

EURADA-NEWS  
Périodique Mensuel  
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## **Agorada 2013**

**Brussels, 16/17 May 2013**

This issue of Eurada-News is dedicated to the scoping paper for Agoraada 2013 which will take place in Brussels on 16 and 17 May 2013 on the topic "In Search of a new Normal".

The exchanges of views will concern the opportunities and challenges resulting from the current economic situation for industry, RDAs and regional marketing.

**It is still time to register!**

# **Agorada 2013**

Brussels, 16/17 May 2013

## **In Search Of A New Normal**

### Scoping Paper

#### **Introduction**

The 2008 and 2011 financial crises will greatly impact public spending and hence the way national and sub-national authorities influence regional competitiveness and attractiveness. They will also affect private consumption. In their quest for “new normal”, public authorities will need to innovate administratively and institutionally in order to preserve their social model while providing business impetus. Overcoming the crisis will take time and will require – sometimes violent – industrial adjustments. As in all crises, some companies will go under. Others will drive their investment project, but industry leaders will be able to strengthen their lead. The same will be true of “top of the range” businesses that have achieved adequate geographical diversification to absorb the shock of the fall in the purchasing power of the citizens of the EU area. As the crisis was essentially caused by – and its effect mostly felt in – developed countries (EU & USA), emerging countries continue to grow and so does their competitiveness and attractiveness, including as consumption centres. Indeed according to some prospective studies,<sup>1</sup> the relative weight of the middle class – i.e. commodities consumers – in the EU & US (as the number one clients of European businesses) will have fallen from 36% to 20% and from 18% to 10% respectively of world population between 2010 and 2020. Over the same period, the relative weight of the Asia-Pacific Region with grew from 28% to 54%! For traditional (i.e. poorly innovative or internationally-minded) EU businesses, the new normal may well boil down to destroyed jobs if not bankruptcy. For other businesses, the new normal will consist in innovation, internationalisation and the never-ending dilemma of whether or not to offshore production near the most dynamic consumption centres.

Unfortunately, the Heads of States of the European Union have yet to find the recipe for economic recovery, or display willingness to leverage the EU budget to point the way to a new normal. Indeed, the draft EU budget is shrinking and 61% of it is still earmarked for policies developed in the 60s and 70s – i.e. policies that are 50 years old!

Will regional authorities prove more imaginative in developing their own new normal and leverage Structural funding more boldly in future?

Finally, the “new normal” will depend on States’ ability to interrupt the snowballing pattern of budget austerity → slower growth → budget stabilisation → slower growth... and on the impact of this snowballing pattern on enterprises/sectors the growth of which benefitted from public deficits or private debts.

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<sup>1</sup> Cf. i.a. Le Monde, 27.3.2013

## 1. Industrial Decline

### 1.1 Background

While the Obama administration and several US States<sup>2</sup> are inaugurating re-industrialisation policies, regions in the different EU Member States are reaching the sour realisation that no genuine industrial policy exists – which Commissioner Tajani recently acknowledged upon the closure of several Arcelor Mittal production plants.

The present issue stems from the following facts:

- Most of the so-called UE15 countries are facing competitiveness issues owing to (i) high wage costs and energy prices; (ii) dwindling export volumes – except in Germany –; (iii) poorly differentiated product ranges; (iv) difficulty marketing R&D project outcomes; and (v) an economy that relies excessively on traditional<sup>3</sup> industries. In Belgium for instance, according to the *Union Wallonne des Entreprises* (B), the social and economic fabric of Walloon industry breaks down as follows: pharmaceuticals: 20%; metallurgy: 15%; food and drinks: 15%; glass, cement and lime: 12%; chemicals: 9%.<sup>4</sup>
- When faced with anaemic macro-economic growth, the EU chose austerity over stimulus. It went for a conservative budget and a naive policy of openness to the world, in the process sacrificing its productive base on the altar of economic globalisation. How many shirts and pairs of shoes are one Airbus aircraft worth? Furthermore, the EU is lagging behind the USA in terms of energy independence.
- Global companies are hitting hard on cost centres, and their production units located in the EU are often at a disadvantage in this respect and are increasingly being pitched against each other. Global companies have global strategies while regional strategies are local (FDI attraction or export promotion policies as regions forget both that when companies move into one region, it is at the expense of another region and that where a business exports, another country imports);
- The absence of business retention and regional intelligence policies in most regions. This results in too long support to enterprises or to moribund market segments rather than in the support to a radical diversification. Are all regions in the same boat? Is it possible to anticipate the de-industrialisation phenomenon at regional level? What are the tools that need to be implemented to successfully deliver a re-industrialisation policy? What would such a policy look like?

### 1.2 The Magnitude and Impact of Job Variations within the EU

Since 2002, the European Foundation for the Improvement of Living and Working Conditions (Eurofound) has collected data on industrial change (job creation and destruction) in the EU.

Its database includes some 14,912 files, of which 8,365 relate to the period between 1 January 2008 and 31 March 2013 (i.e. 60% over the last four years).

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<sup>2</sup> Cf. Cf. "Making" our Future – National Governors Association – January 2013

<sup>3</sup> Cf. European Competitiveness Report 2012

<sup>4</sup> Source: La Dernière Heure, 2/3 March 2013

The motives listed in redundancy case files include:

Offshoring	254
Internal restructuration	3 589
Merger/Acquisition	164
Outsourcing	27
Bankruptcy/Closure	1 344
Relocation	79
Others	34

Job creations are self-evidently due either to expansion – in the case of 2,491 files – or offshoring (3 projects respectively in Estonia, Slovakia and the Czech Republic).

Sector breakdown of job loss and creation files		
Activities	Number of files	
	Losses	Creations
Administrative services	107	128
Agriculture	20	5
Construction	209	38
Arts and entertainment	27	9
Education	29	9
Health and social work	65	34
Financial services	225	131
Hotel and Restaurant	32	72
ICT	370	272
Manufacturing	2 986	1 069
Mining / Quarrying	59	34
Professional services	67	123
Public administration	281	30
Real estate	13	11
Retail	319	325
Transports / Storage	373	151
Utilities	102	43
Other services	11	4
TOTAL	5 866	2 488

→ Disparities between Member States in terms of the number of job destruction and creation cases:

	Job loss forecast			Job creation forecast		
	Total	Manufacturing	ICT	Total	Manufacturing	ICT
AT	120	64	9	40	29	1
BE	207	148	8	57	23	3
BG	27	16	1	28	16	0
CY	8	0	0	1	1	0
CZ	242	172	7	155	79	10
DE	389	217	29	102	51	4
DK	160	75	11	9	7	0
EE	44	27	1	28	6	1
ES	259	130	19	38	11	2
FIN	178	101	22	10	5	3

	Job loss forecast			Job creation forecast		
	Total	Manufacturing	ICT	Total	Manufacturing	ICT
FR	524	300	28	250	71	53
GR	81	20	22	9	4	0
IE	233	82	14	161	25	35
IT	300	186	26	60	21	2
HU	167	113	11	95	69	7
LT	59	28	7	53	13	6
LU	17	6	0	2	0	1
LV	27	13	0	10	5	1
MT	8	4	2	19	6	2
NL	207	70	23	13	8	1
PL	388	231	26	472	239	56
PT	86	52	5	72	23	6
RO	149	78	6	225	99	28
SE	390	270	26	58	18	6
SI	151	112	0	39	32	1
SK	122	93	3	155	84	12
UK	842	296	60	299	68	18
TOTAL	5866	3184	450	2499	1056	270

→ In 2012 alone and in just the four EU sectors of manufacturing, construction, ICT and transport/logistics, 175,000 net job losses were recorded, as illustrated in the table below.

<b>Job losses</b>					
Sector	1 <sup>st</sup> quarter	2 <sup>nd</sup> quarter	3 <sup>rd</sup> quarter	4 <sup>th</sup> quarter	Total
Construction	2 524	3 157	5 833	4 210	17 724
ICT	7 454	14 855	9 498	17 934	49 741
Manufacturing	41 369	32 859	43 294	53 704	171 226
Transport and logistics	16 745	17 725	7 317	6 137	47 924
Total					284 615

<b>Job creations</b>					
Sector	1 <sup>st</sup> quarter	2 <sup>nd</sup> quarter	3 <sup>rd</sup> quarter	4 <sup>th</sup> quarter	Total
Construction	200	600	150	—	950
ICT	3 405	8 318	3 600	2 460	17 783
Manufacturing	16 924	16 985	9 860	18 682	62 451
Transport and storage	7 484	3 522	8 740	8 659	28 405
Total					109 589

### European Globalisation adjustment Fund (EGF) Intervention

In 2008, the EU set up the European Globalisation adjustment Fund (EGF) to help workers who had lost their job due to major change in the structure of global trade as a result of globalisation.

Between 2008 and 2012, 105 interventions were approved (see the table overleaf) in support of 20 Member States. Interventions evolved over time and per Member State as follows:

	2007	2008	2009	2010	2011	2012	Total
AT	0	0	1	2	3	0	6
BE	0	0	2	1	0	1	4
BG	0	0	1	0	0	0	1
CZ	0	0	0	1	0	0	1
DE	1	0	2	1	1	1	6
DK	0	0	2	4	2	2	10
ES	0	3	2	5	6	1	17
FIN	1	0	0	0	0	1	2
FR	1	0	1	1	0	0	3
GR	0	0	0	0	1	0	1
IE	0	0	3	0	0	1	4
IT	3	1	0	3	6	2	15
LT	0	1	4	0	0	0	5
MT	1	0	0	0	0	0	1
NL	0	0	7	6	2	0	15
PL	0	0	0	3	0	0	3
PT	1	0	2	1	1	0	5
RO	0	0	0	0	1	1	2
SE	0	0	1	0	1	1	3
SI	0	0	0	1	0	0	1
<b>TOTAL</b>	<b>8</b>	<b>5</b>	<b>28</b>	<b>29</b>	<b>24</b>	<b>11</b>	<b>105</b>

Thirty-two cases were negotiated on behalf of regional industries, including:

Year	Region	Country	Sector
2012	Andalucía	ES	Automotive
2011	Emilia-Romagna	IT	Motorcycles
2011	Lombardia	IT	Electronic equipment
2011	Castilla y León	ES	Carpentry and joinery
2011	Castilla la Mancha	ES	
2011	Valencia	ES	Shoe manufacture
2011	Galicia	ES	Metal working industry
2011	Pais Vasco	ES	Metal working industry
2011	Aragon	ES	Construction of buildings
2011	Gelderland	NL	Construction of buildings
2011	Comunidad Valenciana	ES	Construction of buildings
2011	Norte Portugal	PT	Automotive
2011	Armsberg & Düsseldorf	DE	Automotive
2011	Trentino Alto Adige	IT	Construction of buildings
2011	Niederösterreich	AT	Road transport
2011	Oberösterreich	AG	
2010	Nordjylland	DK	Machinery and equipment
2010	Cataluña	ES	Automotive
2010	Galicia	ES	Wearing apparel
2010	Wielkopolskie	PL	Automotive
2010	Comunidad Valenciana	ES	Stone / Marble
2010	Steiermark	AT	Basic metal
2010	Niederösterreich	AT	
2010	Valencia	ES	Textiles
2010	Noord-Holland	NL	Wholesale trade

Year	Region	Country	Sector
2010	Podkarpackie	PL	Machinery and equipment
2010	Midtjylland	DK	Machinery and equipment
2010	Noord-Brabant	NL	Printing industry
2010	Overijssel	NL	
2010	Zuid-Holland	NL	Printing industry
2010	Utrecht	NL	
2010	Noord-Holland	NL	Printing industry
2010	Flevoland	NL	
2009	Castilla la Mancha	ES	Carpentry and joinery
2009	Noord-Holland	NL	Publishing
2009	Zuid-Holland	NL	
2009	Noord-Holland	NL	Printing industry
2009	Utrecht	NL	
2009	Limburg	NL	Printing industry
2009	Gelderland	NL	
2009	Overijssel	NL	Printing industry
2009	Drenthe	NL	

With regard to the activity sectors for which applications were submitted, it is to be noted that the majority of these involved manufacturing industries, but also included construction and services. Four manufacturing sectors were responsible for the largest number of applications: the automotive industry (17 applications), followed by the machinery and equipment sector (11 applications), then textile (10 applications) and the printing industry (9 applications). Around 10 applications came also from the construction industry broadly defined, covering the construction of buildings, specialised construction activities and architectural and engineering activities. This would go up to 14 applications if ancillary sectors such as carpentry/joinery and ceramics were also included. For almost half of the sectors affected, the EGF received one single application.

Number of applications by sector (2007-2012)				
Automotive	17		Computers	1
Machinery and equipment	11		Crystal glass	1
Textiles	10		Furniture	1
Printing industry	9		Aircraft maintenance	1
Construction of buildings	7		Publishing	1
Electronic equipment	5		Stone/marble	1
Mobile phones	5		Wholesale trade	1
Basic metals	5		Architecture/engineering	1
Wearing apparel	4		Road transport	1
Domestic appliances	4		Tobacco products	1
Retail trade	3		Social work activities	1
Ceramics	2		Pharmaceuticals	1
Carpentry and joinery	2		ITC services	1
Specialised construction	2		Warehousing/storage	1
Shipbuilding	2		Motorcycles	1
Shoe manufacture	2		Call centres	1
Metal working industry	2			

Source: DG Employment, Social Affairs and Inclusion

## 2. The New Productive Normal

### 2.1 Major Trend

The financial crises of 2008 & 2011 notably showed the importance of manufacturing activities as drivers of economic development.

Some experts have shown that the regions/countries that managed to preserve a dynamic manufacturing industry were more resilient than others. Others believe that a new period of growth is dawning for businesses and thus for those regions that manage to invest into and take advantage of, new industrial production opportunities. So the challenge is no longer to convince oneself that it is possible to “save the factories” but rather to “lead the race to the new normal” in robotics, e-manufacturing, nanotechnology, advanced materials, ICT platforms, emerging technologies, the low-carbon economy, alternatives energy sources, etc.

The new industrial normal will be mediated by growing production of goods and services that are tailored to individuals (3D printing, smart grids, telemedicine, M2M), and as far as businesses are concerned, by more sustainable production process formats and by joint development based on complementary knowledge. Commercialisation will increasingly happen through e-platforms.

Also in evidence are interdependent relations between service and production activities, both in terms of product design and production and distribution. This will impact staff skills.

In any case, tomorrow’s factories will not look anything like plants in the 50s and 60s as they will literally swarm with robots. Toward the end of 2012, GE announced an ambitious development programme in the field of “industrial internet” technologies<sup>5</sup> in sectors including aerospace (in partnership with Accenture), rail transport, hospitals and energy. Jeff Immelt characterised the motto of this programme as follows: *“By connecting intelligent machines to each other and ultimately to people, and by combining software and big data analytics, we can push the boundaries of physical and material sciences to change the way the world works”*.

In Europe, it seems that with companies such as Festo, Weidmüller, etc., German industry<sup>6</sup> is the one taking the lead in this sector called “M2M” or “Industry 4.0.”<sup>7</sup>

To address this trend, businesses and regions alike will need to invest massively into intelligence, R&D+I, vocational training, big data analysis and product design as well as management of global and complex supply chains.

Public authorities will need to leverage their purchasing power to steer private sector R&D efforts and productive investment toward emerging products/services or niche markets. They will have to rethink how they formulate calls for tenders. Rather than procuring individual products or services, they should buy solutions to individual problems. In 2012 for instance, DARPA (the US Department of Defence’s Advanced Research Project Agency) launched a competition to design an amphibious personnel carrier and NASA launched a competition to award the design of a software algorithm that will improve the efficiency of the solar panels equipping the International Space Station.

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<sup>5</sup> Industrial Internet or M2M (machine to machine)

<sup>6</sup> Cf. Les Echos, 11.4.2013

<sup>7</sup> [www.plattform-i.40.de](http://www.plattform-i.40.de)



Also, regional public entities could develop advanced manufacturing strategies.<sup>8</sup> In the US, states including Kansas, Virginia and California have already implemented such strategies.

Actually, the regional new industrial normal will be based on strong added-value niche markets leveraging costs and other entry barriers to shield regions against competition from emerging regions/countries. According to some experts, this approach requires four qualities: (1) innovation, including in traditional industries; (2) a passion for novelty whilst staying on a long-term course; (3) management that advocates joint development and rests on a creative workforce (regions should aim to at least achieve the status of “most skilled low-skilled workforce” region); and (4) willingness to substitute robots for human capital assets.<sup>9</sup>

The niches markets that need developing to strengthen the new industrial normal include:<sup>10</sup>

- Advanced sensing, measurement, and process control
- Advanced materials design, synthesis, and processing
- Visualization, informatics, and digital manufacturing technologies
- Sustainable manufacturing
- Nanomanufacturing
- Biomanufacturing and bioinformatics
- Additive manufacturing
- Advanced manufacturing and testing equipment
- Industrial robotics
- Advanced forming and joining technologies

## **2.2 Re-Industrialisation**

The manufacturing industry is not monolithic. Some industries already combine industrial and service activities. In the US, it is commonly accepted that every industrial production dollar leverages 19 cents in services. In some sectors, more than 50% of jobs are connected to (R&D, marketing and support) services.

McKinsey&Company<sup>11</sup> identified five groups of manufacturing industries with radically different features and needs affecting their location. The table below provides details about those industries.

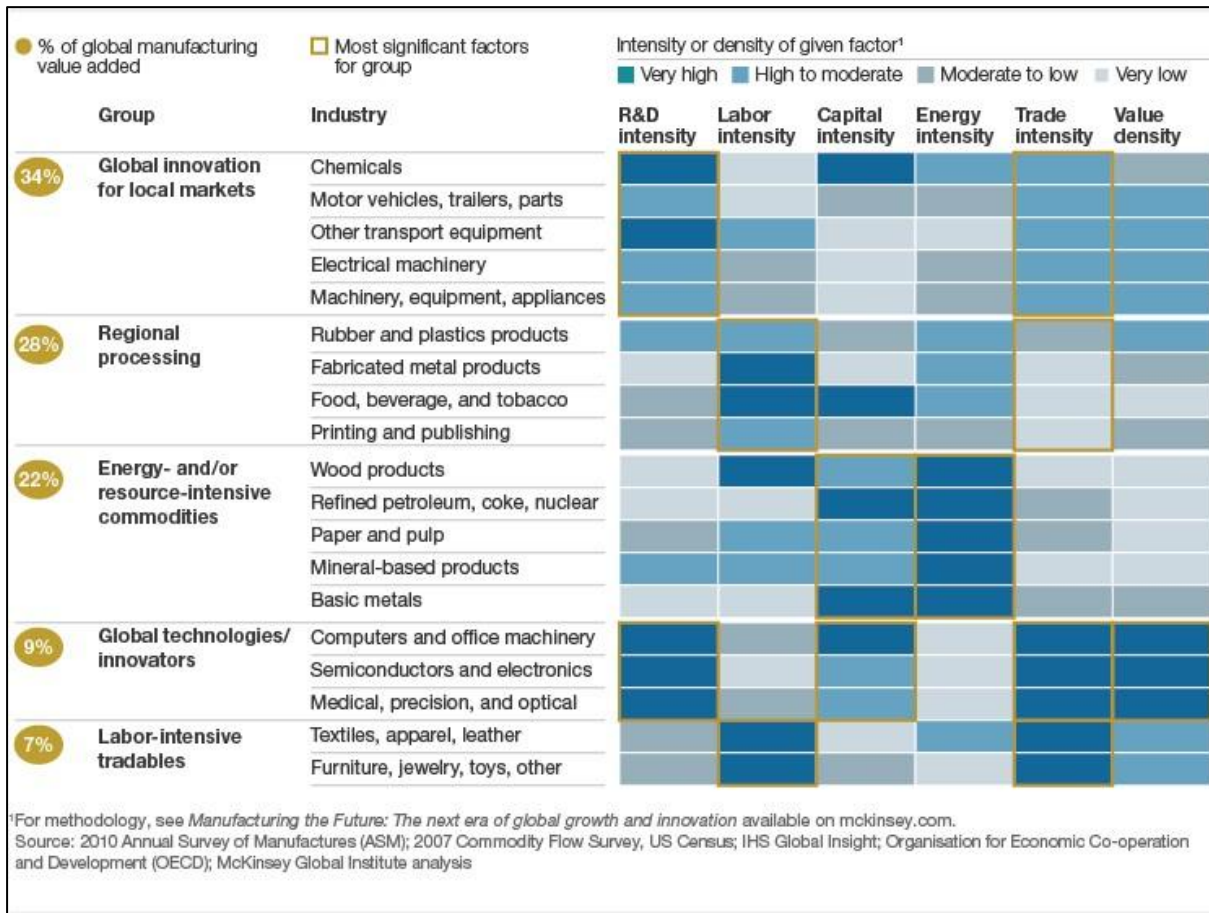
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<sup>8</sup> "Making" Our Future: What States Are Doing to Encourage Growth in Manufacturing through Innovation, Entrepreneurship, and Investment – Report released by the Governors National Association (January 2013)

<sup>9</sup> The Economist Global Niche Players, 2.2.2013

<sup>10</sup> "Making" Our Future: What States Are Doing to Encourage Growth in Manufacturing through Innovation, Entrepreneurship, and Investment – Report released by the Governors National Association (January 2013)

<sup>11</sup> McKinsey Global Institute – Manufacturing the future: The next era of global growth and innovation

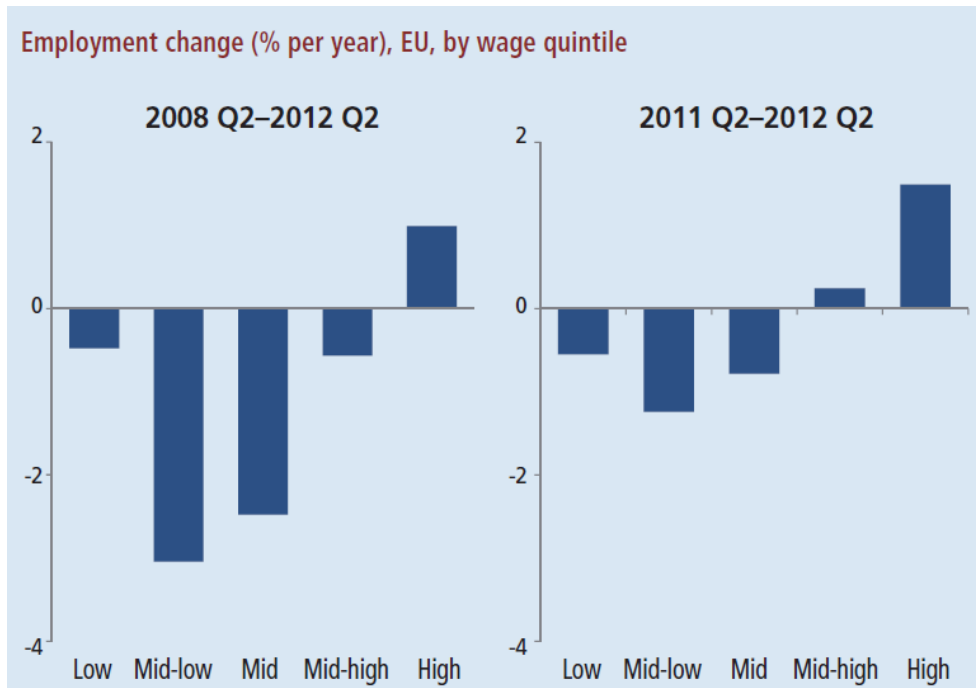


Public authorities – including RDAs – and businesses need to draw operational conclusions for these findings in terms of regional marketing, building unique competitive advantages, R&D+I, design, big data mining and anticipating job losses and local business offshoring due to a loss of regional competitive advantages in the new normal.

### 2.3 Are Labour Pools Delivering?

According to the European Jobs Monitor and as illustrated in the graph below,<sup>12</sup> only the highest paid jobs grew in Europe between 2008 and 2012 – and again between Q2 2011 and Q2 2012:

<sup>12</sup> Cf. Eurofound – European Foundation for the Improvement of Living and Working Conditions, *Where is the job growth in the EU?*, December 2012



Source: Eurostat, EU LFS (author's calculations)

For several years now, activities in connection with the sustainable economy have been expected to become substantial job reservoirs. However, statistics paint a rather mixed picture in different industries and countries. In Europe, the sub-sectors of that industry having been at the basis of the strongest job creations between 2000 and 2010 are renewable energy and recycling<sup>13</sup>. Jobs related to the environment and the efficient use of resources have increased from 2.5 to 3.4 million during this period.

The impact of emerging industries on employment is disconnected from the trading value of businesses. Worth underscoring in this context for instance, is that despite \$9 billion in market capitalisation, Twitter “only” employs 400 people.<sup>14</sup> By comparison, PSA's capitalisation is of the order of 2 billion Euros (on 20.4.2013) for more than 200,000 employees, while Google's one is 72.5 billion Euros for 32,500 employees.

## 2.4 The European Paradox: R&D Excellence but an Industrial Desert in Emerging Sectors

For years, Europe posited that its R&D excellence would offset the offshoring of traditional activities to low labour cost countries. It seems that in coming sectors, this positional advantage has to a large extent failed to pan out. Indeed, while EU centres of excellence are as good as their competitors, Europe fails to turn this excellence in key future industries into a sizeable commercial competitive advantage. One explanation for this may be found in the weight of public research in Europe. Researchers in such institutions are likely to be more interested in the IP-related aspects of their scientific discoveries than in their commercial applications. This is shown in the table<sup>15</sup> below.

<sup>13</sup> Source: Ecorys

<sup>14</sup> Source: Les Echos, 21.2.2013

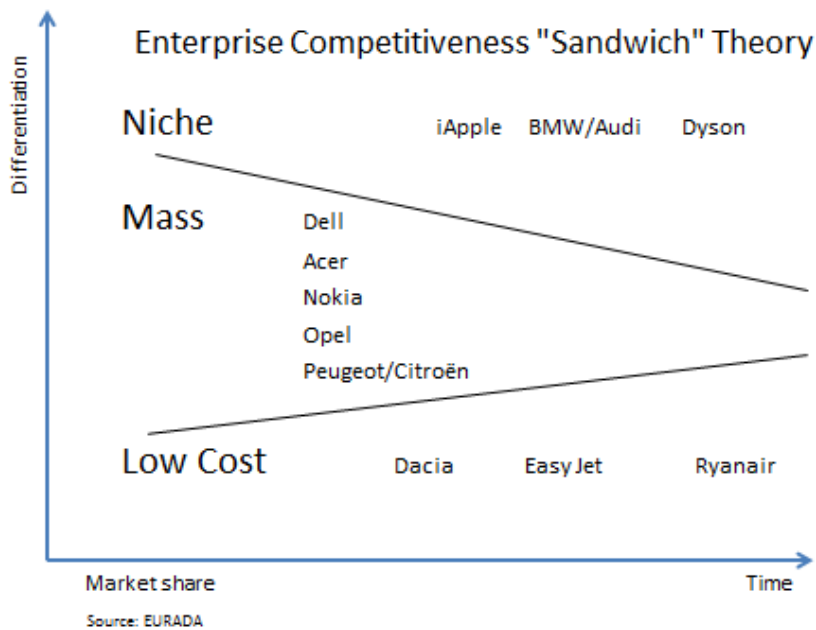
<sup>15</sup> Cf. Fraunhofer ISI, Economic foresight study on industrial trends and research needed to support the competitiveness of European industry around 2025

Patent Shares and Production Shares in Key Technologies (in %)		Europe	North America	Asia	Others
Lithium-Ion Battery	Patent Share (2005-2008)	10	17	60	13
	Production Share (2008)	0	1	87	12
	Market Share (2008)	0	1	95	4
Bioethanol	Patent Share (2005)*	36	34	23	7
	Production Share (2009)	5	54	3	38
	Market Share (2010)	6	62	5	27
Microelectronics	Patent Share (2005)	22	30	46	2
	Production Share (2010)	5	11	65	19
	Market Share (2010)	13	18	69	0
PV-Cells	Patent Share (2005)**	29	27	42	2
	Production Share (2009)	13	12	57	18
	Market Share (2011)	71	6	11	12

Source: HLEG (2011), Crean (2011), ZVEI (2011), EPIA (2011), Thielmann et al. 2010  
 \* Patents for whole industrial biotechnology \*\* Patents for photonics

### 2.5 The Sandwich Theory Applied to Competitiveness

The competitiveness of EU businesses and regions must rest on unique competitive advantages, i.e. differentiation from potential competitors. Today, two types of differentiation seem to bear fruit: up-marketing – up to and including to luxury level – and low-costing. The graph below illustrates this phenomenon.



To help a key industry move up the market, public authorities need to draw inspiration from the lessons learned by the French luxury industry. Its strategy rests on the development areas below:

- a) In the luxury industry, added value stems from:
  - authenticity;
  - scarcity;
  - creativity;
  - innovation;
  - fast renewal of the product range
  - loyalty.
- b) New markets open through:
  - geographical diversification;
  - product development;
  - unique distribution channels: branded shops and flagship stores or technological showcases;
  - up-marketing product ranges and controlling the entire value chain.

Looking at the car manufacturing industry for instance, the market share of high-end cars went up from 12.3% to 17.2% between 2000 and 2012 thanks to Audi and BMW, whose unit output respectively grew 27% and 23% from 554,700 to 705,500 units and from 523,100 to 641,300 (+23%) between 2002 and 2012. Over the same period, Mercedes production fell 20% from 746,000 to 598,000.<sup>16</sup>

In air transport, low cost airlines (Ryanair, JetAir) are forcing national airlines to thoroughly review supply. Their market share is now 38% in Europe, with a peak of 57% in Spain<sup>17</sup>!

This sandwich theory applies to regional competitiveness too. Analysing the developments in the regions' GDP over the period 2004-2010 shows that capital regions (niches) are growing faster than the others.

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<sup>16</sup> Les Echos, 6.3.2013

<sup>17</sup> Les Echos, 17.4.2013

### 3. Some Thoughts on How to Define the Regional New Industrial Normal

#### 3.1 Emerging Industries

At the behest of DG Enterprise and Industry, PwC Consultants conducted a survey of hotspots in seven emerging industries in the EU. The outcome of this survey yielded the following ranking of “50 hotspots”:

- ***Creative industries***  
Antwerp, Ile-de-France (Paris), Inner London
- ***Eco industries***  
Oberösterreich (Linz), Jihovýchod (Brno), Etelä-Suomi (Helsinki)
- ***Experience industries***  
Berlin, Attiki (Athens), Berkshire-Buckinghamshire-Oxfordshire
- ***Maritime industries***  
Etelä-Suomi (Helsinki), Catalonia (Barcelona), Lisbon
- ***Mobility industries***  
Yugozapaden (Sofia), Catalonia (Barcelona), Lombardy (Milan)
- ***Mobile services***  
Mazowieckie (Warsaw), Stockholm, Inner London
- ***Personalised medicine***  
Oberbayern (Munich), Stockholm, Provence-Alpes-Côte-d'Azur

#### 3.2 Key Enabling Technologies (KETs)

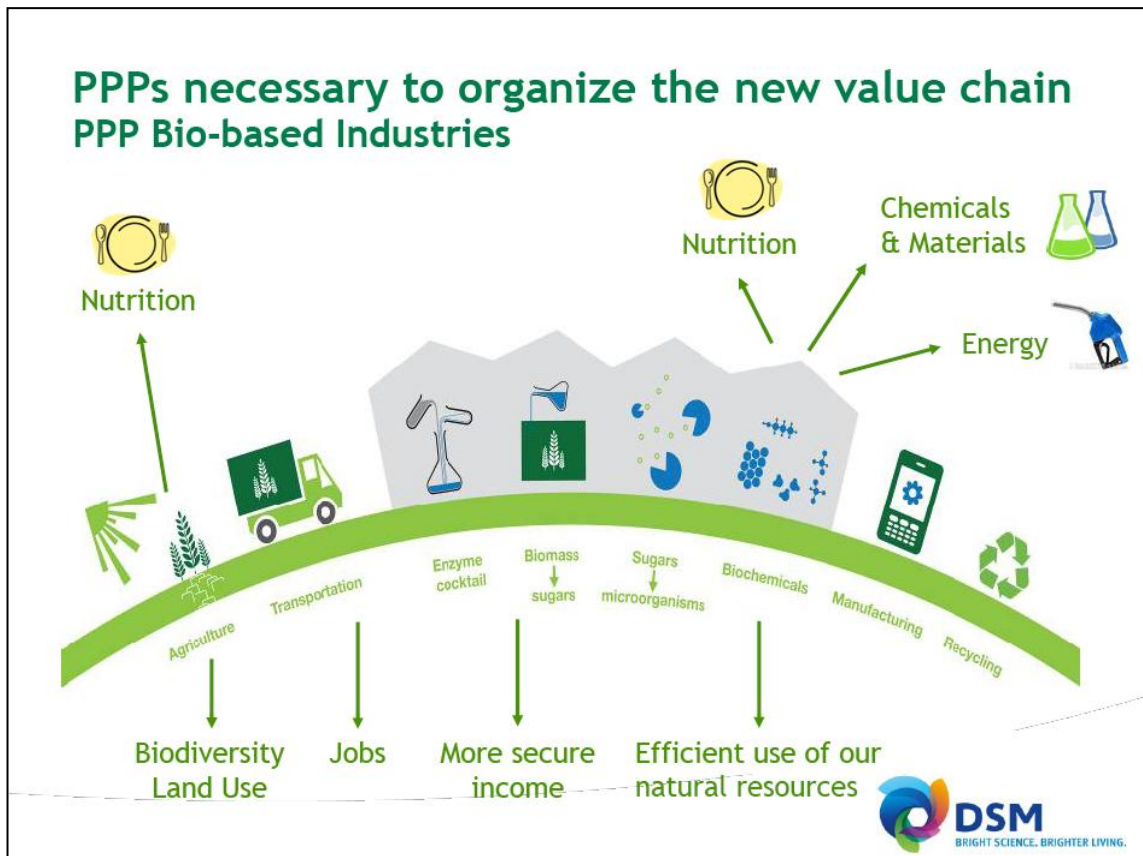
The EU Commission identified the six technologies below as KETs: micro/nano-electronics, photonics, nanotechnology, biotechnology, advanced materials and advanced manufacturing systems, i.e. technologies that are knowledge, R&D+I investment and capital intensive and require skilled manpower.

Experts expect demand for these technologies to grow fast. DG Regio is encouraging regions to include KETs into their RIS<sup>3</sup> because they can be deployed in all – including the most traditional – sectors and hence become sources of competitiveness for regions. Key to regional success will of course be the ability to detect niche markets associated with these strategic sectors to either support the emergence of demand or modernise traditional industries.

#### 3.3 Bio-based industries

The chart below shows the path advocated by Dutch company DSM to convert the oil-based economy into one resting on biodiversity.

This approach may be complemented by a different use of oceans, including micro-algae.



### 3.4 Robotics

In their quest for re-industrialisation, public authorities in the US are betting on “smart robotics.” For instance, the robot named Baxter developed by Rethink Robotics<sup>18</sup>, a business based in Massachusetts and supported by the Jeff Bezos venture capital fund, could according to experts be destined for a bright future. Experts predict that the development of robots of this kind will give birth to a new industry in the US and will enable jobs to be created in this sector and from the repatriation of activities previously offshored to China or India. People employed in these factories will have other skills and will be dedicated to both robot training and supervision. However, there is reason to expect reluctance to accept these smart robots in factories, in the sense that traditionalists will argue that replacement of certain categories of staff by robots creates a dilemma.

Substantial disparities are in evidence among the Member States in terms of their fleet of installed industrial robots. In 2011, there were more than 157,000 in Germany compared to 62,000 in Italy, 34,500 in France, 29,500 in Spain and 13,600 in the UK.

### 3.5 Le 3D Printing (additive manufacturing)

This object production technique developed at MIT enables solid 3D objects of all shapes to be produced in layers. The materials used include resins, textile, metal and wood. Research in this field also investigates human cell and bone tissue.

<sup>18</sup> E-Commerce News 2.2.2013 – Robotics: Revitalizing American Manufacturing

This technique could revolutionise both prototyping and industrial production and might herald a “do-it-yourself”-based economy and even provide craftsmen with new opportunities for product personalisation.

Most fab labs include such equipment, which is made available to guest businesses and entrepreneurs.

In the US, the first institute of technology to specialise in this field will be set up in Youngstown, Ohio, thanks to \$30 million in federal government funding backed by \$40 million in regional public and private money.

### **3.6 Crowdsourcing**

So far, this concept includes three realities, i.e. using third parties to conduct R&D+I activities (open source), creative production and funding activities (crowdfunding).

These days, crowdsourcing is based on specialist e-platforms. The examples below provide an illustration of what crowdsourcing has made possible:

- crowdfunding: see Symbid, Kickstarter, ...
- crowdsourcing: see Crowdfunder, Freelancer, ...
- micro-manufacture: see Pomoko, Quirky.com
- e-commerce: see Amazon, Google.Aps, Etsy, ...
- open innovation: see Elance, Guru.com
- the IP market: see Innocentive, Crowd IPR, yet2com, Ocean Tomo...

In the USA, several administrations (DRAPA, NASA) are using crowdsourcing to develop new solutions (see point 2.1).

### **3.7 Innovation of the innovation process**

To leverage market opportunities provided by emerging countries, EU businesses – and SMEs in particular – must realise that they have to adapt their products/services/solutions to the needs of those countries. This may require adjusting usual (i.e. European) product or infrastructure size to the size of those markets. This notably applies to renewable energy production, water, healthcare and education. In other cases, innovation developed in emerging countries may have niche applications in Europe. Examples of reverse innovation developed by General Electric, Nestlé or Tata Motor have established the feasibility of this approach. Finally, in times of financial crisis, all (public and business) stakeholders can develop frugal innovation (called Jugaad in India) seeking to deliver innovative solutions/products/services thanks or due to limited financial resources. Innovation of this kind may result from reducing product complexity, cutting costs or re-engineering a production process.

*Roland Berger Strategy Consultants defines frugal products as simple, affordable solutions that meet customer needs in emerging markets. They are defined along the attributes "Functional, Robust, User-friendly, Growing, Affordable and Local" and are found in most industries<sup>19</sup>.*

Companies such as Veolia Environnement (F)<sup>20</sup> and Honey Bee (IN)<sup>21</sup> are trying to detect innovation solution ideas at local level and then to disseminate them in various countries all over the world.

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<sup>19</sup> Roland Berger Strategy Consultants: Frugal products – Study results – February 2013

<sup>20</sup> Veolia Environnement: Initiative FACTS



Europe could turn the challenges associated with its population dynamics, with reducing its dependency on fossil fuels and with the transition to the digital economy, incl. mining big data into market opportunities provided that it sets appropriate framework conditions in fields including applied research, transnational and trans-sector cooperation through inter-cluster collaboration and innovative public-private partnerships.

There are 3 ways for EU businesses to penetrate LDC markets: (i) adjust their business model based on existing products (e.g. Schneider renting lamps at monthly rates equivalent to the cost of candles or Bel<sup>22</sup> unit-selling *Laughing Cow* cheese portions); (ii) tailor their products to individual market needs (e.g. Danone's<sup>17</sup> Ultramel yoghurt that does not need to be kept cool); (iii) providing their know-how through innovative partnerships (Ericsson and Nokia Siemens Network with India's Airtel or Total using its network of petrol stations in Africa to distribute solar lanterns).

Types of innovation	Good practices
Reverse and frugal innovations	GE Electrocardiogram device Siemens X-ray apparatuses Danimals Yogurt in South Africa Veolia FACTS Initiative
Maximizing the opportunities of less developed countries	Danone Ultramel yogurt Total solar lanterns distribution channel Bell unit selling Airtel partnership with Ericsson and Nokia Siemens network

### 3.8 Proximology

In an economic context whereby social and societal divides are widening due to the side effects of globalisation and financial capitalism, regional development policies– and therefore RDAs – will need to develop, support and stimulate a societally responsible regional economy. This will be achieved by stimulating service innovations and social innovations and by leaning on the "penta helix" principle.

This type of development will require recruiting different stakeholders (civil society and alternative finance) than the ones involved in the traditional economy (triple helix).

Regions will need to invest in solutions for the "economy of poverty" in order to propose alternatives to "economies of charity or donation" and to the market economy. Opportunities will emerge in the field of housing, food, transport, insurance, credit, consumption, education and health. Service innovations in co-consumption (peer-to-peer), bio-distribution (bulk), proximity (short circuit), production process consuming few raw materials (circular economy), second-life objects (cradle to cradle) and functionality (hire rather than purchase) may be stimulated by the public authorities. New forms of public-private or public-public partnership must obviously be invented to meet these new needs or new consumer habits.

Proximology can be defined by the implementation of regional products/services/solutions in response to a local market failure or the absence of a relevant public offer.

<sup>21</sup> Enjeux Les Echos, February 2013

<sup>22</sup> Les Echos, 17.1.13.

Types of innovation	Good practices
Societal innovations	The Big Lemon community interest company (Brighton, UK) Alto University Camp for societal innovation IBM innovation jam (a model to involve citizens)
Cradle to cradle and circular innovations	Circular economy 100 club: Coca-Cola Company, IKEA Group, Cisco, Vestas ... Gyproc: certified cradle to cradle company Trigema: biodegradable T-shirts Nike Considered: line of shoes
Eco-innovations	Ecovert: ecological sound cleaning products Stella McCartney eco-luxury brand Value chain assessment: Puma, Mark & Spencer's, Siemens

## 4. The New Normal for RDAs

In recent years, diverging trends have emerged when it comes to the role of RDAs. Still on everyone's mind is the closure of all English RDAs on the altar of political dogmatism. More recently, RDA closures have been announced for economic reasons (Shannon Development in Ireland, Ouest Atlantique in France) or regional governance motives. Other RDAs have seen their budget drastically cut. However, countries like Turkey, Croatia and Albania are investing into the concept. Finally, in other countries (France, Spain), new types of RDAs are born of the merger of pre-existing regional organisations.

There is reason to wonder about the future business model of RDAs in terms of both management and activities.

Like all businesses in the EU, RDAs are probably at a crossroads: they will have to either upmarket or position themselves as a low cost product.

Upmarketing requires RDAs to receive financial and human resources to become knowledge-intensive hubs and so infuse and support changing unique competitive advantages in the region for which they are responsible. Under the low cost option, their only role will be to investigate applications meeting day-to-day regional economic policy objectives.

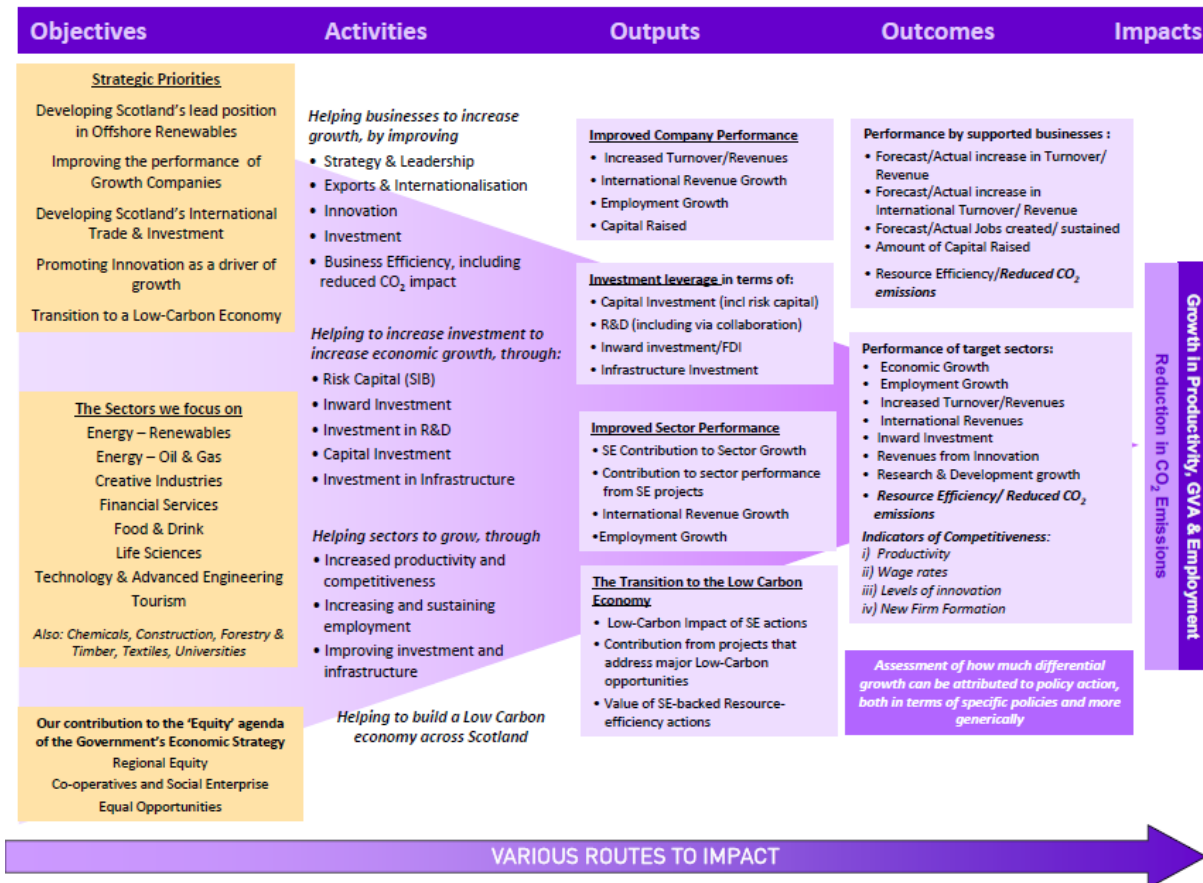
In this context, and regardless of their future, RDAs need to consider in detail some of their roles and *raison-d'être*. This will require:

- either coordinating regional actors or merging into an ecosystem;
- either improving the effectiveness of their interventions to leverage effects with the private sector or becoming a mere public funding dispenser;
- either being able to generate their own income or begging with regional authorities every year for an operating budget;
- either developing financial engineering schemes or allocating subsidies from a budget;
- either specialising in high value-added and innovative services or managing administrative procedures governing public grant allocation.

Will RDAs receive from their supervisory authorities a mandate to act as agents of change in the globalisation and knowledge-based economy? It is a role that calls for new relations with all key regional stakeholders and transnational partners. It will be interesting to assess how RDAs are included in the RIS<sup>3</sup> delivery process.

RDA managers will be called upon to put forward a vision combining flexibility, simplicity and exemplarity. This will require consulting services and processes, a cultural change and a requalification of in-house competences.

A tentative summary of the redefinition of their objectives is provided in the table below developed by Scottish Enterprise for Scotland.



Their sources of funding will probably also have to be searched in activities such as:

**Public support**

- Managing contracts from national/regional/local authorities
- Implementing EU support (ERDF, ESF, ...) and participation in EU projects

**Management of infrastructures**

Real estate and property management/development (industrial parks, incubators, science parks, ...)

**Income from provision of services**

- Invoicing SMEs for consultancy and support services
- Consultancy services to municipal and national governments
- Providing training
- Organising seminars
- Services for foreign investors
- Consultancy to foreign stakeholders
- Sale of publications

**Management of soft support**

- Management fees for running schemes such as clusters, equity/loans funds, export club, trade missions, ...
- Success fees for brokerage activities (investment readiness, partner search, business angels deals, ...)

**Capital gain from direct investment in real estate or equity in companies**

- Management of real estate parks
- Management of investment funds in venture capital.

## 5. New regional marketing tools

The market for FDI has been submitted to two fundamental changes since 2008: the reduced number of deals and the move of the centres of gravity of the world economy. In this latter field, cities are magnets for an increased number of middle-class consumers and thus of global enterprises on the one hand and the economies of the emerging countries "BRICs" and "Next Eleven" are becoming increasingly competitive and attractive on the other hand.

How to redirect regional marketing in order to reach those new targets? What can be the messages to be delivered? What are the new communication channels to be used?