

INNO-Policy TrendChart –
Innovation Policy Progress Report

Liechtenstein

2009

PREFACE

Innovation is a priority of all Member States and of the European Commission. Throughout Europe, hundreds of policy measures and support schemes aimed at innovation have been implemented or are under preparation. The diversity of these measures and schemes reflects the diversity of the framework conditions, cultural preferences and political priorities in the Member States.

PRO INNO Europe® is an initiative of the Directorate-General for Enterprise and Industry (DG ENTR) which aims to become the focal point for innovation policy analysis, learning and development in Europe, with a view to learning from the best and contributing to the development of new and better innovation policies in Europe. Run by the Innovation Policy Directorate of DG ENTR, it pursues the collection, regular updating and analysis of information on innovation policies at national and European level.

INNO-Policy TrendChart serves the 'open method of coordination' approach laid down by the Lisbon Council in March 2000. It supports policymakers and innovation support measure managers in Europe by providing summarised and concise information and statistics on innovation policies, performances and trends. It is also a European forum for benchmarking and the exchange of good practices in the area of innovation policy.

INNO-Policy TrendChart products

INNO-Policy TrendChart, previously the TrendChart on Innovation, has been running since January 2000. It currently tracks innovation policy developments in all 27 EU Member States, plus Brazil, Canada, China, Croatia, Iceland, India, Israel, Japan, Norway, Switzerland, Turkey and the US. The INNO-Policy TrendChart website (¹) provides access to the following services and publications, as they become available:

- a database of innovation policy measures in the 39 countries;
- a news service and related innovation policy information database;
- annual policy monitoring reports for all countries covered;
- the European Innovation Progress Report, an annual synthesis report bringing together key points in the INNO-Policy TrendChart.

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The report covers the period from July 2008 to June 2009.

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¹ See <http://www.proinno-europe.eu/index.cfm?fuseaction=page.display&topicID=52&parentID=52> online.

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Executive Summary: public support for innovation – a snapshot

Liechtenstein ranks among the leading European countries in the area of innovation, in particular with respect to corporate spending on research and development (R&D), the high percentage of companies carrying out innovative activities and to output indicators such as patent intensity. At the basis of the innovation system is a generally favourable business climate that can best be characterised by low levels of bureaucracy, a liberal economic order and low levels of taxation nurturing entrepreneurial activities. Public investment in transport and infrastructure adds to the overall positive innovation environment.

Considering innovation drivers, the most important driver is R&D investment by private business and the high quality of research infrastructure of all large corporations. Liechtenstein also has a particularly large proportion of small and medium-sized enterprises (SMEs) in medium and high technology.

Another important driver of the high innovation performance in Liechtenstein is the high ratio of knowledge-based lines of business both in services and manufacturing. Knowledge-intensive business is commonly associated with high growth potential and high ratios of added value. A total of 16.6 % of employment in Liechtenstein can be attributed to high technology sectors. From 2000 to 2006, the workforce in high technology branches increased by 7 %.

The current focus of the financial sector in Liechtenstein is clearly on company administration and offering structures for private wealth management. These services comprise relatively low domestic added value per entity. Without an increase in advisory services and strong client relationships, the competitiveness of Liechtenstein's financial service sector is threatened by emerging new financial centres abroad. Innovation in services based on new regulatory frameworks including taxation and bank secrecy are seen as the way out of this strategic dead end.

In contrast to the exceptionally high private R&D investment, Liechtenstein falls significantly short of public R&D expenditure with a ratio of less than 0.1 % of gross domestic product (GDP) since 2003. Low public investment could have a long-term negative effect on knowledge production and the high innovation performance of the private sector.

Liechtenstein is strongly committed to a liberal economic order. As a result, the State does not offer any direct financial support, but limits innovation policy to the provision of an attractive framework for entrepreneurial and innovative activities. Some policy measures are targeted directly at an increase in public investment in science and technology (S&T). Public procurement and public-private partnerships are used as vehicles for the promotion of innovation in the area of renewable energy, energy savings and financial services. New laws, for example the Law on Energy Efficiency that came into effect as of June 2008, are expected to have a further positive impact on developing new technologies in this area. Individual measures are implemented to increase innovation performance in financial services, empowerment of SMEs and increasing knowledge production in high technology fields. Among the most important of these measures are: the introduction of public-private partnerships for financial services focusing on microfinance and the mitigation of climate change, co-financing of scientific research institutions, and a broad range of advisory services offered to SMEs in the area of innovation, internationalisation and leadership. The National Business Plan Competition regularly spurs start-up activities in creative and high technology fields.

A general appraisal of the policy measures in Liechtenstein remains difficult due to the limited database of standard innovation indicators and evaluation practices. Taking into account the continuing strong innovation performance measured in terms of employment in high technology and patent intensity, there seems to be no need for a drastic change in innovation policy measures (IPM). However, further professionalising and especially implementing common practices of good governance in innovation policy are recommended and should remain in the general public agenda.

1. Main trends and challenges in the National Innovation System

1.1 Recent economic trends and market developments

According to an extensive economic study published in July 2008, the Principality of Liechtenstein ranks among the strongest industrialised areas of Europe. Per capita income is high in comparison with all other European countries. The State has accumulated significant financial reserves and unemployment continued to be less than 3 % despite the global economic downturn. The strong industrial sector focusing on the metal and machine industries, vehicle manufacturing and the electrical and optical areas were well able to sustain their position during the past decade. Compared to the economic structure of most highly industrialised European countries, Liechtenstein displayed a positive employment trend in all three economic sectors until early 2008. Economic tertiarisation, i.e. the shift from employment from the primary and secondary sector to the third (service) sector, remains less advanced with more than 43 % of all employees working in manufacturing (see Exhibit 1).

Exhibit 1: Employment in economic sectors (2007, % of total employment)

	Sector 1	Sector 2	Sector 3
	Agriculture and forestry	Manufacturing	Services
Austria	5.90 %	27.40 %	66.80 %
Germany	2.30 %	29.80 %	67.90 %
Liechtenstein	1.10 %	43.50 %	55.40 %
Switzerland	4.00 %	22.90 %	73.10 %

Source: Liechtenstein Office for Statistics.

While agricultural workers contribute to 7 % of the GDP, manufacturing adds 39 %, financial services 29 % and other services 25 %.

Manufacturing in Liechtenstein is characterised by specialisation in high technological product and market niches resulting in a strong export orientation. The export rate of Liechtenstein has been well above 70 % since 2004, with approximately 61 % of all exports going to Europe, followed by Asia (17 %) and North America (15 %). Because of its high reliance on exports, the manufacturing sector was hit hard by the global economic slump in 2008. In addition, since midyear 2008, the Swiss franc increased in value against the currencies of the 24 most important export countries, thus affecting international trade. The Liechtenstein Economic Research Centre (KOFL) projected a decrease of 0.8 % of real direct exports in 2008 reaching CHF 4.07 billion (approximately EUR 2.62 billion), with a bleak outlook of -5.7 % for 2009 totalling an estimated CHF 3.837 billion (approximately EUR 2.48 billion). Financial services represent the other important sector in the economy. Private wealth management dominates the financial sector, offering an attractive and – given the size of the country – broad product portfolio. About 50 % of the approximately 4 700 employees in the financial sector work in fiduciary services or closely connected sectors. More than 35 % of employees work in the banking sector – and thus primarily in private banking. According to estimates, fiduciary services and private banking account for approximately 80 % to 90 % of the added value generated by the financial sector, while the rest is generated by insurers, the fund industry, independent asset managers, and others.

Liechtenstein banks suffered from the international tightening of financial markets and the international structural crisis, leading to a halt in new job offerings by banks and financial institutions. In addition, Liechtenstein faced increasing international pressure to change regulations and foster international cooperation in tax matters after a series of allegations on tax evasion.

In a report issued in 2000, the Organisation for Economic Cooperation and Development (OECD) identified a number of countries as tax havens according to criteria it had established. As the Principality of Liechtenstein did not make commitments to transparency and exchange of information, it was identified in April 2002 by the OECD's Committee on Fiscal Affairs as an uncooperative tax haven. Since then far-reaching legislative reforms have been undertaken in the course of strengthening and modernising the financial sector, such as the creation of the Financial Intelligence Unit (FIU) in 2002 and the Financial Market Authority (FMA) in 2005. Other key reforms included the total revision of the Mutual Legal Assistance Act (2000), several amendments to the Insurance Supervision Act (2002 and 2005), the Counterterrorism Package (2003), the conclusion of a Savings Tax Agreement with the European Community (2004), the creation of an Asset Management Act (2005), and a Market Abuse Act (2006). Liechtenstein also implemented the 2nd Money Laundering Directive, the Palermo Convention (2006) and carried out a total revision of the Securities Prospectus Act (2007) and the Pension Funds Act. Liechtenstein also implemented the 3rd Money Laundering Directive in 2008.

In May 2009, the OECD's Committee on Fiscal Affairs decided to remove the Principality of Liechtenstein from the list of uncooperative tax havens in the light of their commitments to implement the OECD standards of transparency and effective exchange of information and the timetable they set for the implementation.

Liechtenstein has 15 banks and a large number of private investment institutions, fiduciary companies, insurances and reinsurances (see Exhibit 2).

Exhibit 2: Financial institutions in Liechtenstein

Financial market participants	2005	2006	2007	2008	Change in % 2007 / 2008
Banks / Investment firms	16	16	16	15	- 7
Asset management companies	-	48	90	102	13
Investment undertakings	166	206	303	363	20
Insurance undertakings	32	35	37	42	14
Insurance intermediaries	-	3	35	64	83
Pension schemes	41	39	36	34	- 6
Pension funds	-	-	2	4	100
Other financial intermediaries	1,314	1,372	1,373	1,411	3
Total	1,569	1,721	1,892	2,035	8

Source: Financial Market Authority Liechtenstein.

The financial institutions serve as nominees for, or manage, more than 75 000 entities (primarily corporations, institutions, or trusts), mostly for non-Liechtenstein residents. As a direct result of the new regulatory framework, a growing number of small private wealth managers and trust companies will have to restructure their service portfolios and look for new business opportunities.

Liechtenstein posted a near 3 % increase in full-time employment in 2008, but the KOFL projects a 0.3 % drop in full-time employment for 2009, signifying a halt in the continuous upward trend since 2002. Besides the pressure exerted on the financial services sector, the downturn in employment is driven by redundancies in the manufacturing sector. Since the final quarter of 2008, about 60 large and medium-sized companies have filed for short-time work with the Office of Economic Affairs. Since May 2009 there has been no further increase in requests for short-time work and furthermore the total number of reduced hours remains stable. Jürgen Nigg, Managing Director of the Liechtenstein Chamber of Trade and Commerce, expects an easing of the situation in late 2009, with most firms returning to normal working hours. However, Mr Nigg also pointed out that the weak international and domestic demand has led to a considerable number of bankruptcies and lay-offs of personnel in small and medium-sized companies, especially in metal working, automotive parts and more traditional crafts that might continue well into 2010.

According to the KOFL, the considerable growth in employment had a strong impact on GDP growth during the period from 2000 to 2005. In contrast to other countries, e.g. neighbouring Switzerland (+8 % in nominal terms), labour productivity nominally declined in Liechtenstein by -4 %. In theory, deteriorating rates of labour productivity can be caused by a shift in labour from branches with high

levels to those with low levels of productivity. In absence of such a phenomenon in Liechtenstein, the most plausible explanation is that investments into human capital, R&D and technology either did not keep pace with the steady growth in employment, or investments did not translate into improved productivity. As employment growth is expected to decelerate significantly, long-term growth in GDP needs to be supported more effectively by steady increases in productivity. With an average labour productivity of nearly CHF 174 000 (approximately EUR 112 200) in 2005, Liechtenstein levels remain high in international comparison, for example as compared to Switzerland with about CHF 140 000 (approximately EUR 90 322) per worker.

Weak performance of manufacturing and financial services is reflected by a sharp drop in the economic activity of Liechtenstein. According to the KOFL, the real GDP contracted by 1.1 % in 2008 with a further decline of 2.5 % in 2009. As the global downturn eased pressures stemming from commodity prices, disinflation is projected to continue during the third and fourth quarter of this year. While inflation shrank nearly 3 % in 2008, the KOFL expects inflation to drop to a mere 0.7 % in 2009, largely driven by low commodity and oil prices (see Exhibit 2).

Exhibit 3: Comparable indicators of economic performance

Indicator	National performance		EU-27 average	
	2004	2007	2004	2007
GDP per capita in PPS (EU-27=100)	(:)	(:)	104.2*	103.7*
Real GDP growth rate (% change previous year)	3.9	9.6	2.5	2.9
Labour productivity per person employed (EU-27=100)	(:)	(:)	104.2*	103.7*
Total employment growth (quarterly % change)	1.2 ^	4.4^	0.7	1.8
Inflation rate (average annual)	0.8	0.7	2	2.3
Unit labour costs (growth rate)	(:)	(:)	-1.4	-0.8
Public balance (net borrowing/lending) as a % of GDP	(:)	(:)	-2.9	-0.8
General government debt as a % of GDP	0	0	62.2	58.7
Unemployment rate (as a % of active population)	(:)	2.9	9	7.1
Foreign direct investment intensity	(:)	(:)	0.9	3.4
Business investment as a % of GDP	(:)	(:)	17.2	18.7

Source: Eurostat - Structural Indicators and Long-term Indicators (<http://epp.eurostat.ec.europa.eu>).

Key: (*) EU-25 average, (^) Total employment growth for Liechtenstein is only available for annual % change (:) not available

Sources for Liechtenstein: Office of Statistics (<http://www.as.llv.li>), Konjunkturforschungsstelle Liechtenstein KOFL (Liechtenstein Institute of Economic Research)

1.1.1 The credit crisis and its effect on innovation activity

Because of the heterogeneous composition of the national economy, Liechtenstein is less susceptible to the current economic crisis, although manufacturing exports were hit hard by the global downturn. In Liechtenstein both manufacturing and financial services are strongly dependent on knowledge-intensive skills that are becoming increasingly scarce. Therefore all companies in high and medium technology as well as financial services try to avoid lay-offs and make use of natural staff turnover to reduce personnel expenditure. Many companies prefer to postpone investments in infrastructure, special projects and personnel training programmes to weather the crisis. The Hilti Group, a global leader in fastening technology, is one of the most prominent examples illustrating such a move. As a consequence of the rapid downturn in the global building sector and continued negative currency influences, the Hilti Group incurred a decline in sales of about 20 % in the first trimester of 2009. Against this background, the Group announced a comprehensive multi-stage plan to reduce costs internationally by 15 % until the end of 2010. In addition to the short-time working hours already introduced in the production facilities, the Group reduced the working hours of Headquarters staff by 5 % as of 1 July 2009, and adjusted their salaries accordingly. This arrangement was applied to all members of staff, including Senior Management, the Executive Board and the Board of Directors.

Moreover, the Hilti Group decided to defer a number of investment and expansion projects, among them the new Hilti Innovation Centre in Schaan, Liechtenstein, originally planned for 2009. In early 2009, the Group's Executive Board decided to postpone the construction start of the Centre for at least 12 months. Despite the implementation of such restructuring plans, the long-term effect on innovation performance is expected to be minor as these companies are building their competitive advantages on continuing innovation and leading edge technologies.

Among the smaller companies, the picture is somewhat more mixed depending on sectors. In particular, small companies in more traditional crafts, in retailing, in the metal working industry, and suppliers of special components for the automotive industry are struggling to survive. As a general rule, the less specialised and differentiated firms face a higher risk of bankruptcy. Specialisation in skills and innovation seem to be at the core for these firms to sustain and create new business. At the same time, small companies with a low profile find it most difficult to cope with problems of liquidity, often lack necessary competences and are most likely to be affected by the tight lending conditions of banks. In general, Liechtenstein banks serving the SME segment as well as commercial banks of neighbouring Austria and Switzerland maintain a relatively favourable line in terms of the availability of lending. However, there has clearly been a shift in the rates and the conditions offered. As a result, tight lending conditions might have a further market adjustment effect. While small innovative companies and start-ups are taking up credit, less effective companies will disappear from the market. In combination with no signs of a slowdown in (housing) loans to households, there are no clear signs that tighter credit could choke off or have negative impacts on the recovery of Liechtenstein's economy.

Recovery from the recession will be especially difficult for many small financial institutions and will require an innovative approach from both financial market players and the Liechtenstein government. During the past decades, Liechtenstein's financial institutions have specialised in private wealth management. The sharp deterioration of capital markets since 2008 has mounted pressure on private banks' profitability and client growth. For example, the net new client asset inflows of LGT Bank in Liechtenstein AG (LGT BIL), the largest bank in the Principality of Liechtenstein, amounted only to CHF 0.3 billion (approximately EUR 0.19 billion) at midyear 2008, comparing unfavourably to first-half 2007 inflows of CHF 6.2 billion (approximately EUR 4 billion). These numbers illustrate the difficulty in attracting client assets in the current tough environment.

In total, client assets in Liechtenstein decreased in 2008 by 29.5 % to reach CHF 120.8 billion (approximately EUR 78 billion) at the end of the year. About CHF 4.0 billion (approximately EUR 2.6 billion) can be attributed to a net cash drain from the banks. The remainder was largely caused by the sharp slump in prices.

In addition, investigations by foreign tax authorities into behaviour of the Liechtenstein banks' clients have led to an increasing external pressure to modify the legal framework for banking in Liechtenstein. International financial experts, e.g. rating agencies Moody's and Standard & Poors, generally expect a prolonged period of lower profitability in a challenging environment for the wealth-management industry. With respect to the intensifying pressure on offshore financial centres such as the Principality of Liechtenstein to lift their strict banking secrecy legislation, and new regulations already in place (see Chapter 1.1), they foresee an overall weakened growth prospect for Liechtenstein.

Because of the ongoing restructuring of the financial services market in Liechtenstein, the value of innovation is steadily increasing. The share of sophisticated clients is growing, and their needs develop rapidly and call for tailored solutions. There is intense global competition among pure structure providers, since structures (such as foundations) alone do not create strong client ties if they fail to be offered in conjunction with high quality advisory services. Financial market players have thus started to investigate innovative personal consulting services for the overall needs of wealthy clients. In parallel, the Government has launched a strategic project called 'Futuro' with the mandate to design an overall vision for both the Liechtenstein financial services and manufacturing. (For further details on this project see chapter 2.1).

Finally it is noteworthy to mention that the Government has not designed any national recovery or crisis plan and never offered any bail out payments to financial institutions. The Government rather

commits to means of liberal economic policies and public procurement, mostly in the renewable energy and energy saving area, to create the conditions in which innovation can flourish, both in manufacturing and financial services.

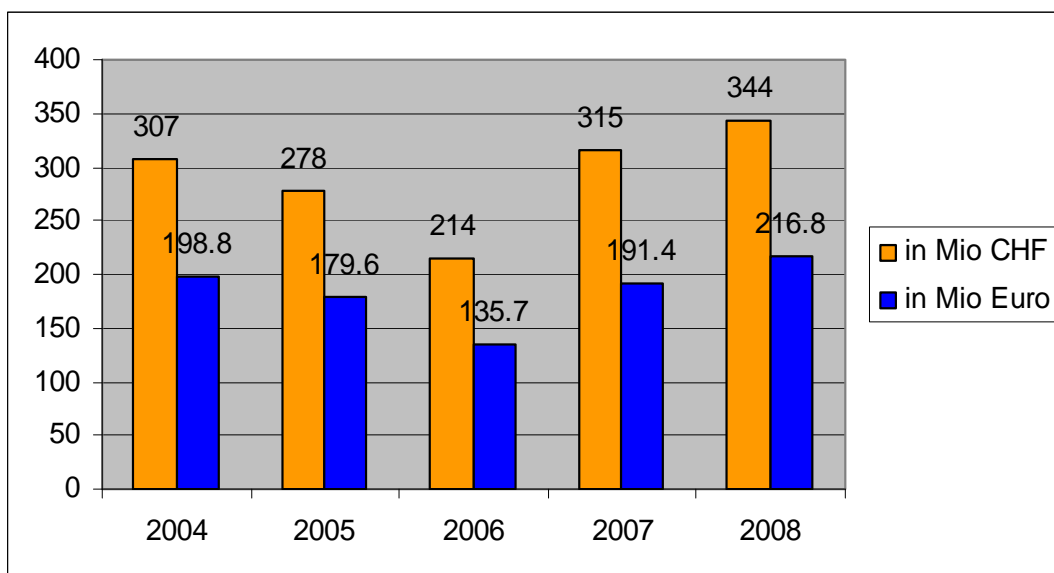
1.2 Recent trends in the national innovation performance

Liechtenstein ranks among the leading European countries in the area of innovation, in particular with respect to corporate spending on R&D, the high percentage of companies carrying out innovative activities and to output indicators such as patent intensity. At the basis of the innovation system is a generally favourable business climate that can best be characterised by low levels of bureaucracy, a liberal economic order and low levels of taxation nurturing entrepreneurial activities. Public investment in transport and infrastructure adds to the overall positive innovation environment.

Considering innovation drivers, the most important driver is R&D investment by private business and the high quality of research infrastructure of all large corporations. About 20 of the largest manufacturing corporations contribute nearly 88 % of private R&D spending. However, Liechtenstein also has a considerable number of SMEs in medium and high technology. These companies contribute the remaining 12 % of private R&D investments. Moreover, they carry out other innovative activities to defend their global competitiveness in product niches.

The Liechtenstein Chamber of Commerce and Industry (LCCI) carries out an annual survey among its industrial members asking for their overall spending on R&D. The following exhibit comprises the total R&D spending in Liechtenstein partly including collaborative research activities with international partners. The average number of reporting companies between 2004 and 2008 is about 30. Results of the first National Innovation Survey in 2007 estimated the total private R&D spending in Liechtenstein in manufacturing at CHF 192 million (EUR 122 million). Since 2007, no additional survey on national R&D spending has been carried out, but a survey is being planned for 2010.

Exhibit 4: Survey results of R&D spending (LCCI)



Source: LCCI.

After reaching a low in 2006, private R&D spending of LCCI members increased steadily. The development of private R&D spending of these companies might well reflect the industrial dynamics with short product cycles and need for upfront investment every four to five years. But further analysis

would be needed for a better understanding of the cycle. The strong investments in R&D since 2006 were largely fuelled by strong international demand for high technology and positive economic outlooks.

In contrast to the exceptionally high private R&D investment, Liechtenstein falls significantly short in public R&D expenditure with a share of well below 0.1 % of GDP since 2003. In anticipation of sharply declining tax revenue, the new Government, which was appointed in March 2009, is not expected to increase public R&D investment significantly in the near future. This will particularly affect the research funding of the University of Liechtenstein (Hochschule Liechtenstein) that was transformed into a full University offering doctorate programmes in 2009. Continued low spending on tertiary education might also have a negative impact on another important university serving the Liechtenstein labour market. Liechtenstein maintains close links and provides limited basic funding to the Interstate University of Applied Sciences of Technology Buchs (NTB) in neighbouring Switzerland. NTB focuses on engineering education and acts as a Regional Centre of Competence (RCC) both for regional SMEs and large corporations. Although negotiations for further cooperation have been ongoing, to date there is no clear commitment by the Government of the Principality of Liechtenstein to increase funding or infrastructural support to this important regional institution of knowledge production. The weakness in knowledge production in Liechtenstein might in the long-term affect the other innovation sectors, especially through a shortage of qualified employees.

Another important driver of the high innovation performance in Liechtenstein is the high ratio of knowledge-based lines of business both in services and manufacturing. Knowledge-intensive business is commonly associated with high growth potential and high ratios of added value. The national innovation performance is therefore also driven by the comparatively high ratio of highly qualified employees. When differentiating the industrial base into traditional industries, higher value technology and leading edge technology industries, about 16.6 % of employment in Liechtenstein can be attributed to the two latter segments. The ratio of employment in higher value technology and leading edge technology is thus twice as high as in Switzerland, with 5.6 % working in higher value technology and 2.4 % in leading edge technology. While the traditional industries grew by 4 % in employment between 2000 and 2006, the workforce in high technology branches increased by 7 %. Employment growth in high technology sectors has continued well into 2008, although most of the employment growth was spurred by financial services with a total growth rate of 39 % between 2000 and 2007.

Another peculiarity about the Liechtenstein labour market is the fact that the overall ratio of academics to the Liechtenstein population is comparatively low. Due to the high rate of commuting workers, the academic ratio among employees of Liechtenstein firms is exceptionally high, with nearly a quarter holding an academic degree.

In summary, a general positive innovation climate, solid private R&D investments and highly qualified personnel are the fundamental drivers for innovation in Liechtenstein. Measured in terms of employment in medium-high and high tech manufacturing (16.6 % of total workforce) and intellectual property (IP), innovation input is efficiently transformed into innovation output (see the following exhibit for an international comparison of patent intensity).

Exhibit 5: Resident patent filings intensity, 2006

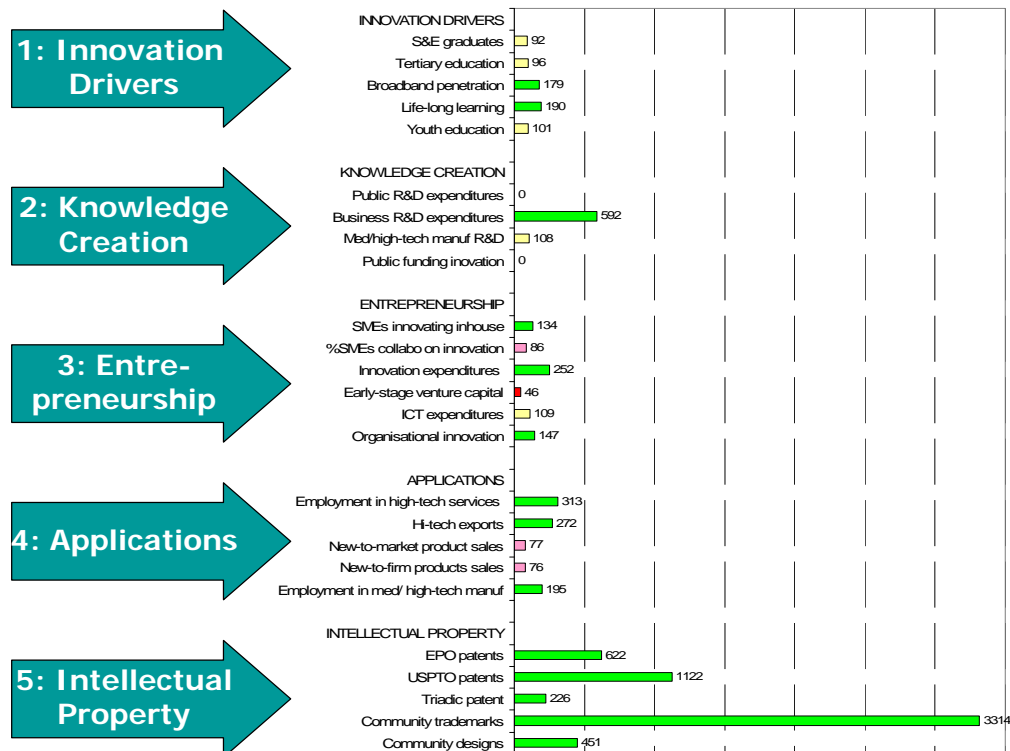
	Resident patent filings per M population	Resident patent filings per \$Bn GDP (USD)	Resident patent filings per \$M R&D expenditures
Austria	275.61	8.44	0.4
Finland	345.57	11.2	0.35
Germany	582.59	19.41	0.82
Ireland	199.08	5.97	0.56
Japan	2720.65	86.53	2.64
Liechtenstein	3806.8*	33.58"	0.87^
Luxembourg	56.27	0.88	0.06
Norway	247.43	5.95	0.41
Sweden	270.4	8.61	0.25
Switzerland	233.82	6.74	0.24

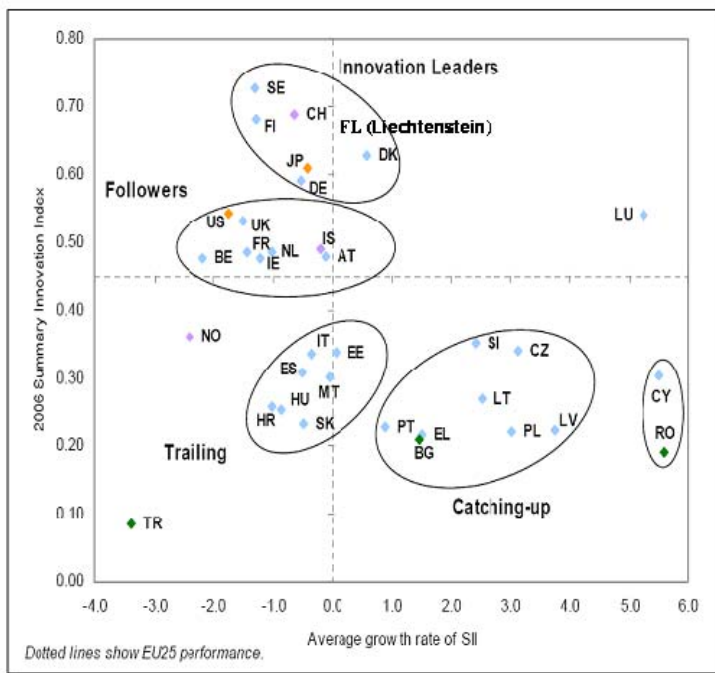
Sources and calculations for Liechtenstein: * Eurostat (Calculation basis 134 patent filings 2006); "134 patent filings to GDP of CHF 5.001 billion / USD 3.99 billion (Office for Statistics), (2006: USD 1= CHF 1.2530); ^134 patent filings to total national R&D expenditures in manufacturing of CHF 192 million / USD 154 million according to National Innovation Survey Liechtenstein 2007).

Source for all other countries: World Intellectual Property Organization: World Patent Report 2008.

Liechtenstein, although a member of the European Economic Area (EEA), is not required to supply data to Eurostat. As a result, data for the European Innovation Scoreboard (EIS) are limited. The Institute for Entrepreneurship of the University of Liechtenstein estimates main innovation indicators every two to three years. Calculations for 2006 are presented below in the following exhibit. Information on the new indicators will only be available based on new calculations projected for 2010 (see Exhibit 6).

Exhibit 6: European Innovation Scoreboard: Liechtenstein (2006)





1.3 Identified challenges

Taking into account the developments in the financial services sector, restructuring of the financial market has turned into one of the main challenges. This seems to be especially important as financial and capital markets have a strong impact on all other sectors of the economy. Finally, the international reputation of a country is an important antecedent for attracting new talent and business.

Two of the challenges from last year persist. First, the increase in public expenditure on education, science and innovation, taking into account the needs of manufacturing and services. As pointed out previously, human resources are at the core of the high innovation performance and form the basis for increasing productivity. Second, the intensification of knowledge and technology transfer. Increasing collaborative research between local and regional science partners and industry will nurture both established companies and start-up activity in innovative and knowledge-intensive branches.

Another new challenge has been identified in the area of building competence in science, technology and innovation (STI) policy and especially in improving governance efficiency. The Government has launched a number of initiatives nurturing innovation and skill formation, and has authorised a series of external expert analyses on the current economic situation with different outlooks on future actions. When researching information for this report from different sources in academia, with representatives from the administration, as well as with representatives of services and the manufacturing industry, it has become apparent that there is a lack of coordination and governance in the field of STI. However, strategic decision making will have to be based on a strong consensus among all actors involved in the National Innovation System (NIS), otherwise important findings will not be translated into concrete political actions in the researched political arenas.

One of the challenges from last year has been eliminated from the list of challenges. In 2008, the Government authorised a thorough analysis for the need and possible instruments to support financing of innovation projects in SMEs. Results from this study highlighted the constraints of any measures due to the small size of the country. In accordance with international standards of any such supporting funding scheme, only an estimated number of 20 to 30 companies would qualify. The expected benefits from supporting these firms would not justify the considerable cost of administration and building of competence. Furthermore, the Liechtenstein Chamber of Trade and Commerce is in negotiation with one of the main banks to develop a special programme targeted at empowering small

firms and offering them loans under special conditions for the purpose of financing strategic and innovation oriented projects. Exhibit 7 summarises the primary policy challenges for the Principality of Liechtenstein.

Exhibit 7: Main innovation policy challenges

Description of challenge	Relevant indicators and trends
1. Restructuring of financial sector with high focus on innovative solutions for international private wealth management	Indicator: client asset management (total, out and inflows), passing of tax legislation and new regulation of banking privacy and wealth management services, number of new international business, number of new innovative services offered. General outlook is positive as many legislative steps have been taken already. Main challenge resides in creating new knowledge about innovative financial services.
2. Increasing public expenditure on education, science and innovation including R&D	Public R&D quote (2006: 0.05 %): remains low due to finance constraints in wake of global recession, funding of a national science fund is not clear and pending, commitment to fund doctoral programme at the University of Liechtenstein can be seen as a positive step in attracting new talent.
3. Intensifying local knowledge and technology transfer	Intensity of collaborative research projects: estimated 10-15 projects currently carried out by researchers at the University of Liechtenstein, the Private University of Liechtenstein (UFL) and private business in Liechtenstein. Trend is positive with a higher importance on knowledge transfer project by the University of Liechtenstein. Decision to establish an innovation centre with science and private partners is pending, but is supported by the local industry. The Government is also negotiating with Switzerland to participate in collaborative research funded by the Swiss Confederation's Innovation Promotion Agency (CTI).
4. Good governance of innovation system	Transparency and exchange of information needs to be increased. Establishment of the Coordination Council for innovation, Research and Technological Development (KITE) is a first step in this direction.

Challenges were chosen based on expert interviews with representatives from the administration, academics as well as the private business sector including both SMEs and large corporations. Putting the restructuring of the financial sector on top is also justified because a strong financial sector is an advantage for other sectors in Liechtenstein. The financial sector makes a disproportionate contribution to the state budget and generates business for other sectors (e.g. construction).

Meeting the challenges should also help to maintain the high innovation performance and improve public expenditure on education and S&T to fully comply with the goals set by the National Lisbon Reform Programme.

Opportunities for Liechtenstein stem from the existing strengths, i.e. a liberal economic order, low taxation, the heterogeneous industry base, outstanding R&D intensity among technology niche players and a skilled labour force. In general, the small size is positive for the regulatory process, thanks to short distances, a good network of relationships, and a low level of bureaucracy. The new Prime

Minister's goal to keep the administration efficient and to reduce public spending by a larger state reform might free funds for public investment in science and innovation. With the University of Liechtenstein focusing on finance and banking, entrepreneurship and architecture, there is a solid base for skill formation in the financial, entrepreneurial and creative area. The UFL further enriches the science base by focusing on education and research in the area of medicine and biosciences.

Threats can be mainly identified in the area of financial services and increasing state intervention. As a consequence of the continuing reform process, small financial institutions will have to look for new innovative services in private wealth management. There is an increasing competition with new financial centres arising, e.g. in the Arab countries. With little international experience, traditional firms might struggle to survive. However, the employment growth in financial services has been a main driver for GDP growth in the past decade.

2. Public support to innovation

Liechtenstein has a liberal economic order offering high incentives for private economic performance thanks to an attractive regulatory and tax framework, including an internationally low tax level, a highly flexible labour market, modern transport and communication infrastructure and low levels of state intervention and regulations. In addition, Liechtenstein is characterised by low levels of bureaucracy and continuous efforts to improve state efficiency. Up to now, these factors have created the essential preconditions for Liechtenstein to survive as an attractive business location for innovative business. In general, all economic policy is guided by the following main principles:

- liberal economic order with an attractive regulatory and tax framework;
- restraint in state intervention and efficient state apparatus;
- high incentives for private economic performance;
- high degree of self-responsibility of private individuals;
- far-reaching protection of individual freedom to shape one's own life;
- high degree of protection of confidentiality in relation to the state.

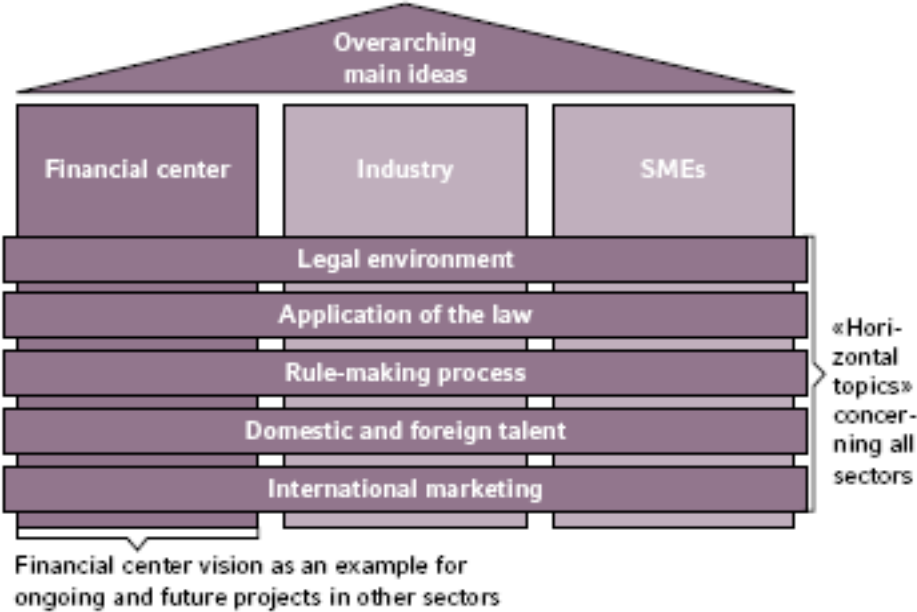
It is against this background that recent strategic initiatives and more instrumental measures targeted at sustaining the standard of living and economic prosperity have been designed and implemented. There is a clear commitment by all players of the innovation system to abstain from any direct support measures and that the role of the Government should be limited to providing good framework conditions. However, there is growing consensus among all actors that the Government needs to shift its attention to increasing public investment in higher education and knowledge production, and to allow for free movement of highly skilled workers in high demand sectors. There is also a common understanding that the Government should invest in innovation in the public sector, e.g. improving e-government services, and to promote innovation by means of public procurement. The latter is largely focused on green energy and areas of alternative and renewable energies, e.g. in public buildings and public transportation.

2.1 Main objectives for innovation policy

In short, all policy measures aimed at innovation are targeted at fostering Liechtenstein as an innovative international financial centre for private wealth management, and to sustain the internationally high innovation performance in manufacturing and other services. In addition, the Government aims at building competence in the area of science, innovation and technology policy to learn about best practices and to act professionally and flexibly in case of unprecedented changes in the current innovation system.

The most important strategic initiative set forth in 2007 was the Futuro project. Both the former and current Government signalled their commitment to developing a long-term strategic vision for the Principality as both an important financial centre for private wealth management and an attractive business location for innovative enterprises. After 12 months of in-depth analysis and evaluation of alternative future scenarios, the project team presented an overall vision for Liechtenstein in late 2008. At the core of the vision is an action plan for a new regulatory framework in combination with strong innovation imperatives for the financial services sectors. In parallel, five main strategic themes have been identified to channel general economic policy. The following exhibit illustrates the working areas of the Futuro project as well as the five common strategic themes guiding economic policy, including measures targeted at innovation. Because of the small size of the country with a limited number of large corporations with more than 250 employees, 'Industry' in the middle column is largely delineated from 'SMEs' by the degree of internationalisation and knowledge intensity of business activities. International SMEs in high and medium technology branches as well as knowledge intensive lines of services are often attributed to 'Industry', as most of their needs are similar to those of 17 large corporations. In contrast, most enterprises in the 'SME' group are based in more traditional trades and crafts and mostly do not retain more than five employees. They make up the local business serving mainly the Liechtenstein market.

Exhibit 8: Strategic themes for economic policy (Futuro project)

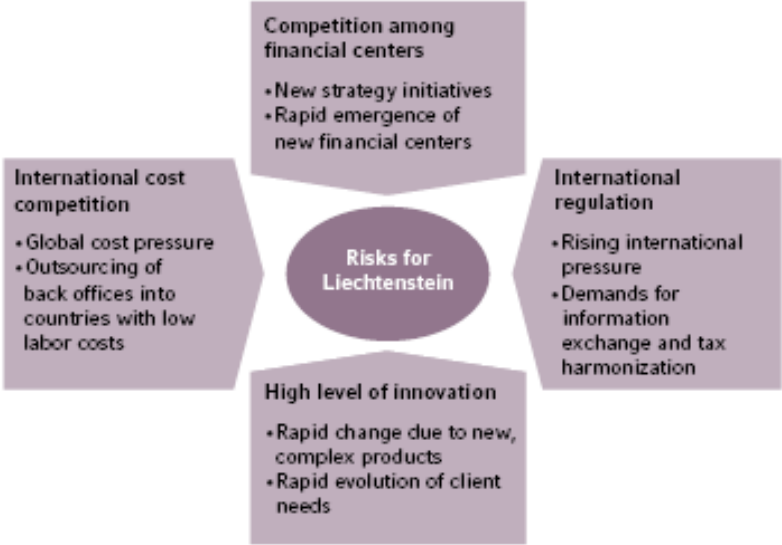


Source: Futuro project.

Findings from Futuro have set the general agenda for strategic policymaking for the next decade. Objectives for innovation policy in the financial services sectors are largely based on the vision for the future financial centre by the Futuro project. The current focus of the financial sector is clearly on company administration with relatively low domestic added value per entity. The sector is heavily dependent on Swiss intermediaries, to which the financial centre serves as a supplier of wealth management structures. The fiduciary sector of Liechtenstein lacks both advisory service activities with high margin potential and direct client contact. Furthermore, Liechtenstein’s private banking is limited structurally due to specific regulations partly resulting in low levels of internationalisation. Whereas the larger banks have successfully established branches abroad, no new banks or subsidiary of international institutions were founded in Liechtenstein for many years. In contrast, the number of banks operating in Liechtenstein quintupled during the 1990s. According to this analysis, Liechtenstein as a financial centre is in danger of covering too narrow a spectrum of client needs, thereby failing to establish itself as an important partner over the long-term as too many activities still have a one-sided focus on the formation and administration of structures. Innovation in services based on new regulatory frameworks including taxation and bank secrecy are seen as the way out of this strategic dead end. Policy objectives include the implementation of new regulations fostering international cooperation and compatibility with international standards in services offered. Innovation in the sector should also be spurred by public investment in new talent and skill formation to create new innovative services.

The following exhibit summarises the main influential dynamics for the financial centre of Liechtenstein.

Exhibit 9: International trends significant for financial services in Liechtenstein



Source: Futuro project.

Alongside Futuro and its analysis on the financial centre, three extensive studies were carried out dealing with aspects of innovation policy. 'Innovation system and policy', 'Knowledge site Liechtenstein' and 'High technology region Rhine Valley' have identified key areas for policy action and laid the foundation for specific measures targeted at the challenges introduced in Chapter 1.3. In addition, an analysis of the current situation and future prospects for SMEs paid more detailed attention to this important sector for growth. The degree of satisfaction and concerns of SMEs with the Liechtenstein business location were identified. The aim of innovative measures in manufacturing and other services clearly focuses on increasing public investment in higher and continuing professional education, and to increasing public investment to foster knowledge-intensive business lines as well as regional knowledge and technology transfer.

The following exhibit summarises key documents relevant to the formulation or touching upon issues of innovation policy. The list is limited to those reports and documents available to the general public.

Exhibit 10: Main innovation policy-related documents

Author	Title of publication	Available at:
Government of the Principality of Liechtenstein	Landtag, Regierung und Gerichte 2008. Bericht des Landtages. (Diet, Government and Court 2008. Annual Report of the Diet)	http://www.llv.li/pdf-llv-rk_rb2008_rechenschaftsbericht_gesamt_.pdf
Government of the Principality of Liechtenstein	Interpellationsbeantwortung der Regierung an den Landtag des Fürstentums Liechtenstein betreffend eine nachhaltige und zukunftsfähige Liechtensteinische Wirtschaftspolitik (Response of the Government to the Diet concerning a sustainable economic policy)	http://www.llv.li/pdf-llv-rfl-bua-075_wirtschaftspolitik.16089.pdf
Government of the Principality of Liechtenstein	Project «Futuro» - Vision for the Liechtenstein financial center, taking into account the needs of the overall economy.	http://www.llv.li/pdf-llv-rfl-abschlussbericht-projekt_futuro_englische_version_.pdf
Liechtenstein Chamber of Commerce and Industry	Projekt «Futuro» : Vision für den Industriestandort Liechtenstein unter Berücksichtigung gesamtwirtschaftlicher Bedürfnisse (Project Futuro: Vision for the business location Liechtenstein considering overall economic needs.)	http://www.llv.li/futuro-industrie

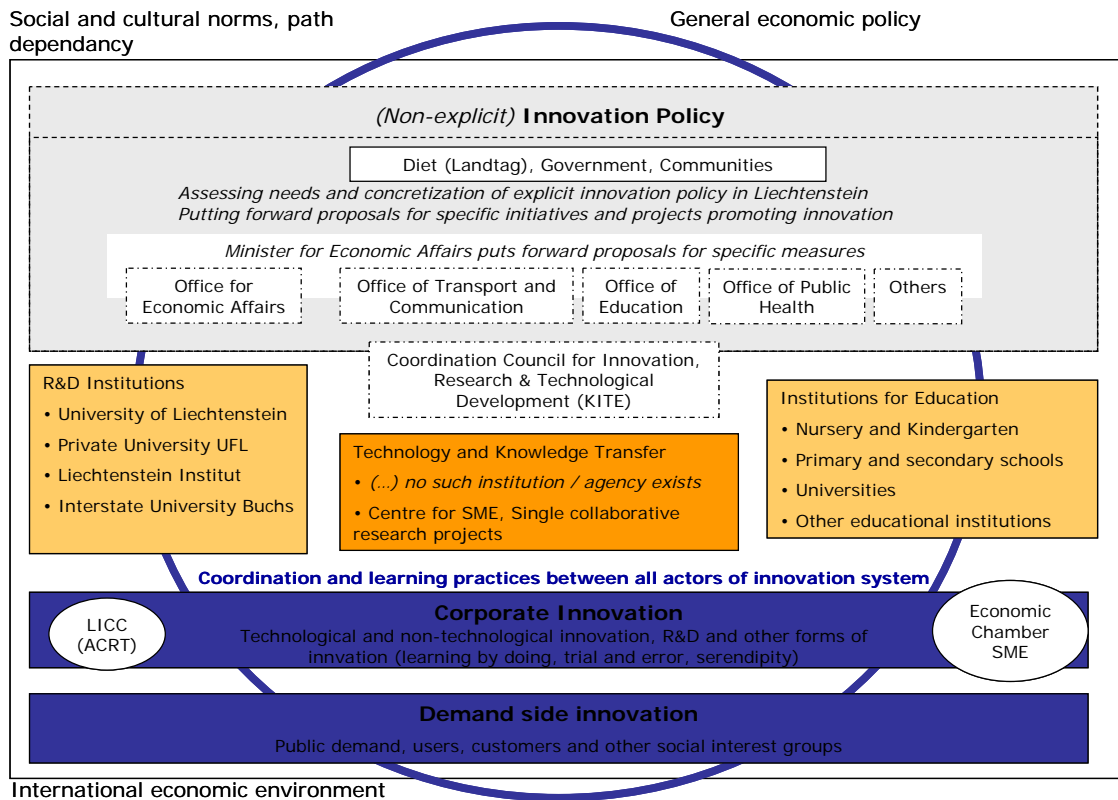
2.2 Innovation governance system

In the dualistic structure of the Principality of Liechtenstein, the Diet (Landtag) exercises the legislative function. On 8 February 2009, general elections were held on the normal expiry of the members' term of office. The final results gave 13 seats in the Diet to the Patriotic Union (VU), and 10 to the Progressive Citizens Party (FBP). The Free List (FL) took one seat. On 18 March, the newly elected Diet held its first session. With the agreement of the Diet, Prince Hans-Adam II appointed Mr Tschüscher as the new Prime Minister on 25 March 2009.

In addition to the consent of the Diet, the validity of a law requires the sanction of the Reigning Prince and the countersignature of the Prime Minister. The authority of the Diet also includes the right to nominate the Government, which is appointed by mutual agreement with the Reigning Prince. The Diet also exercises fiscal authority and supervises national administration, including justice. The Government is collegial. All important decisions are subject to the consultation and decision of the cabinet based on the work of the responsible offices at the administrative level.

The Principality of Liechtenstein has a long-standing tradition to promote a liberal economic order as the main incentive for entrepreneurship and private economic performance. As there is no explicit innovation policy, initiatives and policy measures targeted at innovation are treated equally with all other measures according to the system laid out in the above paragraph. The following exhibit summarises the governance structure and illustrates the NIS of Liechtenstein.

Exhibit 11: Innovation governance system Liechtenstein



2.2.1 Governmental bodies

The Office of Economic Affairs has the main responsibility for all economic policy issues including innovation oriented policy measures. The Minister drafts proposals on a consensus basis between all concerned supporting offices. Any proposal by the Minister of Economic Affairs is considered by the Government and subsequently presented to the Diet after a public hearing. Approved measures are implemented by the Government and managed by the supporting offices. The Office of Economic Affairs is also responsible for Liechtenstein's participation in bilateral and international research and innovation frameworks and programmes (e.g. FP7). In addition, the Office prepares and disseminates innovation-related initiatives and measures.

The Office of Economic Affairs also hosts the National Contact Bureau for Research and Technological Development as a main communication point for consultation on FP7 and other international research programme participation.

2.2.2 Main bodies managing implementation of policies

The Minister of Economic Affairs also consults with representatives from industry. The Advisory Council for Research and Technology (ACRT) was founded in 1989 as an innovation circle of the LCCI (<http://www.lcci.li>). The responsibility of the ACRT is to provide important research and technology information to the LCCI and the Government. Its objective is to improve the basis for decision making relating to innovation and technology policy. The ACRT promotes contacts and exchanges of experience in research and technology between scientists and businesses. General questions concerning education and the recruitment of qualified personnel are also an important area for the ACRT. On the other hand, the needs and concerns of SMEs are represented by the

Liechtenstein Chamber of Trade and Commerce (<http://www.wirtschaftskammer.li>). In general, private sector involvement in research and innovation policymaking is characterised by the highly interactive decision process, taking into account the following forms of interaction:

- intensive networking, general dialogue and informal involvement are traditionally highly developed;
- the small country size favours personal relations and involvement;
- in an advisory role, both the LCCI and key individuals are consulted frequently by policymakers;
- the LCCI is also strongly committed to a proactive involvement in policymaking through a variety of forms, including own statements and policy proposals.

These forms of participatory policymaking processes ensure a strong formal involvement in research policy establishment and design.

A change since the last report is the establishment of the KITE in April 2008. The Council is headed by the Minister of Economic Affairs. Representatives from the University of Liechtenstein, the LCCI and the Chamber of Trade and Commerce have been appointed by the former Prime Minister. The goal of the Council is to prepare the foundation for innovation policymaking and act as a consultative body to the Government.

2.3 Public funding to innovation

As pointed out earlier in this report, Liechtenstein offers no public funding scheme or direct financial support, but limits innovation policy to providing an attractive framework for entrepreneurial and innovative activities. In addition, some policy measures are targeted directly at an increase in public investment in S&T. Public procurement and public-private partnerships are used as vehicles for the promotion of innovation in the area of renewable energy, energy savings and financial services. Passing of new laws, for example the Law on Energy Efficiency that came into effect as of June 2008, will have a further positive impact on developing new technologies in this area. The following section outlines initiatives and measures financed by the Government that are aimed at the promotion of innovation or have an indirect positive effect on the country's innovation performance. The section starts with an overview of initiatives in the financial services sector. It continues with a discussion of measures addressing either one of the main strategic themes identified by the Futuro project (see Exhibit 8), or specifically the promotion of innovation in manufacturing and other services.

2.3.1 Review of the current range of support measures for innovation

Like other industries, financial services are subject to rapid change worldwide due to continuous innovation. New technologies are becoming increasingly important, especially with respect to complex products like hedge funds and funds of funds. Sensitivity towards potential security risks, e.g. in connection with electronic data, is also growing in importance. The identified lack of innovation in Liechtenstein's financial centre services is especially problematic in light of the growing share of sophisticated clients from new markets, such as the Arab World, Asia and Eastern Europe. Their needs develop quickly and demand individually tailored solutions. Client interaction and care in the fiduciary sector of Liechtenstein, but also in the newly emerging life insurance sector, are frequently situated abroad, especially at Swiss major banks or insurers. This development makes it more difficult for service providers in Liechtenstein to expand client care in response to expanded needs. The large international financial institutions are more and more in the position to turn to mere structure providers such as Liechtenstein to offer their clients the optimal portfolio. While the value of advisory services rests with these large providers, pure structure providers will face increasing competition with new financial centres on the rise. Furthermore, Liechtenstein's financial sector risks closing itself off to expansion due to its low degree of internationalisation. International companies from abroad are often the driving force for innovations in a business location since they try to make up for the disadvantage of geographic remoteness by offering particularly attractive products.

Based on this analysis, results of the Futuro project suggest further measures to promote innovation in financial services, mainly by increasing investments in higher education and research at the University of Liechtenstein as the generation and conveyance of knowledge specific to the financial industry is key to success. A significant expansion of research through the appointment of a larger number of internationally recognised professors in focus areas important to the financial sector should be considered. A critical mass should be aspired to, especially in the core areas offered by the financial sector, namely foundation and trust law and general private wealth management. The attractiveness for internationally renowned professors should be enhanced by the creation of a doctoral level starting in 2009. Complementing this, the establishment of endowed professorships on topics relevant to Liechtenstein at leading universities abroad should be considered. In addition, specialised courses for continuing education of staff and financial professionals should be developed and offered in close cooperation with the private sector.

Further actions are emerging in the form of private-public partnerships to offer innovative services, such as structured investment in the areas of microfinance, alternative energies and climate-related issues. The Microfinance Initiative Liechtenstein (MIL) (<http://www.microfinance.li>) is a true public-private partnership: private and public institutions are jointly engaged on behalf of strengthening microfinance. The Liechtenstein Bankers Association, the Hilti Family Foundation, the Medicor Foundation, the University of Liechtenstein, the Liechtenstein Development Service (LED), the Enabling Microfinance (EMF) and the Liechtenstein Government, represented by the Office of Foreign Affairs (AAA), regularly meet in the form of a working group to initiate Liechtenstein's engagement to foster microfinance on a global level. The private-public partnership LIFE Klimastiftung (<http://www.klimastiftung.li>) promotes research and offers financial services related to the trade of emission certificates and to the protection of the climate in general.

In manufacturing and service sectors other than finance, the Government focused on the one hand on initiatives nurturing scientific research as well as regional knowledge and technology transfer. Financial contributions in 2009 of CHF 750 000 (approximately EUR 483 900) to the newly established branch of the Swiss Centre for Electronics and Microtechnology (Centre Suisse d'Electronique et de Microtechnique: CSEM) in the neighbouring Swiss canton of Graubünden, is a first concrete step into this direction. This specific branch of the Centre focuses on applications of nanotechnology in medicine and biosciences. Positive effects are expected from attracting scientists to the region, and from increased collaborative research with established biotechnology companies in Liechtenstein and the national universities. The Government of the Principality of Liechtenstein has also authorised the creation of a business plan for the establishment of a regional innovation centre. Such a centre would include physical infrastructure to support research in the area of nano- and microsystems technologies, including material sciences. Main scientific partners would be the University of Liechtenstein, the NTB, and the aforementioned branch of CSEM. Industrial partners would be comprised of the leading technology firms of Liechtenstein and neighbouring Swiss cantons. Members of the LCCI strongly favour the founding of such a knowledge and technology transfer centre. In a related move, the Government authorised a study in conjunction with the Swiss canton of St. Gallen to evaluate the implementation of a cluster policy aimed at micro- and nanotechnology.

Additionally, efforts are underway to strengthen collaborative R&D through participation in international research frameworks and programmes. Established in 2007, the National Contact Bureau for Research and Technological Development at the Office of Economic Affairs has been consulting SMEs on research cooperation and funding schemes within the Seventh Framework Programme (FP7). A service agreement has been concluded with the Swiss Euresearch Association in Berne to broaden the range of professional consulting services and advice to Liechtenstein companies. The Government also contributes about CHF 500 000 (approximately EUR 322 600) to the national science funds of Austria and Switzerland in order to make these funds accessible to researchers from Liechtenstein. The LCCI welcomed negotiations by the Government to make the University of Liechtenstein a full partner in collaborative research projects funded by the CTI. Finally, Liechtenstein is part of the Interregio Programme (from 2007 to 2013) (<http://www.interreg.org>) promoting collaborative research between German, Swiss, Austrian and Liechtenstein partners in the region of Lake Constance. Answering the call by the local industry to increase the awareness for outstanding scientific achievements and research on the whole, the Government has decided to become a member and take part in the Lindau Nobel Laureate Meetings at Lake Constance, contributing an amount of CHF 1 million (approximately EUR 645 000). This organisation provides a globally recognised forum for the exchange of knowledge between Nobel laureates and young researchers. As

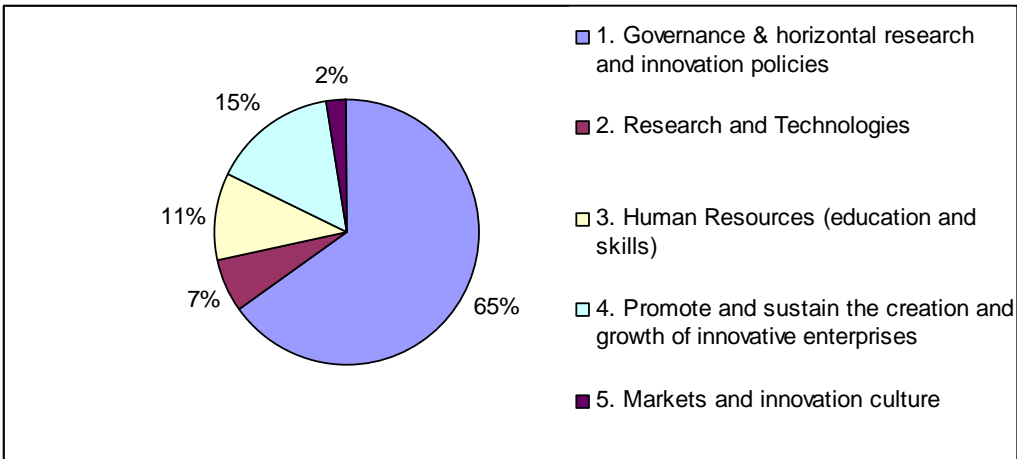
a consequence, the University of Liechtenstein has become an academic partner, providing young researchers the opportunity to meet and discuss with Nobel laureates. The private industry of Liechtenstein committed a further CHF 500 000 (approximately EUR 322 000).

With respect to SMEs, innovation measures aim at empowering individuals to improve their leadership skills and gain competence in entrepreneurship, innovation management and internationalisation strategies. Participation in the first 'SME Week', an initiative hosted by the European Union, has been a complete success with more than 400 attendees participating in different workshops and speeches dealing with start-up, growth and succession. In close cooperation with one of the main banks, the Liechtenstein Chamber of Trade and Commerce is in the course of launching a special initiative called Fit For Business. This initiative will be comprised of the due diligence of individual SMEs. Results of this exercise will form the basis for creating a tailored skill formation and strategic plan to foster competitiveness. Financial support will be provided on a special credit scheme and individual advisory services by the partnering bank. Finally, the campaign 'Entrepreneur of the Year' adds to the portfolio of initiatives to foster entrepreneurship. This Liechtenstein campaign is part of the worldwide competition organised by consulting firm Ernst & Young. Looking for outstanding entrepreneurial talent in more than 50 countries, Ernst & Young eventually awards one global leader with the most prestigious business award, 'World Entrepreneur of the Year'. In total, 15 candidates have qualified from Liechtenstein. The final decision will be made in July 2009.

Another noteworthy measure is the continued public financing by the National Business Plan Competition. This initiative has significantly increased start-up activities in such different areas as coffee roasting (<http://www.demmel.li>), customisable chocolates (<http://www.alea.li>), or high technology start-ups like Applied Ceramics (<http://www.ac-europe.li>) and Innoforce (<http://www.innoforce.com/en>).

The following exhibit gives an overview of the policy mix in the Principality of Liechtenstein. However, the data only represent a rough estimation based on data publicly available. Furthermore it is difficult to select those measures out of general economic policy that are supposed to have an indirect impact on the national innovation performance. As indicated earlier, Liechtenstein refrains from any direct financial support.

Exhibit 12: Preliminary innovation policy mix Liechtenstein (2009)



Source: Own estimates derived from expert interviews and public reports on economic policy.

2.3.2 New or modified support measures

As pointed out earlier, results from a series of analyses have led to new initiatives with the overall goal to maintain the attractive innovation climate and to intensify knowledge production in Liechtenstein through investments in science, education and improved networking efforts between established

actors in the innovation system. There are no measures in place as a response to the international credit crunch, as households and firms seeking loans continue to be served by regional banks. The following exhibit summarises the key new measures in place.

Exhibit 13: New Innovation Policy Support Measures (since last report)

IPM N°	Title	Innovation policy framework category	Organisation responsible
LIE_01	New regulatory framework including taxation and banking privacy to foster innovation in financial centre	Governance & horizontal	Diet
LIE_02	New laws and public procurement promoting R&D in areas of renewable energy and energy savings	Governance & horizontal	Diet
LIE_03	E-government initiatives (smart card for citizens, e-government services)	Governance & horizontal	Diet
LIE_04	Initiatives to build competence in areas of science, innovation and technology policy	Governance & horizontal	Office of Economic Affairs
LIE_05	Public-private partnerships for research in innovative financial services	Governance & horizontal	Office of Economic Affairs
LIE_06	Establishment of KITE	Governance & horizontal	Office of Economic Affairs
LIE_07	Evaluation for implementation of a cluster policy for nano- and microtechnology	R&D	Office of Economic Affairs
LIE_08	Creation of a business plan for a regional innovation centre	R&D	Office of Economic Affairs
LIE_09	Support for participation in collaborative research frameworks and increase in knowledge and technology transfer	R&D	Office of Economic Affairs
LIE_10	Increase in research capacity in finance and banking	Human resources	Diet
LIE_11	Partnership with the Lindau Nobel Laureate Meetings	Human resources	Various offices, University of Liechtenstein
LIE_12	Special projects for entrepreneurial education and skill enhancement of pupils and apprentices	Human resources	Office of Economic Affairs
LIE_13	National Business Plan Competition	Creation & growth of innovative firms	SME Centre
LIE_14	SME support services for innovation and internationalisation	Creation & growth of innovative firms	SME Centre, Chamber of Trade and Commerce
LIE_15	First European SME Week	Creation & growth of innovative firms	SME Centre
LIE_16	Ernst & Young national campaign 'Entrepreneur of the Year'	Innovation culture	SME Centre

2.3.3 Strengths and weaknesses in the innovation policy support system

Strengths arise simply from the fact that the innovation performance in Liechtenstein is comparatively high. Another important factor is that there is consensus among all players in the NIS on the general direction of policy measures aimed at sustaining Liechtenstein as an attractive business location for innovative and knowledge-intensive enterprises.

Weaknesses can be primarily identified in the area of governance. Information is spread among players with little coordination, causing redundancies and also unnecessary delays in decision making. Furthermore, there seems to be a lack of standard rules on transparency. For example, some project results are communicated to the public whereas other important strategic findings are kept secret, or are only distributed to some actors in the system. This also applies to the newly founded KITE. In contrast to common practices, there are no general guidelines available on which terms and qualifications individual experts are being nominated to join this council.

3. Innovation policy and competitiveness: an appraisal

General appraisal of the policy measures in Liechtenstein remains difficult due to the limited database of standard innovation indicators. Taking into account the continuing strong innovation performance measured in terms of employment in high technology and patent intensity, there seems to be no need for a drastic change in innovation policy measures. However, further professionalising and especially implementing common practices of good governance in innovation policy are recommendable and should remain the general public agenda.

The series of thorough studies on the current situation of the business location of Liechtenstein have laid a good foundation for future actions. Some initiatives, such as the strategically important implementation of a new regulatory framework for the financial sector, have gained momentum during the past year. There is clear evidence that these efforts are already yielding results. For example, the life insurance business is currently experiencing strong growth – albeit building on a narrow base – driven by structures distributed throughout Europe within the framework of wealth planning. This attractive line of business was developed within a very short time. The growth prospects continue to remain intact for the future, but depend on such other factors as the continuation of favourable tax treatment abroad. The implementation of the Microfinance Initiative is another noteworthy example of innovative activities in the financial sector.

Other initiatives and measures have been delayed during this period, partly as a result of a shift in priority due to the global recession, and to some extent caused by the election campaign and newly appointed Ministers taking office. As most of the larger projects aimed at an evaluation for innovation policy measures were finalised in late 2008 or spring 2009, the new Government will be challenged to translate the findings into concrete political actions and measures. Increasing public investment into knowledge production and into knowledge and technology transfer seems to be at the core of a future innovation policy. There are some signs pointing in the direction of increasing public investment in S&T, e.g. the partnership with the CSEM. However, to date it remains unknown as to what extent the Government will be able to address these specific strategic challenges.

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Diverse articles by the two national newspapers on issues of economic policy available at www.vaterland.li and www.volksblatt.li

Expert interviews and official statements were provided by the following persons stated in alphabetical order (The author especially appreciates the time and effort that they have devoted to gathering information):

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Prof. Jan vom Brocke, University of Liechtenstein and Coordination Council KITE
Dr Martin Frick, State Secretary to the Minister of Economic Affairs
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