SESSÃO 5

A POLÍTICA DE INOVAÇÃO NA EUROPA

PERSPECTIVA HISTÓRICA

Programas Quadro

- COM (2000) 6
- Barcelona 3 %
- P. Q. 6
- COM (2002) 565
- COM (2003) 226[P. Acção 3%]
- Exercicio CREST OMC
- COM (2004) 353[Prep. PQ 7]

Livro Verde, EIMS, Livro Branco

Presidência Portuguesa

- Trend Chart on Innovation
- COM (2000) 567
- COM (2003) 112
- Plano de Acção p/ Inovação

Relatório Wim Kok

Revisão Estratégia de Lisboa COM (2005) 488

COM (2005) 118 [ERA do Conhecº]
P. Q. 7
Lançamento ERAWATCH
Criação ERC- Europ. Research Council
COM (2007) 412 [Livro Verde ERA]
Horizon 2020

Competit. & Innovation Prog. (CIP)
#Aho Report
Launch PRO INNO Europe
COM (2006) 502
 # Innovation Union
COM (2010) 546 FINAL / SEC (2010) 1161

A PRESIDÊNCIA PORTUGUESA EM 2000

PONTO DE VIRAGEM NA POLÍTICA EUROPEIA DE I&D E DE INOVAÇÃO

The Union has today set itself a **new strategic goal** for the next decade: *to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion*. Achieving this goal requires an *overall strategy* aimed at:

· preparing the transition to a knowledge-based economy and society by better policies for the information society and R&D as well as by stepping up the process of structural reform for competitiveness and innovation and by completing the internal market;

· modernising the European social model, investing in people and combating social exclusion;

· sustaining the healthy economic outlook and favourable growth prospects by applying an appropriate macro-economic policy mix

Fonte: Conselho Europeu de Lisboa- Março 2000

Preparing the transition to a competitive, dynamic and knowledge-based economy

1. An information society for all
2. Establishing a European Area of Research and Innovation
3. Creation a friendly environment for starting up and developing innovative businesses, especially SMEs
4. Economic reforms for a complete and fully operational internal market
5. Efficient and integrated financial markets
6. Coordinating macro-economic policies: fiscal consolidation, quality and sustainability of public finances

Modernising the European social model by investing in people and building an active welfare state

(1) Education and training for living and working in the knowledge society

(2) More and better jobs for Europe: developing and active employment policy

(3) Modernising social protection

(4) Promoting social inclusion

Fonte: Conclusões da Presidência – Conselho Europeu de Lisboa 23/24 Março 2000

Putting decisions into practice: a more coherent and systematic approach

(1) Improving the existing processes

(2) Implementing a new open method of coordination

(3) Mobilising the necessary means

Fonte: Conclusões da Presidência – Conselho Europeu de Lisboa 23/24 Março 2000

Política europeia de investigação

ERA+ 3%

ERA & THE LISBON STRATEGY

- The Lisbon Strategy
  - The over-aching objective of European competitiveness
  - The link with social cohesion
  - The Open Method of Coordination (OMC)
  - R&D and innovation policy as key elements of Lisbon Strategy

- ERA as an instrument for pursuing the Lisbon Strategy
  - Promoting European R&D cooperation and policy coordination
  - Attracting research talents
  - Leveraging Capabilities

- The "New Start for the Lisbon Strategy" [COM (2005) 24]
  - 5 key topics for R&D policy
    (1) The 3% target
    (2) Improving tax environment
    (3) Launching FP7
    (4) Creating the European Research Council (ERC)
    (5) Revision of State Aids Framework for R&D and innovation

THE HEADLINES OF ERA (1)

- Coordinating and Leveraging Resources and Facilities
- Coordinating research policies, programmes and organisations
- Dynamising private investment
- Promoting a common system of scientific and technical reference
- Encouraging Human Resources mobility
- Attracting researchers from the World
- Science, Technology and Society: an area of shared values

THE HEADLINES OF ERA (2)

Relevant Issues Addressed in Recent Communications

- Providing a New Momentum for ERA [COM (2002) 565 final]
  - Benchmarking of Research Policies → ERAWATCH
  - Mapping of Excellence
  - Mobility of Researchers
  - Networking of National Research Programmes (incl. Article 169)

- Action Plan for Investing in Research [COM (2003) 226 final]
  - More concerned with the 3% target
  - Relevant for ERA on 3 grounds
    - Actions on coherent development of National & European policies
    - Setting up of Technology Platforms
    - Exercise of Application of the OMC

THE HEADLINES OF ERA (3)

Relevant Issues

- Guidelines for EU Research Policy and FP7 [COM (2004) 353 final]

- Mobility Strategy for the ERA [SEC (2004) 412]
  - Proposal of a package of legal instruments to facilitate the attraction of third country researchers

- Building of the ERA of knowledge for growth [COM (2005) 118 final]
  - The 'Knowledge Triangle': education, research and innovation
  - A more 'open' approach to research policy: fostering 'linkages' with Structural and Cohesion Funds and the Competitiveness and Innovation Framework Programme (CIP)
  - The headlines of FP7
  - The objective (not materialised) of doubling EU R&D fundings

THE HEADLINES OF ERA (4)

Balancing Change and Stability

- The FPs as key instruments

  From "integrating and strengthening the ERA" (FP6) to envisaging FP7 as "the backbone in the construction of a European Knowledge economy"

- Coordinating policies: strengthening the instruments

- Enlarging the scope: from research policy to the development of a consistent "European research, technology and innovation policy"

THE HEADLINES OF ERA (5)

THE ERA GREEN PAPER

COM (2007) 161 final

Mercado interno de trabalho para investigadores

Desenvº estruturas investigação de nível mundial

Reforço das instituições de investigação

Partilha eficaz de conhecimento

Coordenação programas investigação e prioridades

#Abertura ao Mundo: Cooperação internacional em C&T

European initiatives (1)

Coordination of Resources and Facilities

- Networks of Excellence
- Integrated projects
- The European Research Council: a key step
- Research Infrastructures: the creation of the European Strategy Forum on Research Infrastructures (ESFRI)

European initiatives (2)

Coordination of Research Policies, Programmes and Organisations

- ERA-NETs: focussing efforts and coordinating policy activities around thematic issues

- Technological Platforms and Joint Technological Initiatives as a “route for emergence of new research policies”

- Article 185 of the Treaty of Lisbon (former Article 169) as a basis for variable geometry approaches: the “European and Developing Countries Clinical Trial Partnership”

European initiatives (3)

Dynamising private Investment

- The Risk Sharing Funding Facility (RSFF) as an instrument for encouraging and supporting the commercial application of the results of European funded research

- The European Institute of Technology (EIT)
  - Learning from the US experience
  - Which model for the EIT?

European initiatives (4)

Mobility of Human Resources in Europe

- The European Charter of Researchers
- The Code of Conduct for the Recruitment of Researchers
- The exchange of experiences on attracting researchers
- The ERA-MORE Portal

European initiatives (5)

Governance of the European Research Area

- The linkages between Research and Innovation Policies: FP7 and CIP
- 'Regions of Knowledge' Programme
- ERA: coordination and variable geometry (former art. 169; now art.185 of the Treaty of Lisbon)
- OMC experiences: the 'objective 3%' exercise may provide ideas for ERA OMC initiatives

A iniciativa CREST:

Aplicação do Método Aberto de Coordenação ao Objectivo 3%

5+1 GRUPOS DE TRABALHO

1.Public research spending and policy mixes
2.Public research base and links to Industry
3. Fiscal measures and research
4. Intellectual property and research
5. SMEs and resarch

Steering Group Human Resources and Mobility in the ERA

A POLÍTICA EUROPEIA DE INOVAÇÃO

EM BUSCA DE UMA LÓGICA SISTÉMICA

O LIVRO VERDE (1995)

- Ainda a dominância do Modelo Linear
- A ideia do "Paradoxo Europeu"
- Uma perspectiva ainda limitada da prática da inovação nas PME
- Principal mérito: Ponto de partida para uma política Europeia de Inovação

A INOVAÇÃO NUMA ECONOMIA ASSENTE NO CONHECIMENTO

COM (2000) 567

- 1. COERÊNCIA DAS POLITICAS DE INOVAÇÃO
- 2. QUADRO REGULAMENTAR FAVORÁVEL À INOVAÇÃO
- 3. INCENTIVO À CRIAÇÃO E CRESCIMENTO DE EMPRESAS INOVADORAS
- 4. MELHORIA DAS INTERFACES FUNDAMENTAIS DO SISTEMA DE INOVAÇÃO
- 5. UMA SOCIEDADE ABERTA À INOVAÇÃO

POLÍTICA DE INOVAÇÃO: ACTUALIZANDO A ABORDAGEM DA UNIÃO NO CONTEXTO DA ESTRATÉGIA DE LISBOA

COM (2003)112

3 DIMENSÕES NAS POLÍTICAS DE INOVAÇÃO

- NÍVEL DE GOVERNAÇÃO: LOCAL, REGIONAL, NACIONAL, U. E., GLOBAL...
- SECTORIAL
- INTERACÇÃO COM OUTRAS ÁREAS DE POLÍTICA

O CAMPO DE ACÇÃO DA POLÍTICA DE INOVAÇÃO

- A inovação é baseada na capacidade da empresa para reconhecer oportunidades de mercado, nas suas capacidades internas e na sua base de conhecimentos
- A importância das inter-acções
- Procura, condições de mercado e atitudes da clientela
- Condições da envolvente
- A importância do nível de conhecimentos da envolvente
- Educação e formação

INOVAÇÃO PARA UMA EUROPA COMPETITIVA: UM NOVO PLANO DE ACÇÃO PARA A INOVAÇÃO

- Inovar em todas as vertentes
- Conseguir a inovação no mercado
- Conhecimento em todo o lado
- Investir na inovação (mobilizar instrumentos financeiros e fundos estruturais)
- Capacidades para a inovação
- Tornar eficiente a governança da inovação

COMPETITIVENESS AND INNOVATION FRAMEWORK PROGRAMME (CIP)

- Abandono do modelo linear
- As empresas no coração do processo de inovação
- Estimular as actividades de inovação empresarial
- Promover a aceitação da inovação pelos mercados
- Melhorar a governação e a cultura de inovação

OBJECTIVOS DO CIP

- Promover a competitividade das empresas, esp. das PME
- Promover a inovação, incluindo a eco-inovação
- Acelerar o desenvolvimento de uma sociedade da informação competitiva, inovadora e inclusiva
- Promover a eficiência energética e as fontes renováveis de energia

Os Programas do CIP

- Empreendedorismo e Inovação.....2,63
- Apoio à política TIC.....0,80
- Energia Inteligente.....0,78

Unidade: Biliões de Euros

EMPREENDEDORISMO E INOVAÇÃO

- Acesso a financiamento para criação e crescimº de PME inovadoras e para o investimento em actividades de inovação
- Criação de ambiente favorável à cooperação entre PME
- Inovação nas empresas, incluindo Eco-inovação
- Cultura de empreendedorismo e inovação
- Reformas económicas e administrativas relacionadas com a empresa e a inovação

INSTRUMENTOS FINANCEIROS PARA AS PME

- GIF: High Growth and Innovative SME Facility
- SMEG: SME Guarantee Facility
- CBS: Capacity Building Scheme

O RELATÓRIO AHO

Uma forte crítica à política de I&D e Inovação na Europa

A necessidade de uma nova estratégia e de "um novo paradigma de mobilidade, flexibilidade e adaptabilidade para permitir que a I&D e a inovação criem o valor que poderá então sustentar a nossa qualidade de vida" (pg.4)

RELATÓRIO AHO: UM PACTO PARA A INVESTIGAÇÃO E A INOVAÇÃO

1. Criar um mercado para produtos e serviços inovadores
2. Recursos para a I&D e a inovação na Europa
3. Mobilidade estrutural como base para o sucesso orientado pela inovação

... antes que seja demasiado tarde !

MAIS INVESTIGAÇÃO E INOVAÇÃO: INVESTIR NO CRESCIMENTO E NO EMPREGO (1)

COM (2005) 488

I&I NO CENTRO DAS POLÍTICAS DA U. E.
Melhor regulamentação para nova tecnologia
Redistribuição das ajudas do Estado
Mais efiiência na propriedade intelectual
Mercado único atraente para os investigadores
Contratação pública
Incentivos fiscais

I&I NO CENTRO DO FINANCIAMENTO DA U. E.
Mobilizar recursos públicos e privados para as tecnologias fundamentais
Fomentar a I&D pelos Fundos Estruturais
Melhorar o acesso das PME ao financiamen to
Mobilizar os programas nacionais

MAIS INVESTIGAÇÃO E INOVAÇÃO: INVESTIR NO CRESCIMENTO E NO EMPREGO (2)

COM (2005) 488

I&I NO CENTRO DA VIDA DAS EMPRESAS
Parcerias Universidade-Indústria
Pólos de Inovação e Agrupamentos Industriais de Investigação
Serviços de apoio às empresas
Gestão da inovação e mudança social
Serviços inovadores
Criação de um sistema europeu de acompanhamento da I&I

MELHORES POLÍTICAS DE I&I
Ligação aos programas nacionais de reforma
Melhores instrumentos de análise das políticas
Apoio à aprendizagem e à cooperação política

PONDO O CONHECIMENTO EM PRÁTICA: UMA ESTRATÉGIA DE INOVAÇÃO DE BASE AMPLA PARA A U. E. (1)

A DINAMIZAÇÃO DA INOVAÇÃO EXIGE O ENVOLVIMENTO DE TODOS OS ACTORES

1. Tornar a U. E.mais “amiga” da inovação

2. Facilitar o surgimento de mercados-líderes orientados pela inovação

3. Melhorar a governação da inovação (A Estratégia de Lisboa continua a ser relevante)

PONDO O CONHECIMENTO EM PRÁTICA: UMA ESTRATÉGIA DE INOVAÇÃO DE BASE AMPLA PARA A U. E. (2)

10 ACÇÕES PARA PROMOVER A INOVAÇÃO

1.Educação para promover sociedade "amiga" da inovação
2. Criação do EIT
3. Mercado Europeu de trabalho para os investigadores
4. Promover a transferência de tecnologia
5. Orientar a política de coesão para a inovação regional
6. Novo quadro regulador das ajudas públicas
7. Preparação de estratégia europeia de DPI
8.Quadro legal para os produtos, serviços e modelos de negócio digitais
9. Estímulo de mercados-líderes "amigos" da inovação
10. Manual sobre promoção da inovação através do *procurement* comercial e pré-comercial

TOWARDS A EUROPEAN STRATEGY IN SUPPORT OF INNOVATION IN SERVICES
(Commission Staff Working Doc. 2007)

- More favourable framework conditions
  - Fostering the potential of the Internal Market
  - Ensuring effective IPR
  - Encouraging public procurement of innovative services
  - Fostering skills and organizational innovation in services
  - Promoting R&D for service innovation
- Specific support mechanisms (facilitating firm creation, reorientate incubation, improving access to finance...)
- Fostering trans-national policy cooperation

INNOVATION UNION (2010)

SEC (2010) 1161

- Continue to invest in Education, R&D, Innovation and ICT
- Fight EU fragmentation
- Modernization and Excellence in Education Systems
- Trans-EU Research and Innovation Cooperation
- Simplifying access to EU programmes. Support fast-growing companies

INNOVATION UNION (2010)

SEC (2010) 1161

- Get more innovation out of research
- Remove barriers to bringing ‘Ideas to Market’. EU Patent.
- Launch European Innovation Partnerships
- Exploit EU strengths on Design and Creativity. Champion Social Innovation
- Working better with our international partners. Adopt a common EU front to protect our interests.

HORIZON 2020:
THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

- Excellent Science …….€27.8 M
- Industrial Leadership ……. € 20.3 M
- Social Challenges …….. € 35.9 M

Consultar:
http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=h2020-documents

DO INNOVATION UNION AO HORIZON 2020: E AGORA?

- E das Palavras à Acção?
- Podem a I&D e a Inovação ser os vectores de ultrapassagem da crise Europeia?
- Que Estratégia Global para a Europa no Século XXI?

A REVISÃO DO EIS

Uma Perspectiva dos Desenvolvimentos Recentes

ESTRUTURA DO EIS 2007

TABLE 1: EIS 2007 INDICATORS

	INNOVATION DRIVERS (INPUT DIMENSION)	Data source
1.1	S&E graduates per 1000 population aged 20-29	EUROSTAT
1.2	Population with tertiary education per 100 population aged 25-64	EUROSTAT, OECD
1.3	Broadband penetration rate (number of broadband lines per 100 population)	EUROSTAT, OECD
1.4	Participation in life-long learning per 100 population aged 25-64	EUROSTAT
1.5	Youth education attainment level (% of population aged 20-24 having completed at least upper secondary education)	EUROSTAT
	KNOWLEDGE CREATION (INPUT DIMENSION)	**Data source**
2.1	Public R&D expenditures (% of GDP)	EUROSTAT, OECD
2.2	Business R&D expenditures (% of GDP)	EUROSTAT, OECD
2.3	Share of medium-high-tech and high-tech R&D (% of manufacturing R&D expenditures)	EUROSTAT, OECD
2.4	Share of enterprises receiving public funding for innovation	EUROSTAT (CIS4)
	INNOVATION & ENTREPRENEURSHIP (INPUT DIMENSION)	**Data source**
3.1	SMEs innovating in-house (% of all SMEs)	EUROSTAT (CIS4)
3.2	Innovative SMEs co-operating with others (% of all SMEs)	EUROSTAT (CIS4)
3.3	Innovation expenditures (% of total turnover)	EUROSTAT (CIS4)
3.4	Early-stage venture capital (% of GDP)	EUROSTAT
3.5	ICT expenditures (% of GDP)	EUROSTAT, WORLD BANK
3.6	SMEs using organisational innovation (% of all SMEs)	EUROSTAT (CIS4)
	APPLICATIONS (OUTPUT DIMENSION)	**Data source**
4.1	Employment in high-tech services (% of total workforce)	EUROSTAT
4.2	Exports of high technology products as a share of total exports	EUROSTAT
4.3	Sales of new-to-market products (% of total turnover)	EUROSTAT (CIS4)
4.4	Sales of new-to-firm products (% of total turnover)	EUROSTAT (CIS4)
4.5	Employment in medium-high and high-tech manufacturing (% of total workforce)	EUROSTAT, OECD
	INTELLECTUAL PROPERTY (OUTPUT DIMENSION)	**Data source**
5.1	EPO patents per million population	EUROSTAT, OECD
5.2	USPTO patents per million population	EUROSTAT, OECD
5.3	Triad patents per million population	EUROSTAT, OECD
5.4	New community trademarks per million population	OHIM, EUROSTAT, OECD
5.5	New community designs per million population	OHIM, EUROSTAT, OECD

3.2 General criticism on the EIS

A number of articles have been published which contain criticisms of the EIS. These relate to many of the challenges set out above and can be summarised under the following headings. A more detailed analysis of the published criticisms is provided in Annex 2.

- Lack of innovation model

  The EIS lacks an underlying model of innovation that would justify the choice of innovation dimensions and indicators, and reflect underlying causalities that could be influenced by policy[10].

10 For example. Rammer (2005) states that "new indicators should be identified and selected on ... a conceptual analysis rather than on a simple statistical correlation analysis". Furthermore, "adapting [the] EIS should also focus on the question of data quality (including reliability as well as availability for a large number of countries) and the link between indicators and policy (distinguishing between performance indicators and policy indicators, the latter may be directly linked to policy actions)". Schibany et al., 2007, p. 5 remark that "any concise inference regarding the selection of indicators and ... their mutual interaction is mostly ignored".

Convergence within the EU and with the US and Japan

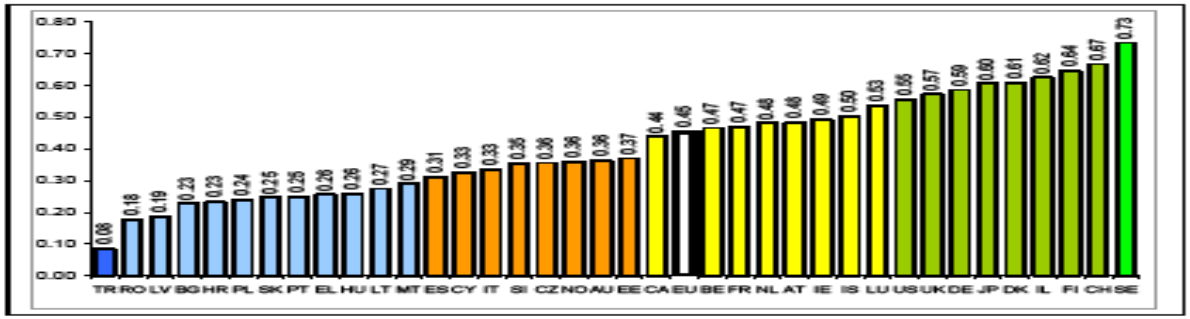
Within the EU, the report demonstrates a strong process of convergence with most of the moderate innovator and catching-up countries improving faster than average.

The comparison with the US shows that the lead over the EU, although still very significant, has been gradually decreasing over the last five years, particularly in the areas of ICT investments, broadband penetration, early stage venture capital and international patenting. However, more negatively, the US is pulling ahead in the areas of public *research and development (*R&D) expenditure and high technology exports. The gap between the EU and Japanese innovation performance has also decreased, particularly in Science and Engineering graduates and broadband penetration.

Innovation efficiency: transforming knowledge into innovation

For the first time, the report also assesses **innovation efficiency** and finds that most EU countries could make **improvements in transforming knowledge inputs into innovation output**. The most efficient performers are Germany and Luxembourg, but all other Member States seem to have significant scope to improve their efficiencies through policies that stimulate the generation of innovative applications and intellectual property. European initiatives such as on lead markets to stimulate demand for innovation (see IP/08/12) and on Intellectual Property are highly relevant in this context.

Chart 1: The 2007 European Innovation Scoreboard: Summary Innovation Index



Note: The Summary Innovation Index is a composite indicator of 25 measures and can range from 0 (worst performance) to 1 (best performance). Countries in green are innovation leaders; those in yellow are innovation followers; orange are moderate innovators; and blue are catching up countries.

The report will be used by the Commission to help assess progress on the broad based innovation strategy and identify policy priorities.

A PROPOSTA COTEC EUROPA PARA A REVISÃO DO EIS

		EIS	New
	INNOVATION CONDITIONS		
1	S&E graduates per 1000 population aged 20-29	X	
2	Population with tertiary education per 100 population aged 25-64	X	
3	Youth education attainment level (% of population aged 20-24 having completed at least upper secondary education)	X	
4	ICT expenditures (% GDP)	X	
5	Participation in life-long learning per 100 population aged 25-64	X	
6	Public R&D expenditures (% of GDP)	X	
7	Scientific publications (SCI) per milllion population		X
	BUSINESS ENGAGEMENT		
	Capabilities		
8	Employment in medium-high and high-tech manufacturing (% of total workforce)	X	
9	Employment in Knowledge-intensive business services - KIBS (% of total workforce)		X
	Activities		
10	Business R&D expenditures (% of GDP)	X	
11	Innovation expenditures other than R&D (% of turnover)		X
12	SMEs using organisational innovation (% of all SMEs)	X	
13	Disembodied Technology Acquisition (TBP Payments as % of GDP)		X
14	EPO patents per million population (**)	X	
15	Triadic patent families per million population (**)	X	
16	New Community designs per million population (**)	X	
17	New Community trademarks per million population (**)	X	
	Linkages		
18	Innovative SMEs co-operating with others (% of all SMEs)	X	
19	Share of S&T organisations receipts due to services provided to firms (as % of turnover) (***)		X
	New Actors		
20	INDICATOR ON ENTREPRENEURSHIP (*)		X
	INNOVATION OUTPUT		
21	Productivity growth		X
22	Sales of new-to-firm products (% of turnover)	X	
23	Exports of high technology products as a share of total exports	X	
24	Exports of knowledge-intensive services as a share of total service exports		X
25	Disembodied Technology Exports (TBP Receipts as % of GDP)		X

A MAIS RECENTE PROPOSTA DE REVISÃO DO EIS

This new methodology will be used in the forthcoming 2008 European Innovation Scoreboard, which will include more in-depth analyses of changes in innovation performance over time to identify for each country the key drivers for innovation improvements. The EIS 2008 report will also include a detailed comparison between the EU27 and the US and Japan using the results from the 2008 Global Innovation Scoreboard which will include a larger sample of non-EU countries using a more limited set of innovation indicators.

TABLE I: INDICATORS FOR THE EIS 2008-2010

		Cf. to EIS 2007	Data source
ENABLERS			
	Human resources		
1.1.1	S&E and SSH graduates per 1000 population aged 20-29 (first stage of tertiary education)	Revised	Eurostat
1.1.2	S&E and SSH doctorate graduates per 1000 population aged 25-34 (second stage of tertiary education)	Revised	Eurostat
1.1.3	Population with tertiary education per 100 population aged 25-64	Same	Eurostat
1.1.4	Participation in life-long learning per 100 population aged 25-64	Same	Eurostat
1.1.5	Youth education attainment level	Same	Eurostat
	Finance and support		
1.2.1	Public R&D expenditures (% of GDP)	Same	Eurostat
1.2.2	Venture capital (% of GDP)	Revised	EVCA/ Eurostat
1.2.3	Private credit (relative to GDP)	New	IMF
1.2.4	Broadband access by firms (% of firms)	Revised	Eurostat
FIRM ACTIVITIES			
	Firm investments		
2.1.1	Business R&D expenditures (% of GDP)	Same	Eurostat
2.1.2	IT expenditures (% of GDP)	Revised	EITO/Eurostat
2.1.3	Non-R&D innovation expenditures (% of turnover)	Revised	Eurostat (CIS)
	Linkages & entrepreneurship		
2.2.1	SMEs innovating in-house (% of SMEs)	Same	Eurostat (CIS)
2.2.2	Innovative SMEs collaborating with others (% of SMEs)	Same	Eurostat (CIS)
2.2.3	Firm renewal (SMEs entries + exits) (% of SMEs)	New	Eurostat
2.2.4	Public-private co-publications per million population	New	Thomson/ ISI
	Throughputs		
2.3.1	EPO patents per million population	Same	Eurostat
2.3.2	Community trademarks per million population	Same	OHIM
2.3.3	Community designs per million population	Same	OHIM
2.3.4	Technology Balance of Payments flows (% of GDP)	New	World Bank
OUTPUTS			
	Innovators		
3.1.1	Technological (product/service/process) innovators (% of SMEs)	New	Eurostat (CIS)
3.1.2	Non-technological (marketing/organisational) innovators (% of SMEs)	Revised	Eurostat (CIS)
3.1.3	Resource efficiency innovators (% of firms)	New	Eurostat (CIS)
	Economic effects		
3.2.1	Employment in medium-high & high-tech manufacturing (% of workforce)	Same	Eurostat
3.2.2	Employment in knowledge-intensive services (% of workforce)	Revised	Eurostat
3.2.3	Medium and high-tech exports (% of total exports)	Revised	Eurostat
3.2.4	Knowledge-intensive services exports (% of total services exports)	New	Eurostat
3.2.5	New-to-market sales (% of turnover)	Same	Eurostat (CIS)
3.2.6	New-to-firm sales (% of turnover)	Same	Eurostat (CIS)

Fonte: Hollanders & van Cruysen (Setembro 2008)