the delivery of better public services,
- vi. to support and improve public service management and in that context to facilitate the effective implementation of the program of decentralization, and
- vii. to provide an efficient, high quality service to its customers in line with the standards and targets set out in the DoF's Customer Service Action Plan and Customer Charter.

The DoF takes the view that the continued success of the Irish economy rests primarily on maintaining Irish competitiveness and continued rising levels of educational attainment. This requires that pay levels across all sectors develop in accordance with the needs of the economy as a whole, that public expenditure and taxation develop at a sustainable rate, and that inflation is kept at a level close to the EU average. The DoF also believes that this requires that a high priority is given to investment in infrastructure and human capital while meeting key social priorities.

The DoF now attempts to measure the actual outcomes of its programs by means of a series of Output Statements related to its strategic priorities and 2007 is the first year in which this has been tried in relation to the DoF Strategy Statement 2005-2007. The main inputs and outputs related to the DoF high-level strategic priorities and their implementing programs are outlined in detail in the Appendices:

b) Government policy integration and coordination

The DoF has found that the work of Government is becoming increasingly integrated, where progress in one sector is often dependent on progress in other areas. Through its strategic priorities and structures it endeavors to ensure that these cross-sectoral issues are addressed and that its advice to the Minister of Finance and the Government takes account of the broad picture and its implications for the economy as a whole.

To that end, the DoF interacts with virtually every other Department and State Agency on a daily basis. This is necessary in order to create as far as possible a common understanding of goals to be achieved. A number of arrangements are in place to assist the DoF in aligning its activities with other Departments and State Agencies, including:

- Participation by senior officials of the DoF in the work of Cabinet committees and on numerous interdepartmental committees and working groups, dealing with a wide range of public policy issues,
- ongoing consultation with Departments on public expenditure management, both current and capital, program reviews, administrative budgets, staffing, budgetary projections and related developments,
- regular communication with the Department of the Taoiseach (Prime Minister) and other Departments on public service modernization (including the Management Information Framework, eGovernment and human resource management), pay and related matters,
- in consultation with Departments, promoting where appropriate the identification and consideration of cross-cutting issues,
- in consultation with Departments, ongoing oversight and coordination of the National Development Plan 2007-2013,
- the day-to-day provision of guidance and advice to Departments on a range of issues, including human resource management, information technology, organizational change, civil service accounting and training and development,
- the creation of a number of dedicated units to facilitate service-wide coordination of a range of public policy matters, including Freedom of Information, public service modernization, decentralization, equality and diversity, actuarial support, financial management and procurement management reform (including e-procurement), and
- the operation of several networks to facilitate the timely discussion of issues of mutual interest or concern. These networks include Secretaries General of Departments, Assistant Secretaries, HR Managers, ICT Managers, Procurement Managers, MIF Managers, Decentralization Liaison Officers and Training Officers.

The DoF also seeks to promote the partnership process as a vehicle for improving the design and delivery of services. Its Departmental Partnership Committee monitors the DoF staff training and development program and suggests further ways to strengthen staff skills in working closely with other Governmental Departments and State Agencies.

c) Major achievements

The DoF is credited with having made a major contribution in the context of National Wage Agreements and their contribution to the maintenance of industrial peace in Ireland. The importance of industrial peace was recognized by the Department. Stable industrial relations were considered vital to bring benefits such as uninterrupted services, improved productivity, staff morale and increased public confidence. It was also considered to be very important in the context of maintaining Ireland's image as a desirable place for foreign direct investment (FDI).

To this end, the State, led by the Department of Finance, has over the years, built up a wide range of institutions and processes, including the Benchmarking Process for public servants, to help resolve disputes and avoid industrial action and strikes. The Labor Relations Commission (LRC) seeks to resolve disputes through conciliation while the Labor Court (LC) has a role in adjudicating on disputes referred to it. There is separate industrial relations machinery for civil servants, teachers, defense forces and Gardai (police). These groups do not have access to the Labor Relations Commission or the Labor

Court but have schemes of conciliation and arbitration which are comparable to the industrial relations machinery available to other groups.

e) The DoF and the National Development Plan

The DoF is responsible for drawing up and subsequent monitoring of the implementation of Ireland's National Development Plans. The current €184 billion National Development Plan 2007-2013 '*Transforming Ireland – A Better Quality of Life for All*' is the largest and most ambitious investment plan ever proposed for the country. It is more than three times larger than the previous €57 billion National Development Plan 2000-2006 and is funded almost exclusively from domestic resources, the vast bulk of it from the Central Exchequer. The new seven-year plan provides:

- €54.6 billion for investment in economic infrastructure,
- €49.6 billion for social inclusion measures (children, people with disabilities and others,)
- €33.6 billion for social infrastructure (housing, health, justice, etc.),
- €25.8 billion for human capital (schools, training, higher education, etc.),
- €20.0 billion for enterprise, science and innovation.

The DoF through the NDP explicitly recognizes that economic and social progress are inter-dependent and allocates almost half of the total funding commitment to social infrastructure and social inclusion programs. It also acknowledges the importance of an integrated "whole of Government" approach and of ensuring value for money for the taxpayer in the implementation of the plan. As well as providing the physical infrastructure to support progress, a major focus of the NDP is on investment in education, science, technology and innovation. This is seen as key to Ireland's future development.

2. Department of Enterprise, Trade and Employment (DETE)

The DETE is one of the most important Ministries of State within the Irish governmental system. It has a budget of €1.355 billion and a staff of 1,000. Its primary focus has always been on trade and industry issues and its mandate has broadened in more recent years to encompass labor, science and technology, competition and consumer affairs.

DETE has a Mission Statement as follows:

"We will work for Government and the people to grow quality employment and national competitiveness."

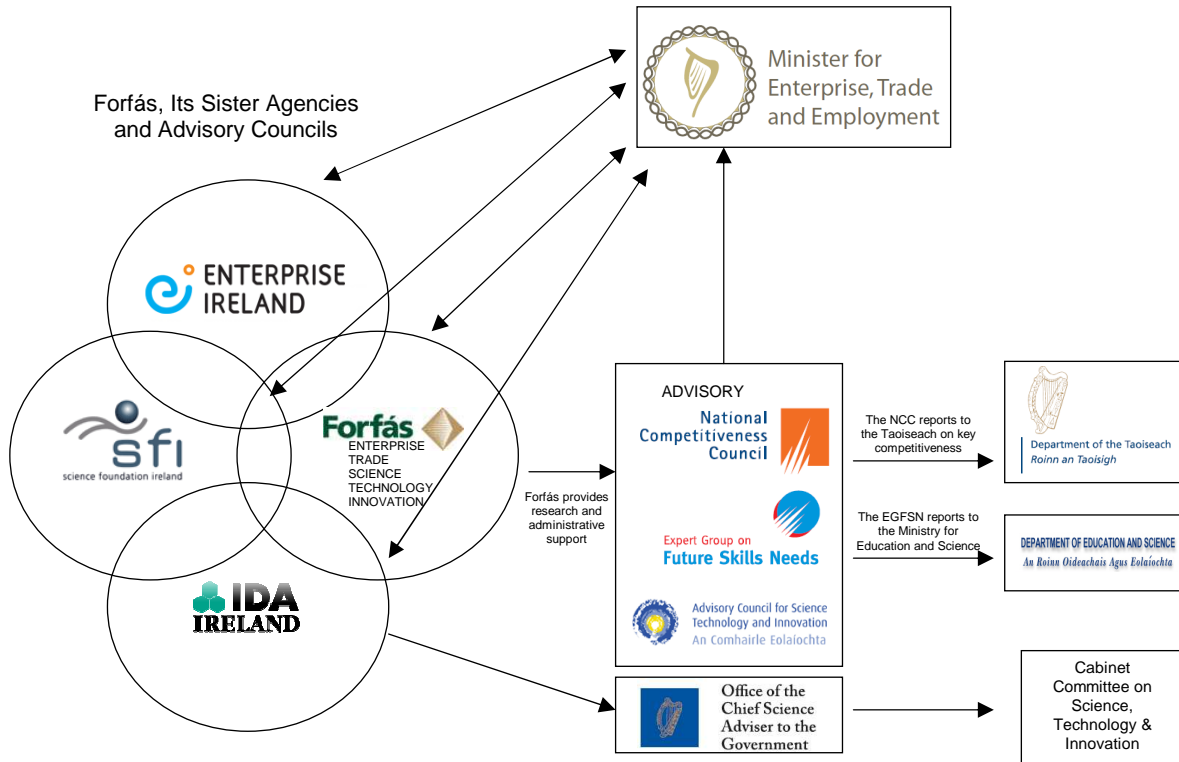
DETE's policies are designed to enhance competitiveness, help create an environment where enterprise can flourish and consumers are protected, upskill the labor force, provide sustainable employment opportunities, improve workplace conditions, and help to build an inclusive society. DETE sets out a set of core values for dealing with its stakeholders (Government, Parliament, members of the public, public and private organizations and its staff) which include:

- Fairness & Respect,
- Openness & Transparency,
- Flexibility & Responsiveness,
- Partnership & Consultation,
- Responsibility,
- Motivation & Performance,
- Service,

- Professionalism.

DETE has overall policy responsibility for a wide range of offices/agencies and state-sponsored bodies including Forfas, IDA-Ireland, Enterprise Ireland and Science Foundation Ireland.

FIGURE 1
DETE AND ITS RELATIONSHIP WITH THE IRISH DEVELOPMENT AGENCIES



Source: Forfas Annual Report, 2005.

DETE is now in the third year of implementing its Strategy 2005-2007. In this strategy the Department noted that Ireland's recent economic performance had undoubtedly been very positive. However, it drew attention to potentially worrying trends in wage levels, the costs of other inputs and rising prices. These were seen to impact negatively on Ireland's international competitiveness and have the potential to affect the longer term sustainability of Irish economic growth. In the four years to May 2004, the average cost of Irish goods and services increased by over a fifth relative to Ireland's major trading partners. In real terms, Irish wages increased by over 12% between 1998 and 2003, compared with 4% for the eurozone as a whole. However, balanced against this, Ireland's productivity increased by 3.1% for the same period compared to productivity gains in the US (2.5%), the UK (1.9%) and Germany (1.6%).

DETE considered the danger to be that shorter term cost competitiveness pressures would prejudice Ireland's ability to reap the dividend from more medium to long term actions. It pointed out that fortunately, despite cost increases, employment growth in the economy as a whole had remained robust. It felt policies needed to underpin continued employment growth in the economy. Addressing cost competitiveness pressures had to complement longer-term structural reforms focused on improving productivity levels.

a) DETE's Enterprise and Agencies Division

This Division's role is to manage the system of supports provided via the development agencies to enterprise, and to ensure that the funds devoted to this task are used efficiently and effectively in the development of competitive advantage at firm level leading to sustainable employment generation. Other areas which contribute to the overall mission of the Division are State Aids and Standards. The role of the Division in relation to State Aids is to ensure the compliance of DETE's industrial development schemes with EU State Aid Rules and assist other Departments of State to achieve compliance in relation to their schemes.

The Enterprise Agencies Unit within the Division is responsible for ensuring that the industrial development agencies/bodies under its remit deliver an efficient and effective service to their respective clients on a value for money basis and the agencies/bodies listed below work to facilitate and promote the development of Irish industry:

- Enterprise Ireland - the State-body statutorily charged with assisting the development of indigenous companies in the manufacturing and internationally trade service,
- IDA Ireland – the state-body statutorily charged with the attraction and development of overseas industry to and within Ireland,
- Shannon Development - the regional economic development company statutorily responsible for industrial, tourism and rural development in the Shannon region,
- Crafts Council of Ireland – the body responsible for promoting and assisting the development of Irish Craft,
- Forfas - the national policy and advisory board for enterprise, science, technology and innovation.

The Unit of 15 staff provides the necessary administrative support to enable these agencies/bodies fulfill their mandate. The Unit's functions include funding of the agencies and contributing to enterprise policy development. In the year 2006 the Unit oversaw a total budget of circa €324 million in respect of funding to the various agencies. The agencies/bodies employ a total of circa 1,600 staff, working both in Ireland and abroad.

Based on this analysis the DETE strategy 2005-2007 set out its activities aligned along four pillars as follows:

- i. Pillar One: Enterprise, Innovation, Growth
- ii. Pillar Two: Quality Work and Learning
- iii. Pillar Three: Making Markets and Regulation Work Better
- iv. Pillar Four: Business Delivery, Modernization and Customer Focus

As one of the most open economies in the world, Ireland's ability to supply goods and services to international markets is essential to the country's continued economic success. However, in recent years Ireland's competitive position was eroded, due mainly to increasing domestic costs and the appreciation of the Euro. As a small, open economy Ireland is vulnerable to adverse international trends. In the short term, DETE views the potential risks to competitiveness and continued employment growth as:

- The possibility that global economic growth might not be sustained,
- further appreciation of the Euro or further rises in commodity prices and, in particular, oil prices,
- that increasing competition from abroad could give rise to job losses particularly if pay increases were to exceed the levels negotiated between the social partners in the most recent Partnership Agreement.

3. The central role of Forfas

Forfas, the Irish Government's strategic planning Agency for enterprise development and science, technology and innovation, is at the centre of a range of intermediate stakeholders in these fields. It has a staff of 120 and an operational budget of €15.1 million. Forfas benefits by sitting between the policy-making functions of the State, the business community, the higher education system and the enterprise development agencies.

The Agency's close relationship with all these stakeholders is crucial in facilitating a shared understanding of the key drivers of growth and competitiveness. Forfas, its sister promotional agencies and its associated councils represent an interlinked networked web of key stakeholders in Irish society with active participation from representatives of key Government Ministries (especially the Department of Finance, Department of Enterprise, Trade and Employment and the Department of Education and Science), State Promotional Agencies, Private Sector Business (both FDI and Indigenous), Labor and Academia.

a) The social partners are represented

Representatives of the Social Partnership between Government, Business and Labor all have the opportunity to influence policy making at a very senior level. They do this through their membership of the Boards of Forfas, the Industrial Development Agency (IDA), Enterprise Ireland (EI) and Science Foundation Ireland (SFI) as well as membership of three advisory councils –the National Competitiveness Council (NCC), the Expert Group on Future Skills Needs (EGFSN) and the Advisory Council for Science, Technology and Innovation (ACSTI).

In addition to the links at the level of Board or Council membership, Forfas also has the power to second staff to the other development agencies for specific purposes and does so on a regular basis. A great benefit of this web-like structure is a much more holistic approach to policy making than would otherwise be possible.

b) Decisions flow in a functional manner

Ireland's matrix of Ministries, Agencies and Advisory Councils forms a comprehensive and complementary division of labor that functionally supports the development and execution of Government policies on competitiveness, enterprise development, science, technology and innovation and export development. One thing that stands out in this structure is the formation of a network where knowledge and decisions flow in a functional manner.

Forfas and its sister agencies represent a hub around which collaboration is fostered among indigenous and foreign companies in Ireland, industrial associations, labor, scientists and the universities, all with a view to stimulate investment, export development and innovation.

c) A collaborative networking approach

Forfas uses a collaborative networking approach with the Department of Enterprise, Trade and Employment (DETE) and its sister agencies and advisory bodies to put forward coherent and dynamic enterprise development policies. Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis and benchmarking techniques are employed and discussed with other stakeholders to identify Ireland's competitive challenges, constraints and opportunities. Research is conducted and discussed with stakeholders to identify and promote emerging opportunities in niche areas and technologies.

A pro-active team approach between the private sector, academia, labor and the Government is seen as vital to ensure that joined-up policies are designed and implemented. Forfas co-ordinates the Enterprise Development agencies that play a critical role in the creation of networks of enterprise and trade associations, universities, innovation and technology centers that provide the infrastructure for information sharing, co-operation and innovation in different industries in Ireland.

d) Consensus decision-making based on *evidence-based* research

The Forfas Board and Associated Councils operate on the basis of consensus decision-making arising from *evidence-based* research put before them by the staff. Although the Chairman has a casting vote, it is rarely, if ever, used. Staff carry out exhaustive research on the issue at hand with all options for action thoroughly explored. They put forward rational arguments based on all the available evidence and research for the course of action being recommended. This *evidence-based* approach is most important and tends to lessen the likelihood of contentious debate and facilitates decision-making based on consensus.

e) A strong upwards and downwards influence on public policy

The Forfas approach of consensus decision-making based on *evidence-based* research also contributes to the Agency having a very strong influence on public policy in Ireland. The Agency is recognized as *the* authority for the generation of forward looking public policy advice in the inter-related areas of competitiveness, enterprise development, innovation, attraction of FDI and export development. Its advice *flows up* to the highest levels of Government through:

- The Minister of Enterprise, Trade and Employment (via that Department),
- its technical support to the National Competitiveness Council (NCC), which reports to the Prime Minister,
- the Expert Group on Future Skills Needs (EGFSN), which reports to both the Minister for Enterprise, Trade and Employment and the Minister for Education and Science),
- the Office of Chief Scientific Adviser, which reports to a Cabinet Sub Committee on Science, Technology and Innovation, and
- the Advisory Council on Science, Technology and Innovation (ACSTI).

Meanwhile, Forfas policy advice *flows down* to policy instruments and action through its coordination, technical support, budget advice and monitoring of dedicated line promotional agencies – Industrial Development Agency (IDA), Enterprise Ireland (EI), and Science Foundation Ireland (SFI).

B. Implementing agencies

The three primary implementing agencies are:

- IDA-Ireland,
- Enterprise Ireland (EI),
- Science Foundation Ireland (SFI).

1. Industrial Development Agency (IDA) - Ireland

IDA Ireland is an autonomous state sponsored agency responsible for the attraction of Foreign Direct Investment (FDI) to Ireland. It has a Mission Statement as follows:

“We will win for Ireland, its people and its regions, the best in international innovation and investment so as to contribute to the continued transformation of Ireland to a world-leading society which is rich in creativity, learning and personal and social well-being.

We will work in partnerships with other organizations to enhance the best of Irish capabilities and talents and match them to the best of global investment. We will carry out our mission with integrity, professional excellence and responsiveness to all with whom we work or are in contact”

The Agency's total expenditure in 2005 was €150m of which €8m (58%) was on grants to industry and €36m (24%) was on Promotion, Administration and General Expenses. The agency employs 170 staff and reports to the Minister for Enterprise, Trade and Employment.

As part of the effort to win FDI, the Industrial Development Act of 1969 established the IDA as the primary agency to foster industrial development (at that time both foreign and indigenous) in the country. With Ireland's accession to the European Economic Community (now the European Union) in 1973 the country was in a position to offer investors duty-free access to the European market. Armed with this benefit and with a tax incentive of zero tax on export profits until 1990 IDA began to achieve a high degree of success in attracting FDI into the country, particularly from the United States.

Despite this initial success in winning FDI, debates about the direction of enterprise policy were inevitably influenced by the fluctuations in the fortunes of the Irish economy. Though even in the 1970s and 1980s the enterprise sector did not perform particularly badly in comparative terms, its employment performance fell far short of the need presented by rapid workforce growth and high levels of unemployment. The severe economic and employment difficulties of the period led to searching assessments of enterprise strategy, and in particular of the emphasis on foreign investment and the provision of extensive tax incentives and grants. A review of Industrial Policy was carried out for the National Economic and Social Council (NESCC) by the Telesis Consultancy Group and published in 1982.

This study concluded that with few exceptions, foreign-owned firms in Ireland were manufacturing satellites that did not embody the key competitive activities of the businesses in which they were involved; did not employ significant numbers of skilled workers; and generated relatively little downstream activity among domestic sub-supply firms. The report was critical of existing policies for indigenous industries, particularly the provision of re-equipment grants and the excessive willingness on the part of the industrial development agencies (including IDA) to encourage the establishment of large numbers of firms lacking the scale to become viable. The report recommended that a more selective approach should be taken to the attraction of foreign industry and that there should be a shift in emphasis towards building up strong indigenous companies in export and sub-supply activities. It proposed that the share of the industrial development budget devoted to indigenous companies should rise from 40 per cent at the start of the 1980s to 75 per cent by 1990.

Though the Government did not accept all elements of the Telesis report, it endorsed the need for greater emphasis on the development of indigenous industry. The Government followed up with the Industrial Development Act of 1986 which put in place a new statutory framework for enterprise support and the enterprise development agencies. From the mid-1980s, a number of steps were taken to give greater support to indigenous industry and to promote the integration of foreign firms with the domestic economy. These included:

- 1985 – National Linkage Programme established to develop a strong competitive sub-supply base in Ireland to maximize local purchases of Irish raw materials, components and services by overseas firms based in Ireland.
- 1988 – IDA re-organized to give separate divisions responsibility for foreign and indigenous firms.
- 1988 – IDA policy statement indicates that the proportion of resources devoted to domestic industry would increase from 40 to 50 per cent.

In 1991, an expert group, known as the Culliton Group, was appointed by the Government to review and make recommendations on industrial policy in Ireland and on public policy generally as it effected industrial development. The Group was made up of Irish experts from both the private and public sectors. Central to the Group's thinking was the view that industrial policy should go beyond a narrow concern with grants, tax incentives, and the role of the industrial development agencies to consider the broad range of factors affecting the environment for enterprise. The Culliton Review Group made a number of wide-ranging recommendations to strengthen the environment for enterprise including:

- A systematic programme should be undertaken to lower the cost and improve the quality of infrastructure and public utilities –telecommunications, energy, roads and ports– through additional investment and greater competition,
- there should be a fundamental reform of the tax system, including the ‘oppressive and unfair’ personal income tax system,
- there should be a refocusing of the educational system to give greater priority to the acquisition of usable and marketable skills and to reduce the bias towards the liberal arts and the traditional professions.

The Review Group also considered a number of more specific issues affecting enterprise policy. It concluded that, despite the undoubted benefits from foreign direct investment, the attraction of overseas firms to Ireland would not provide a sufficient basis for the development of the kind of strong national advantage in advanced industries necessary to sustain high levels of employment and income. The view was taken that industrial growth through dependent branch plants of foreign firms would only take Ireland a limited way towards achieving these goals. Though Irish firms were considered more likely to be better integrated into the Irish economy than foreign firms, the degree to which a company undertook core business functions from an Irish base, rather than simply origin of ownership, should in future be the critical distinction for policy purposes.

The Culliton Group’s main recommendations on enterprise development policy and the enterprise development agencies included:

- The grant-aid budget for internationally mobile investment should be squeezed further even at the risk of losing costlier projects.
- The 10 per cent corporation tax rate (the zero tax on export profits was changed to 10 per cent on all profits in 1981) had been more valuable to foreign-owned than to Irish-owned industry. No indication should be given of any continuance of the rate beyond its 2010 expiry and the range of activities to which it applied should not be extended.
- Among indigenous firms, the widespread availability of grants had encouraged a ‘hand-out’ mentality, instead of fostering the market-led, production-oriented enterprise that was needed. There should be a decisive shift away from grants for indigenous industry in favor of an expansion of the equity and venture capital activities of the State agencies.
- In assessing which sectors should be accorded priority in the future, the industrial development agencies should be guided by the desirability of fostering clusters of related industries which could build upon leverage points of national advantage, such as in the food sector. A change was needed from the existing over-emphasis on high-tech sectors such as electronics and pharmaceuticals, neither of which built on pre-existing Irish strengths and national advantages.
- The industrial development agencies should be restructured with one body devoted to the attraction of internationally mobile investment and a second charged with the development of indigenous industry.

The Culliton Group’s analysis and prescriptions had considerable influence on policy developments in a range of areas such as the increased investment in infrastructure and human capital under the National Development Plan 1994-1999, the re-organization of the industrial development agencies, and the greater emphasis placed by the agencies on repayable forms of financial support. The Government did not accept the recommendations on limiting the long-term commitment to low rates of corporation tax.

Following the Culliton Report, the Government enacted the Industrial Development Act of 1993 which re-organized the enterprise agencies into three different bodies – IDA-Ireland for foreign industry only, Forbairt (later renamed Enterprise Ireland) for indigenous industry and Forfas as the enterprise

agency strategic planning, advisory and co-ordination body. In 2003, a fourth agency, Science Foundation Ireland (SFI), was created to foster research and innovation in Ireland.

a) Importance of FDI in Ireland

The following tables illustrate the huge impact of FDI in Ireland in terms of exports, employment and expenditure in the Irish economy or spillover effects. Note these figures represent only foreign companies in Ireland as IDA has no responsibility for indigenous companies:

TABLE 3
FDI IMPACT IN IRELAND, FOREIGN COMPANIES
(In billions of euros)

	€ billion	€ billion	€ billion	€ billion
	2002	2003	2004	2005
Sales	71.5	72.5	73.9	77.4
Exports	67.3	68.6	69.8	73.8
Direct Expenditure in Irish Economy	15.3	15.9	15.5	14.9
Of Which:				
Payroll Costs	5.2	5.3	5.6	5.7
Irish Materials & Components	5.0	4.4	3.7	3.4
Irish Services	5.1	6.2	6.2	5.8
Direct Expenditure as % of Sales	21.4%	21.9%	21.0%	19.3%

Source: IDA Ireland Annual Report 2006.

As can be seen from this table, the spectacular growth of foreign-owned industry in the 1990s contributed to a substantial increase in the volume of their spending on Irish goods and services, and, in consequence, in their impact on the rest of the economy.

By the year 2000, the expenditure of foreign-owned firms on Irish goods and services totaled €11.8 billion. The spending in Ireland of overseas manufacturing firms based in Ireland exceeded that of Irish owned firms for the first time in that year. Since then the level of MNC companies in Ireland expenditure on Irish goods and services has risen to €14.9billion.

Despite the steady increase in the number of new jobs created in recent years, the total number of jobs in IDA supported companies has remained relatively static. This reflects the fact that job losses have also been rising in some years in IDA supported companies as some lower value added activities have been moved to lower cost locations mainly in Eastern Europe, China and India. The following table shows the net job creation picture over the same period:

TABLE 4
NET JOB CREATION. 2002-2005

	2002	2003	2004	2005
New Jobs Filled	10 926	9 336	11 740	12 623
Job Losses	15 073	12 980	10 988	9 211
Net Jobs	-4, 47	-3 644	+752	+3 412
Total Employment in IDA Companies	132 208	128 564	129 316	132 728

Source: Author.

Another indicator of the extent of the importance of FDI in the Irish economy in comparison to other countries is the high level of cumulative stock of inward FDI in Ireland relative to GDP. This can clearly be seen in the following table from the UNCTAD World Investment Report, 2006:

TABLE 5
CUMULATIVE STOCK OF INWARD FDI AS A PERCENTAGE OF GDP, 2005

Area	% GDP in 2005
Ireland	106
Netherlands	74
Sweden	48
Czech Republic	48
United Kingdom	37
France	28
Germany	18
Italy	12
EU Average	33
Developed Economies	21
United States	13
	2

Source: UNCTAD World Investment Report, 2006.

The effect of Ireland's proportionately large volume of FDI can also be seen in the unusually high difference in Ireland's case between GDP and GNP. This difference is mainly made up of the repatriation of profits from Ireland of foreign companies based in the country, currently running at a level of some €25 billion. The following table shows Irish GDP and GNP in recent years with the gap between them being a close proxy for repatriated profits:

TABLE 6
GDP AND GNP IN IRELAND, 2002-2005

€ Billion	2002	2003	2004	2005
GDP Value	129.9	138.9	147.6	161.2
GNP Value	106.2	117.2	124.4	135.9
Difference	23.7	21.7	23.2	25.3

Source: Author.

Some would argue that the country is much too dependent on foreign investment and that indigenous industry should play a much more important role. This is to ignore the reality of the low level and weak state of indigenous industry in Ireland at the time the decision was made to open up the Irish economy and to aggressively pursue inward investment. It also ignores the beneficial impact of FDI in Ireland in terms of improved productivity, introduction of new technologies as well as modern management techniques, the upgrading over time of hundreds of Irish SMEs who became sub-suppliers to MNCs in Ireland and as a result gained credibility in international markets; and finally the contribution of some €2.5 billion annually in corporation taxes paid by MNCs in Ireland on the profits made from their Irish operations.

b) The future challenges facing Ireland in attracting FDI

IDA recognizes that as a small, very open economy, Ireland's competitiveness, flexibility and innovation are key to its economic development. Government strategy is aimed at developing and maintaining an ever more dynamic enterprising and innovation-based economy, which can sustain higher living standards and an improved quality of life for all. Notwithstanding the country's enormous economic success story over the past decade, there are major challenges facing the country to maintain that level of success. IDA characterizes the competition for FDI as 'relentless and global'. It believes investors now have a myriad of location options for each part of their business processes. Global corporations are seen as being able to organize and engineer their businesses in physical or virtual form and select the most effective location for each element. IDA believes they seek three essential ingredients: the right people and skills, a supportive ecosystem and infrastructure, and a positive and forward-looking attitude.

As a result, Ireland has had to re-invent its attractions for inward investment over the past decade, recognizing changes in global conditions and in Irish circumstances. IDA believes that the value of inward investment must now be judged on its nature and quality rather than on its quantitative measures or job number alone, as was the case in Ireland in the 1970-2000 period. Today's desired investments are characterized by their leading edge nature, such as an Intel investment or their market innovation such as a Google investment. They are increasingly reliant on a highly skilled workforce operating in an agile, flexible and responsive environment.

2. Enterprise Ireland (EI)

EI is the government agency responsible for the development of Irish-owned enterprise and for inward investment from overseas in the area of food and natural resources (all other areas of FDI are handled by IDA-Ireland). Its core mission is to accelerate the development of world-class Irish companies to achieve strong positions in world markets resulting in increased national and regional prosperity. The Agency has a staff of 912 and expenditure of €244.8m in 2006 which was spent on financial support to industry (53%), administration, promotion and other expenses (47%). It reports to the Minister for Enterprise, Trade and Employment.

EI has around 3,300 client companies on its books. On average it works with around 800 on an intensive basis over the course of one year and others intermittently as required. These companies fall into three main categories:

- Manufacturing and internationally traded services companies employing ten or more people (and with a focus on exporting),
- innovation-led start-ups with the potential to grow on international markets (and entrepreneurs with the ability to initiate projects that can compete in international markets),
- Irish-based food and natural resource companies that are overseas owned or controlled.

The agency works intensively with companies both individually and in sectoral groups to help them exploit market opportunities and to drive their innovation and internationalization capabilities. Ultimately the objective is to ensure EI companies are productive and competitive enough to grow export market share.

EI's Development Advisors (DAs) are the primary point of contact for client companies. Each DA has a portfolio of companies in the different sectoral division within EI. The number of companies for which a DA is responsible varies with the sector and with the mix of companies in his/her portfolio in terms of development potential. However, typically a DA would be expected to be able to service 18-20 companies in any given year. This normally translates into a range whereby the lower growth potential companies may only require 1-3 man days of time in a year while the higher growth potential companies may consume 20+ man days of time a year.

EI operates five major programs to achieve its objectives (details may be found in the Appendices):

- Program 1: Achieving Export Sales,
- Program 2: Investing in Research and Innovation,
- Program 3: Competing Through Productivity,
- Program 4: Starting Up and Scaling Up,
- Program 5: Driving Regional Enterprise.

a) Contribution of EI-supported companies to the Irish economy

EI supported companies make a significant contribution to the Irish economy spending over €16 billion on payroll and Irish sourced goods and services and exporting €10.7 billion. In 2006 EI approved €112.5 million to client companies and infrastructural clients (Community Enterprise Centers, Business Innovation Centers and Universities). This funding went towards specific company and enterprise development projects aimed at investment in commercialization of research, applied and collaborative R&D, productivity improvement projects, training and management development and export development.

b) Collaboration with other stakeholders

EI works closely with Forfas to carry out regular sectoral strategy analysis to understand the external competitive forces operating in particular sectors and their implications for Irish companies. It discusses its findings with business and industry trade groups to ascertain the strengths, weaknesses, opportunities and threats facing Irish industry.

EI is an active partner in the partnership approach used by its parent body Forfas to foster economic growth. A pro-active team approach between the private sector, academia, labor and the Government is seen as vital to ensure joined-up policies are designed and implemented. EI has designated powers and as such, in terms of its strategic and corporate planning, has independence to form such alliances. However, the Agency takes full account of national policies to ensure its strategies are aligned. It works closely with Forfas in terms of that Agency's work in providing policy advice to DETE to ensure the specific needs of indigenous industry are articulated.

EI undertakes exercises to support, review and map out new strategies in its area of competence. It usually does this by means of organizing meetings amongst relevant stakeholders. An example of this is the agency's work with the Irish food industry. The food industry in Ireland is a major priority for EI, given its scale and impact on the economy and its potential for future growth. The industry in Ireland is in transition, with new sectors emerging that reflect lifestyle changes and consumer trends, particularly in relation to health and wellness. Innovation, market-led products and higher value products are seen as the key requirements for Irish companies that want to grow in this business. EI works closely with the Irish Department of Agriculture and Food, the Irish Fisheries Board, the Irish Food Board and the Irish Agricultural Institute to support client companies to innovate and develop higher value added, market-led products.

In working with individual companies, a key priority for the agency is to develop a strong partnership with the industry to realize overall targets for the sector. Joint initiatives to develop sector specific strategies and agendas are accompanied by tailored programs of activities in sales, marketing, research and development, competitiveness and management development.

c) EI performance measurement

Most independent observers in Ireland would recognize that the overall balance for the work done by EI is very positive. The agency is currently operating to a three-year plan set out in its strategy: Transforming Irish Industry 2005 – 2007 which sets out a number of key objectives to be achieved over the three year period with good progress made in the first year of the plan (2005).

Achievements - Performance against Targets:

- €3 billion in new export sales by year-end 2007: €1.275 billion was achieved in 2005.

- Increase to 596 the number of firms engaged in meaningful R&D (€100,000+) by 2007: 515 companies are now engaged in meaningful R&D.
- Increase to 42 the number of firms engaged in significant R&D (€2 million+) by 2007: 33 companies are now engaged in significant R&D.
- Support the creation of 210 new high potential start-up companies nationwide by year-end 2007: there were 75 new start-ups in 2005.
- Drive export readiness by implementing Productivity and Competitiveness Improvement Projects in 300+ firms by year-end 2007: projects were funded in 39 companies in the last two quarters of 2005, following the launch of the Productivity Improvement Fund.

The agency has been criticized in the past for a mismatch between its strategy and structure and for being more focused on measuring activity rather than impact and outcomes. It is now widely recognized in Ireland that what is now needed are companies in high value knowledge intensive activities that can support high value jobs at relatively high wage rates.

In response to this challenge, EI has in the past two years completely re-configured its strategy and organizational structure. The new strategy and future focus of the agency will assist key Irish industry groups to compete and grow by developing their capabilities in internationalization; research, innovation and technology; competitiveness and management capability. To implement its new strategy the agency has moved from a cellular to a matrix structure in order to better meet market requirements and to be more adaptable, innovative and responsive to client needs.

In response to criticisms in a DETE review of its overseas office network, EI overseas offices now report to a centralized International Sales and Partnering Division, where the staff are aligned on a sectoral basis with their counterparts in Ireland to enhance customer support and teamwork. The agency is now increasingly more focused on measuring inputs and outputs and effectiveness rather than activities.

3. Science Foundation Ireland (SFI)

a) Background

Because of the strong growth of the Irish economy in the 1990s it has become one of the highest income countries in the world. Hence, one traditional incentive for inward investment – a low cost economy – is no longer available and the other major plank of Ireland’s attractiveness – low tax rates – is being adopted by competitors in Eastern Europe and elsewhere. Addressing this threat to national competitiveness became a major policy issue in Ireland in the late 1990s.

Against that background the Irish Council for Science, Technology and Innovation (ICSTI) undertook a ‘Technology Foresight’ exercise in 1998. Dozens of leaders in government, academia, and industry assessed the Irish economy, from pharmaceuticals to life sciences, from transportation to manufacturing. The process involved a large number of ‘scenario-building’ workshops which asked, how might these areas evolve over the long term?

The subsequent report concluded that Ireland should evolve rapidly to a knowledge society. The enormous potential of new technologies in areas such as computer science, telecommunications, nanotechnology, biotechnology and medical systems should be exploited. It identified technology as a key driver for knowledge societies and showed that Ireland lacked a world class research capability of sufficient scale in a number of strategic areas. It called for a dramatic increase in the level of research investment to address this gap as a matter of urgency.

The ICSTI Technology Foresight report *inter alia* specifically asked government to establish a fund which would enable Ireland to become a centre for world class research excellence in niche areas of ICT, biotechnology and their underlying sciences. Without such a research capability to support the technology-

based industries, which now accounted for more than two thirds of manufacturing output in Ireland, it would be impossible to sustain the momentum built up by the inward investment policy. Ireland would gradually lose its comparative attractiveness for manufacturing industry and the basis of its export led growth in the 1990s.

The ICSTI recommendation was accepted by Forfas, which then widened the overall approach and agreed a joint proposal to government within the Department of Enterprise, Trade and Employment (DETE). This argued that investing in basic research is an activity undertaken by all developed countries for cultural, educational, scientific and economic development reasons. Resource constraints had inhibited such investment in Ireland in the past. One serious consequence was a continuing loss to the country of the best graduates and academic faculty through emigration, so that the Irish universities were unable to realize fully their potential. The improved economic climate provided an opportunity to rectify this situation, one which had to be taken.

The argument for strategic research funding was made to Cabinet in February 2000 by representatives of ICSTI, Forfas and officials of DETE. The government responded actively and promptly to these proposals by establishing a *Technology Foresight Fund* of over €646 million for the seven year period of the National Development Plan 2000-2006. It accepted that such a research fund was necessary (i) to develop world-class research capabilities in strategic technologies to underpin the future development and competitiveness of Irish owned industry, (ii) to facilitate the undertaking of R&D in Ireland by MNCs in order to support the further development of that sector in Ireland, (iii) to attract more high technology companies to Ireland in the future, and (iv) to enhance the environment for the creation of new technology-based firms.

The government also approved the establishment of a '*National Strategic Research Foundation*' to undertake and support strategic research of world class status in key areas of scientific endeavor including niche areas of ICT and of biotechnology. It set up an Advisory Group on implementation to progress this foundation.

The Advisory Group reported in July 2000 and recommended the establishment of Science Foundation Ireland (SFI) to administer the *Technology Foresight Fund* of over €646 million. It confirmed that SFI should fund programs of research that would meet the tests of world class excellence determined by competitive international peer review. Structures would need to be put in place to help SFI in the recycling of the proceeds of the exploitation of intellectual property rights arising from the work supported by the Foundation. This reflected the expectation that the research supported would have strategic relevance to the economy.

SFI was established in 2000 and became operational in 2001. It started out as a sub-board of Forfas to administer the Fund and in July 2003 it became a separate legal entity when it was established on a statutory basis under the Industrial Development (Science Foundation Ireland) Act, 2003 and became a third agency of Forfas.

b) SFI Today

SFI's total expenditure in 2005 was €129.2m of which €122m (95%) was on research grants and €7.0m (5%) was on Administration and General Expenses. It has a staff of 36 full time permanent people and reports to the Minister for Enterprise, Trade and Employment.

SFI provides grants for researchers from around the world who wish to relocate to Ireland and those already based in Ireland, for outstanding research visitors, for conferences and symposia, and for collaboration with industry. It chooses award recipients in the fields underpinning biosciences and bioengineering and ICT through merit review by distinguished scientists. SFI has a flexible grants and awards portfolio and several times a year issues calls for proposals from scientists and engineers. It also accepts unsolicited proposals throughout the year. Some calls for research proposals have a time deadline for submission of proposals while others have a 'rolling' call without a time deadline.

From its foundation to March, 2006 SFI had awarded funding commitments amounting to over €550 million for 831 projects which employ around 1,200 individuals, research teams, centers, and visiting researchers. The award recipients include outstanding researchers carrying out research in Ireland, and these come from Ireland, Australia, Belgium, Canada, Chile, England, Germany, Japan, Russia, Scotland, Slovakia, South Africa, Switzerland and the USA.

SFI has, over the past two years, increased its oversight activity in relation to existing funded projects by recruiting very experienced scientific technical staff members for this purpose. At the project level, every SFI funded project is required to have a progress report submitted to SFI one year after commencement of the project and annually thereafter. The reports are read by SFI programme officers and followed up where necessary. Approximately mid-way through the funding cycle all major projects are subject to an external peer review visit. The review report is used by SFI to make any necessary adjustments to the project in collaboration with the research leader.

c) SFI is different from other Irish development agencies

SFI differs from its sister development agencies in a number of important respects. SFI deals exclusively with the Universities and other third level educational establishments whereas both IDA and Enterprise Ireland deal directly with companies and individual R&D projects. Further, all of SFI's calls for research are international and the quality of research funded is exclusively measured by an International Peer Review process. Finally, almost all of SFI's funding is directed at people rather than at physical assets or infrastructure. Only in a small number of cases where investment in infrastructure is a key element of the research proposal does SFI fund capital spending.

SFI's vision is that through strategic investments in the people, ideas and partnerships essential to outstanding research in strategic areas, the agency will help build in Ireland research of globally recognized excellence and nationally significant economic importance. Its mission is to build and strengthen scientific and engineering research and its infrastructures in the areas of greatest strategic value to Ireland's long-term competitiveness and development.

SFI provides awards to support scientists and engineers working in biotechnology and ICT development. It uses an international merit review process to choose far-reaching, high-impact research for support in its target areas and to fund excellent scientists and engineers working on the dynamic intellectual frontiers of biotechnology and ICT.

d) Economic benefit to Ireland

A core principle of the Irish model is that investments in Higher Education research translates into economic benefit for the country. This happens through the absorption of PhD and postdoctoral researchers into the enterprise sector and through the commercialization of Higher Education research. The members of the various participating groups meet regularly to address cross cutting issues in the Research/Enterprise space such as:

- Analysis of links between the research portfolio and enterprise needs,
- technology Assessment and other priority setting mechanisms and their role in prioritization of research investments,
- oversight of the Higher Education, Research and Enterprise linkages,
- oversight of enterprise demand for advanced researchers and flows of such researchers from the Higher Education bodies and other Public Research Organizations to enterprise.

e) A combination of competition and collaboration

Science, Technology and Innovation policy is recognized in Ireland as operating in a global context with mobility of researchers playing an important part. Excellence at the individual level alone is not seen as being sufficient but needs to be backed up by critical mass in research teams. Increasingly, it is thought, this will require a combination of competition and collaboration among and between firms and institutions both within Ireland and between Ireland and overseas partners.

The processes that lead to technological innovations are seen as exceedingly complex with firms rarely innovating in isolation. Increasing importance is now attached to interactions with other firms and with Higher Education Institutes or public research organizations. The belief is that the ultimate result

of these interactions will be increased levels of expenditure on innovation. As part of its strategy SFI is attempting to develop and strengthen such networks.

f) Achieving a balance between individual excellence and critical mass

The Technology Foresight exercise prioritized ICT and Biotechnology as the two key areas in which Ireland should concentrate its research efforts. Over the life of the strategy it was recognized that a better understanding of how the balance between individual excellence and coherence/critical mass is evolving. The methodology being used is to take a portfolio overview of existing and planned future research investments.

This overview takes account of quality and critical mass in the portfolio, the applications time horizons of the research (long, medium and short) and its relevance to Ireland's existing and future economic and social development. The broad based portfolio analysis approach will be supplemented by more detailed exercises focused on specific areas of science and technology.

g) SFI performance measurement

SFI has defined a range of Metrics of Success which apply to SFI grants only but which are increasingly being viewed as good national indicators as well. SFI is currently looking for a suitable mechanism to have them adopted fully as national indicators. It is implementing a tracking system which assesses the impact that SFI has on Ireland's strengths in the following dimensions within the chosen fields for research:

- Number of researchers in Ireland employed in the underpinning disciplines, including principal investigators, research fellows, postdoctoral researchers, and postgraduate students,
- number of articles published in refereed international science journals,
- number of patents and licenses filed by researchers,
- number of commercial start-ups and multinational and indigenous industrial R&D investments considered valuable to the research infrastructure,
- breadth and number of Irish scientists and engineers who have earned membership in elective international academic societies associated with the key disciplines.

C. Advisory councils

- National Economic and Social Council (NESC),
- National Competitiveness Council (NCC),
- Expert Group on Future Skills Needs (EGFSN),
- Advisory Council for Science, Technology and Innovation (ACSTI).

National Economic and Social Council – covered in detail above under Social Partnership, see section 'The Pivotal Role of the NESC'.

1. National Competitiveness Council (NCC)

The NCC is a social partnership body which reports to the Taoiseach (Prime Minister) on key competitiveness issues facing the Irish economy together with recommendations on policy actions required to enhance Ireland's competitiveness position. It has a membership of 16 representatives from Government (4), the Private Sector (8), Academia (2) and Labor (2).

Each year the NCC publishes a two-volume Annual Competitiveness Report. Volume One, *Benchmarking Ireland's Performance*, is a collection of statistical indicators of Ireland's competitiveness performance in relation to 16 other economies and the OECD and EU averages. Volume Two, *Ireland's*

Competitiveness Challenge, uses this information along with the latest research to outline the main challenges to Ireland's competitiveness and the policy responses required to meet them.

The NCC reports are highly influential in the Irish system because NCC is a social partnership body independent of politics and therefore represents a consensus across a broad spectrum of Irish society. Politicians are very much aware of this aspect and that its reports are founded on an evidence-based research approach carrying high credibility with the media and public.

2. Expert Group on Future Skills Needs (EGFSN)

The EGFSN was established in 1997 to advise the Government on aspects of education and training related to the future skills requirements of the enterprise sector of the Irish economy. It is composed of 10 members and 6 advisers. The 10 members are from the Private Sector (6), Academia (2) and Labor (2). The 6 advisers are all from Government – one each from the Department of Finance, Department of Enterprise, Trade and Employment and the Department of Education and Science and one each from Forfas, the Higher Education Authority and the State Training Authority.

The EGFSN mandate is jointly agreed by the Minister for Education and Science and the Minister for Enterprise, Trade and Employment and it reports to both Ministers. It carries out studies into the supply and demand for skills into individual business/industrial sectors and, through its reports, puts forward its recommendations for averting any anticipated mismatches.

An example of its recommendations being turned into policy is its recommendation in 2005 that a National Skill Bulletin be published annually to provide a detailed overview of the Irish labor market. This was accepted by government and is now published annually and combines a range of statistics on employment and vacancies and describes current trends in the labor market from an economy-wide view to occupational level. It particularly highlights areas of labor and skill shortages.

3. Advisory Council for Science, Technology and Innovation (ACSTI)

The ACSTI was established in April 2005 under Forfas legislation and is the Irish Government's high-level advisory body on Science, Technology and Innovation (STI) policy issues. It has 12 members - from Academia (7), Government (2) and the Private Sector (3). It serves as the primary interface between stakeholders and policymakers in the STI arena. The Council's remit is to contribute to the development and delivery of a coherent and effective national strategy for STI and to provide advice to Government on medium and long-term policy for STI and related matters.

The Council provides its advice to the Government via an Inter Departmental Committee on STI under an annual work program agreed between the Inter Departmental Committee and the Chief Scientific Adviser. The Inter Departmental Committee is Chaired by the Department of Enterprise, Trade and Employment (DETE) with one representative each from the Prime Minister's Office, Department of Finance, Department of Education and Science, Department of Health, Department of the Environment, Department of Agriculture and the Department of Communications, Marine and Natural Resources.

ACSTI plays a key role in assuring a "joined-up Government" approach to science governance in Ireland. The Council's work program is implemented through the establishment of Task Forces that bring forward draft recommendations on agreed priority topics for ratification by the Council. The Council's secretariat and research support is provided by Forfas.

IV. “First principles” of success

A. Policy/strategy design

1. Principle: the importance of a social partnership approach

Example: Forfas produced a Report on Social Partnership (1999). This report identified the importance of the social partnership process in contributing to the rapid economic growth of Ireland over the previous ten years. It was seen as a virtuous circle in the economy between government, employers and labor encompassing pay, profitability, investment, employment and tax reform and the cornerstone of Irish economic transformation over the previous decade. It emphasized the importance of continuing the social partnership approach whereby all groups in Irish society have a stake holding in continued economic and social progress and in the strengthening of social cohesion.

Forfas, its sister promotional agencies and its associated councils represent an interlinked networked web of key stakeholders in Irish society with active participation from representatives of key Government Ministries, State Promotional Agencies, Private Sector Business (both FDI and Indigenous), Labor and Academia. Representatives of the Social Partnership between Government, Business and Labor all have the opportunity to influence policy making at a very senior level through their membership of the Boards of Forfas, IDA, EI and SFI as well as membership of the four advisory councils NESAC, NCC, EGFSN and ACSTI. In addition to the links at the level of Board or Council membership.

Forfas also has the power to second staff to the other development agencies for specific purposes and does so on a regular basis. A great benefit of this web-like structure is a much more holistic approach to policy making than would otherwise be possible.

Forfas is at the centre of a range of intermediate stakeholders in the enterprise development and science and technology communities. It benefits by sitting between the policy making functions of the State, the business community, the higher education systems and the enterprise development agencies. The agency's close relationship with all these stakeholders is crucial in facilitating a shared understanding of the key drivers of growth and competitiveness.

2. Principle: the importance of a shared understanding based on a problem-solving approach designed to achieve consensus

Example: Ireland recognized that good economic performance and improved social protection do not inevitably occur together. Rather, they are inter-dependent and can be made to support each other where there is sufficient shared understanding and commitment. This can be summarized in one phrase – a *shared understanding* characterized by a *problem-solving* approach designed to achieve consensus. This conclusion was not easily reached in Ireland and only came about after many years of trial and error, counter productive arguments about who was to blame for current and past failures. Finally, the realization sunk in that, in a globalized world, the Irish economic 'boat' is tiny and that Irish people were all in that one tiny boat in which they could all sink together or survive together. Over time, this *shared understanding* and *problem-solving* approach developed into a key and accepted ingredient of the partnership process.

'Bargaining' or 'negotiation' describes a process in which each party comes with definite preferences and seeks to maximize its gains. But *partnership* involves the players in a process of deliberation that has the potential to shape and reshape their understanding, identity and preferences. A notable feature of effective partnership is that the partners do not debate their ultimate social visions. This problem-solving approach is a central aspect of the partnership process, and is critical to its effectiveness. It suggests that rather than being the *pre-condition* for partnership, consensus and shared understanding are more like an *outcome*.

It is a remarkable, if not easily understood, fact that deliberation, which is problem-solving and practical, produces consensus, even where there are underlying conflicts of interest, and even where there was no shared understanding at the outset. Using that approach to produce a consensus in one area, facilitates use of the same approach in other areas. The key may lie in understanding what kind of consensus is produced when problem-solving deliberation is used. It is generally a provisional consensus to proceed with practical action, as if a certain analytical perspective was correct, while holding open the possibility of a review of goals, means and underlying analysis. The word compromise is inadequate to describe this type of agreement, since compromise so often fudges the issues that need to be addressed.

3. Principle: the importance of consensus decision-making arising from evidence-based research

Example: the Forfas Board and Associated Councils operate on the basis of consensus decision-making arising from *evidence-based* research put before them by the staff. Although the Chairman has a casting vote, it is rarely, if ever, used. Exhaustive research is carried out by the staff on the issue at hand with all options for action thoroughly explored. Rational arguments based on all the available evidence and research are put forward for the course of action being recommended. This *evidence-based* approach is most important and tends to lessen the likelihood of contentious debate and facilitates decision-making based on consensus.

4. Principle: the importance of having statutory bodies with clear mandates and operational independence

Example: the Irish State Agencies share a most important common feature that contributes significantly to their success. Forfas, IDA, EI and SFI all have a statutory status that defines a clear mandate for their operation.

Successive Irish Governments have taken the view that if a separate State Agency is set up to do a specific job, it should have a clear mandate, defined targets with accountability for delivery, ability to hire professional staff, be adequately funded to be able to do the job properly and have a high degree of operational independence without undue political interference in its day to day operations. Government can still maintain control in that Board and Management have accepted responsibility for delivering the required results and in the event of failure the Government has the ultimate sanction of replacing the Board and Management as it sees fit.

5. Principle: the importance of awareness of and responsiveness to international trends

Example: IDA has over the years developed a mechanism to continually monitor international trends in FDI and tailored its approach in response to those trends. For example, during the 1980s the increasing importance of international services in FDI was noticed and IDA extended its fiscal and grant incentives to include services where previously only manufacturing activities qualified for support. Further, the later trend in FDI towards lower cost countries such as China, India and Eastern Europe spurred IDA to re-orient its marketing activities towards higher value added manufacturing and service activities where education, training and productivity are seen as more important than cost.

6. Principle: development strategies should leverage areas of national competitive advantage

Example: after many years of attempting to attract investment regardless of sector, the Irish State Investment Promotion Agencies came to realize the value of a more focused approach involving the identification of niche sectors in which Ireland could provide sustainable long-term competitive advantage both for domestic as well as FDI companies. Detailed studies were undertaken by Forfas and IDA in particular to identify the sectors and sub-sectors of industry and services in which Ireland could articulate and demonstrate a basis for international competitive advantage. The exercise also involved identification of sectors not existing in Ireland but which had the potential to be attracted provided infrastructural ‘gaps’ or weaknesses in Ireland could be eliminated.

During the 1990s this resulted in the identification of four main sectors on which Ireland decided to concentrate its efforts over the long-term. Key requirements were that sectors chosen had to be high growth and high value added, the latter because of the availability of large numbers of well educated people in Ireland who had traditionally emigrated due to lack of job opportunities at home. The sectors chosen were and continue to be ICT, Healthcare (Pharmaceuticals and Medical Devices), Financial/Internationally Traded Services and Biotechnology. The approach taken was to build clusters of these sub-sectors within the country with linkage programs to sub-supply companies and educational and research facilities. This approach has proved to be spectacularly successful in Ireland’s case with strong clusters of domestic and international companies exporting from the country today in these sectors.

7. Principle: the importance of and logic behind state support for the Venture Capital (VC) industry

Example: State support for the VC industry was first provided in Ireland in 1994, and the purpose of this support was to address a perceived market failure whereby SMEs were having difficulties in raising equity capital. The first program of State support for VC funds, the 1994-99 Seed and Venture Capital Program (part of the 1994-99 Operational Program for Industrial Development) set out to address this market failure by tackling the following objectives:

- Make available equity and seed capital to SMEs, particularly those in the knowledge economy,
- develop the seed and VC market in Ireland,
- encourage private sector participation in seed and venture funds,

- develop seed and venture fund management skills within Ireland.

From the outset, the first Seed and Venture Capital Program identified the VC industry as a particularly important tool for funding high potential, high-tech companies. In the context of VC, State intervention was therefore provided on the basis that the private sector on its own would not provide equity capital for high risk, but high growth companies, and the State could therefore address this “market failure” by committing capital to VC funds and thereby encouraging the private sector to participate in sharing the risk.

The logic for support under the 2000-06 Seed and Venture Capital Program has broadly followed the same rationale. A dynamic VC industry is seen as a key element in business development, with the private sector being the primary source of equity for companies. If the indigenous sector is to continue to grow and prosper, a continual flow of good high potential start-up and development companies is seen as vital to that growth (for more details of how this works in Ireland see the Appendices under Enterprise Ireland).

8. Principle: science, technology and innovation policy should recognize a global context

Example: Science, Technology and Innovation policy is recognized in Ireland as operating in a global context with mobility of researchers playing an important part. Excellence at the individual level alone is not seen as being sufficient but needs to be backed up by critical mass in research teams. Increasingly, it is thought, this will require a combination of competition and collaboration among and between firms and institutions both within Ireland and between Ireland and overseas partners.

The processes that lead to technological innovations are seen as exceedingly complex with firms rarely innovating in isolation. Increasing importance is now attached to interactions with other firms and with Higher Education Institutes or public research organizations. The belief is that the ultimate result of these interactions will be increased levels of expenditure on innovation. As part of its strategy SFI is attempting to develop and strengthen such networks (for more details of how this operates in Ireland see the Appendices under Science Foundation Ireland (SFI)).

B. Internal organization

1. Principle: the importance of having respected board members

Example: the Board of Directors of Forfas, other State Enterprise Development Agencies and members of Advisory Councils all are distinguished high level actors in the private and public sectors which ensures that their decisions and policy recommendations carry political weight. Board members and members of associated councils are appointed by the Minister of Enterprise, Trade and Employment for their experience and ability. These individuals do not represent their companies but are there in a personal capacity.

Board/Council members are not paid any fees but have their traveling expenses reimbursed. Most serve from a sense of patriotic duty but also benefit from the prestige associated with being a Board member of Forfas or a Council member of one of its associated organizations.

2. Principle: the importance of a code of practice for board members and staff of state bodies

Example: the Code of Practice for the Governance of State Bodies in Ireland requires each State Body to develop a Code of Business Conduct for Board Directors. This Code of Business Conduct sets out in written form the agreed standards of principle and practice which inform the conduct of the Board. This is mainly aimed to ensure that Board members operate to an agreed high standard of ethical principles, ensure a high degree of honesty and integrity, preserve confidentiality of sensitive materials and prevent conflicts of interest. In addition, employees must also abide by a Code of Business Conduct. The

Chairman of the Board is required each year to confirm to the Minister for Enterprise Trade and Employment that appropriate procedures and controls are in place and are being adhered to.

3. Principle: a super technical agency needs a highly educated staff

Example: virtually all of Forfas staff are graduates with the majority of technical professionals having a minimum of a Masters Degree. Staff qualifications reflect the nature of the work in each Division. For example, the largest Division is the Competitiveness Division with 20 technical staff who are mainly economists. The Science, Technology and Innovation Policy and Awareness Division has 18 staff mainly post-graduates with Science and Technology qualifications. The Enterprise Policy and Corporate Services Division has 13 technical staff mainly with post-graduate business qualifications.

4. Principle: continuity of a long-term national strategic vision benefits from a stable technical corp with pay comparable to the private sector

Example: Forfas staff are permanent staff members carrying the same status as members of the Civil Service. Although this is the case, management does have more independence and flexibility of operation than staff in line Ministries. This manifests itself in less restrictive recruitment practices and more freedom to hire external experts as consultants. Pay is competitive with similar functions in the private sector. In a recent job announcement for Forfas there were 100 applicants notwithstanding full employment in the economy.

5. Principle: a 'matrix' internal organization structure that combines sectoral and geographic expertise facilitates a more focused and effective approach

Example 1: the IDA internal structure is a matrix system combining sectoral and geographic elements and in practice this combination facilitates a more targeted and focused approach to its marketing efforts. For example, the Executive Director responsible for overseas marketing has a Manager for North America (four offices – New York, Chicago, San Jose and Atlanta), Europe (three offices – London, Frankfurt and Amsterdam) and the Far East (five offices – Tokyo, Seoul, Taipei, Shanghai and Sydney). Within these offices staff carry responsibility for marketing Ireland as an investment location to particular product sectors.

Within Ireland IDA has a network of 10 regional offices with responsibility for the identification of infrastructural gaps in their regions and for providing services for new and existing foreign investors in their regions. The IDA Executive Director for Operations has a number of Managers responsible for target sectors such as ICT, Healthcare, Globally Traded Services and Financial Services. These units work in close collaboration with IDA overseas offices to target individual companies and also with the IDA regional office network in the country to attract these investors to particular regions within Ireland.

Example 2: Enterprise Ireland (EI) has been criticized in the past for a mismatch between its strategy and structure and for being more focused on measuring activity rather than impact and outcomes. It is now widely recognized in Ireland that what is now needed are companies in high value knowledge intensive activities that can support high value jobs at relatively high wage rates. In response to this challenge, EI has in the past two years completely re-configured its strategy and organizational structure. The new strategy and future focus of the agency will assist key Irish industry groups to compete and grow by developing their capabilities in internationalization; research, innovation and technology; competitiveness and management capability.

To implement its new strategy the agency has moved from a cellular to a matrix structure in order to better meet market requirements and to be more adaptable, innovative and responsive to client needs. In response to criticisms in a DETE review of its overseas office network, EI overseas offices now report to a centralized International Sales and Partnering Division, where the staff are aligned on a sectoral

basis with their counterparts in Ireland to enhance customer support and teamwork. The agency is now increasingly more focused on measuring inputs and outputs and effectiveness rather than activities.

C. Coordination

1. Principle: the importance of a collaborative networking approach

Example 1: Forfas uses a collaborative networking approach with the Department of Enterprise, Trade and Employment and its sister agencies and advisory bodies to put forward coherent and dynamic enterprise development policies. Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis and benchmarking techniques are employed and discussed with other stakeholders to identify Ireland's competitive challenges, constraints and opportunities. Research is conducted and discussed with stakeholders to identify and promote emerging opportunities in niche areas and technologies.

A pro-active team approach between the private sector, academia, labor and the Government is seen as vital to ensure joined-up policies are designed and implemented. Forfas co-ordinates the Enterprise Development agencies that play a critical role in the creation of networks of enterprise and trade associations, universities, innovation and technology centers that provide the infrastructure for information sharing, co-operation and innovation in different industries in Ireland.

Example 2: Enterprise Ireland (EI) works with some 220 organizations around the country to drive a shared vision for enterprise development at local level. This co-operation helps identify the current and future environmental and infrastructural needs of key sectors. These organizations include: Business Innovation Centers; County and City Enterprise Boards; Regional Assemblies; Business Incubation Centers; Regional Authorities; Local Authorities; Third-Level Groups; Chambers of Commerce; and Task Forces.

2. Principle – Tinbergen rule: every major important objective in the innovation-export nexus should have a dedicated instrument/agency

Example: Ireland's matrix of ministries, state agencies and councils forms a comprehensive division of labor functionally supporting major aspects of competitiveness, social partnership, attraction of FDI, SME development, science, technology and innovation and export development. This structure enables knowledge and decisions to flow in a functional manner. Forfas and its sister agencies and councils represent a hub around which collaboration is fostered among a wide range of stake holders, local and foreign entrepreneurs, industrial associations, labor, scientists and the universities, all with a view to stimulate innovation and industrial and export development.

3. Principle: the value of a technically powerful centralized state agency to carry out *forward-looking* strategic policy analysis with direct channels to the highest levels of government and implementing agencies

Example: in Forfas, Ireland has a dedicated central government technical agency for generating forward looking public policy advice on the interrelated issues of competitiveness, innovation, enterprise development, attraction of investment and export development. That advice *flows up* to the highest levels of government through its administrative link to DETE, its technical support to the NCC (which responds to the Prime Minister), the EGFSN (which reports to DETE and the Minister of Education and Science), Office of Chief Scientific Adviser (which reports to a Cabinet Sub Committee on Science, Technology and Innovation on policy matters and reports to Forfas on budgetary and administration matters) and the ACSTI (provides its advice to the Government via an Inter Departmental Committee on STI under an annual work program agreed between the Inter Departmental Committee and the Chief Scientific Adviser).

Meanwhile, Forfas policy advice *flows down* to policy instruments and action through its coordination, technical support, budget advice and monitoring of dedicated line promotional agencies (IDA, EI, SFI).

Forfas connects with stakeholders through its high level presence on the public-private boards of agencies and on councils in its mandated areas of work. That presence is achieved through regular meetings of boards of Forfas and sister agencies (roughly 10 times a year) and of councils (roughly 5 times a year), coupled with its institutional role of providing technical support and monitoring/evaluation mechanisms.

D. Implementation and oversight/evaluation

1. Principle: instruments for policy implementation should be transparent

Example: Ireland maintains an open and transparent system of application, assessment, approval and transfer of fiscal and grant incentives, permits, planning permissions and regulatory approvals. State promotional and regulatory authorities are required to publish on their websites details of procedures and application forms. Appeals procedures exist for unsuccessful applicants. Tough legislation exists to ensure transparency and high ethical standards. Where corruption is suspected public Tribunals of Enquiry take place to expose the guilty and impose heavy fines and/or prison. In recent years some very high profile politicians and public officials have been subject to these Tribunals of Enquiry and exposed for corrupt practices.

2. Principle: the importance of maintaining a focus on meeting investors' needs

Example: IDA maintains a strong belief that one of the keys to its success is its constant focus on meeting investors' needs. IDA is in regular and ongoing contact with senior decision makers both at corporate Head Office as well as with local management of subsidiary operations in Ireland. The purpose of this dialogue and interaction is to discover what investors are looking for in locations in order to grow their businesses, including market access, the costs and quality of infrastructure, labor, capital and governmental incentives for investment.

This 'information loop' is very important in informing IDA and the Government generally about potential weaknesses or gaps in the Irish ability to supply the developing needs of both existing foreign investors in Ireland as well as potential new first-time investors from overseas. This methodology facilitates the anticipation of market demand for FDI and enables steps to be taken in advance to help to position Ireland as a credible investment location for new kinds of FDI as they emerge.

3. Principle: the importance of a mechanism to promote 'ownership' of targeted clients

Example: IDA achieves this objective through its procedures for account management. IDA project executives have personal account responsibility for up to 20 named FDI investors each. This portfolio management approach of a limited number of companies per executive means that IDA executives can focus their energies and attention on a manageable number of client companies and be responsible for monitoring their investment and ongoing performance in Ireland. Any weaknesses or shortfalls in the ability of the country to meet investor needs is flagged to senior management for action through the policy advocacy role of IDA to Government.

4. Principle: the importance of cost benefit analysis to show value for money to taxpayers

Example: Forfas uses cost benefit analysis techniques to evaluate the benefits to the Irish economy of incentives given to enterprises both foreign and indigenous. The direct cost to the State by way of grants, tax incentives and investment promotion expenditure is weighed against measured benefits in terms of job creation, increased exports, more direct and indirect taxes, less unemployment benefits etc usually over a 7-year measurement period to demonstrate the cost/benefit impact to Irish taxpayers. Every project proposed for State financial assistance must have a cost/benefit analysis attached as part of its project evaluation and assessment. The cost benefit analysis exercise provides ongoing sustainability for the investment promotion effort year in and year out.

5. Principle: the importance of people, ideas and partnerships in implementing innovation policy

Example: in Ireland, Science Foundation Ireland (SFI) has found harnessing a combination of people, ideas and partnerships is a powerful way to be successful in implementing Innovation Policy:

- **People:** SFI considers that research and development depend above all else on the talent, ideas and energies of outstanding individuals. SFI builds programs, funds educational initiatives, provides resources and supports infrastructure that enables Ireland to educate, develop, recruit and retain outstanding, internationally competitive scientists and engineers pursuing research in areas compatible with Ireland's ambitions for leadership in a knowledge-based economy.
- **Ideas:** SFI believes that innovation requires bold ideas, creative vision, a passion for achievement, and the highest levels of rigor and discipline. SFI seeks out and supports individuals and ideas with the greatest potential to bring lasting excellence to research and innovation within Ireland.
- **Partnerships:** SFI takes the view that effective research and development requires a combination of resources and talent to drive ideas forward rapidly. The agency seeks out and supports effective collaborations and partnerships with agencies, institutions and industry in Ireland and around the world that can best advance Ireland's research, technological and economic competitiveness.

6. Principle: the importance of a tracking system to follow-up on the adoption and implementation of policy recommendations

Example: the effectiveness of Forfas was greatly enhanced when it introduced a system to track progress in implementing its policy recommendations. The process of media scrutiny and academic review is highly transparent and this factor alone means that public monitoring and evaluation is a continuous and on-going activity. In addition, Forfas maintains an internal mechanism to track the status of all of its policy recommendations and identifies and follows up the organizations responsible for implementation of individual recommendations. This mechanism operates by means of the requirement that one year after the Forfas Board approves a research report, the executive responsible for the report must return to update the Board on progress made on the report's recommendations.

7. Principle: policy must be periodically evaluated for impact

Example 1: Forfas not only monitors implementation of policy but also is charged with evaluating the impact against anticipated outcomes. The ex-post evaluation carried out by Forfas establishes whether the recommendations were implemented and attempts to establish what the impacts were measured against anticipated outcomes. In practice, it is very difficult to establish direct cause and effect relationships between the work of Forfas and economic outcomes as there are so many factors at work. However, since its establishment in 1994 Forfas has had many of its major policy initiatives adopted and implemented by successive Irish Governments. Examples that stand out include:

- Setting the Information Society Agenda and having the Information Society Commission established,
- the adoption of a single Irish Corporate Tax Rate of 12.5% for all activities,
- the creation of thousands of extra ICT places in the Irish education system in advance of the Dot Com boom,
- the adoption of Awareness Campaigns by the Government on the importance of the issue of competitiveness,
- the establishment of Science Foundation Ireland,
- the acceptance by Government of Forfas priorities for the adoption of new technologies for the future,
- the establishment of a National Consumer Agency in Ireland.

Example 2: the Industrial Development Act of 1993 provides for the preparation of triennial reviews of industrial performance and policy. Since then, triennial reviews have been carried out - *Shaping our Future* Forfas (1996), *Enterprise 2010* (Forfas 2000), *Review of Industrial Performance and Policy*, Department of Enterprise, Trade and Employment (2003) and *Ahead of the Curve*, Enterprise Strategy Group for the Department of Enterprise, Trade and Employment (2006). These reports contain a detailed analysis of the main facets of enterprise performance in Ireland over the years since 1993.

Example 3: Science Foundation Ireland (SFI) has defined a range of Metrics of Success which apply to SFI grants only but which are increasingly being viewed as good national indicators as well. It is implementing a tracking system which assesses the impact that SFI has on Ireland's strengths in the following dimensions within the chosen fields for research:

- Number of researchers in Ireland employed in the underpinning disciplines, including principal investigators, research fellows, postdoctoral researchers, and postgraduate students,
- number of articles published in refereed international science journals,
- number of patents and licenses filed by researchers,
- number of commercial start-ups and multinational and indigenous industrial R&D investments considered valuable to the research infrastructure,
- breadth and number of Irish scientists and engineers who have earned membership in elective international academic societies associated with the key disciplines.

Each individual project supported by SFI is subject to a regular monitoring and review process. This regular dialogue facilitates on going ex-post evaluation of research outcomes.

An evaluation of the first years of the operation of SFI: - "*Science Foundation Ireland the First Years 2001-2005*" was published in December 2005. This Evaluation Report, which was commissioned by Forfás, was the culmination of a substantial evaluation process carried out by an International Panel led by Professor Richard Brook, Director of the Leverhulme Trust in London.

Conclusions

Of course, no one country's experience can be totally relevant to other countries, especially those from another Continent. Different historical, cultural, economic, trade and geographic contexts may make success factors in one country's experience irrelevant in another. For example, in the Irish case, huge transfers of development funds from the EU for more than thirty years from Ireland's accession in 1973 played a very important part in the Irish economic success story, particularly in the build-up of Irish infrastructure.

Nevertheless, certain success factors are universal and can be applied in any country provided the political will and resources are available to make them work. Certain 'first principles' of success can be deduced from the experience of other countries. In the case of Ireland, these are outlined in the section above on First Principles. The most important and most transferable of these for developing countries are considered to be the following:

A. The critical importance of establishing a working public private partnership

Many international observers of the Irish success story have concluded that the Irish success simply could not have happened were it not for the high degree of Social Partnership operating in the country since the late 1980s. Following a disastrous period of social turmoil in the early 1980s, an unprecedented level of social cohesion was achieved through a series of three-year social partnership agreements since then. These agreements were the outcome of a *shared understanding* characterized by a *problem-solving* approach designed to achieve consensus. They did in reality represent a virtuous circle in the economy between government,

employers and labor encompassing pay, profitability, investment, employment and tax reform and emerged as a cornerstone of Irish economic transformation.

B. The value of a technically powerful centralized state agency to carry out *forward-looking* strategic policy analysis

The Irish experience with Forfas is an example of the impact such an Agency can have with its direct channels to the highest levels of Government and implementing agencies. Its advice is seen to be impartial, based on evidence-based research and *flowing up* to the highest levels of government and *flowing down* to policy instruments and action through its coordination, technical support, budget advice and monitoring of dedicated line promotional agencies.

C. Organizational effectiveness of state investment promotion agencies is ensured if some basic principles are observed

The Irish experience illustrates the importance of:

- Having agencies with statutory authority, clear mandates and operational freedom,
- having respected board members,
- having a code of ethical conduct for board members and staff,
- attracting well educated staff with pay rates comparable to the private sector,
- adopting a collaborative networking approach,
- installing a culture of working for the country rather than personal gain.

These principles are elementary and all usually within the power of national governments to implement, provided the *political will* is there to ensure they are implemented.

D. Development strategies should leverage areas of national competitive advantage

This approach has proved to be spectacularly successful in Ireland's case with strong clusters of domestic and international companies exporting from the country today in a small number of high value added sectors.

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