



# Global Innovation Networks

GIBS: Helena Barnard & Tashmia Ismail  
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# The Big Picture





## Objectives

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- This presentation reviews the overarching aim of this project – to establish whether GINs exist:
  - How global?
  - How innovative?
  - How networked?





## Variations of GINS

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*gln* *GIN* *Gln*  
*GIN* **GIN**  
*GiN* *gin* *giN*  
*Gln*





# Level of Globalness - Internationalization

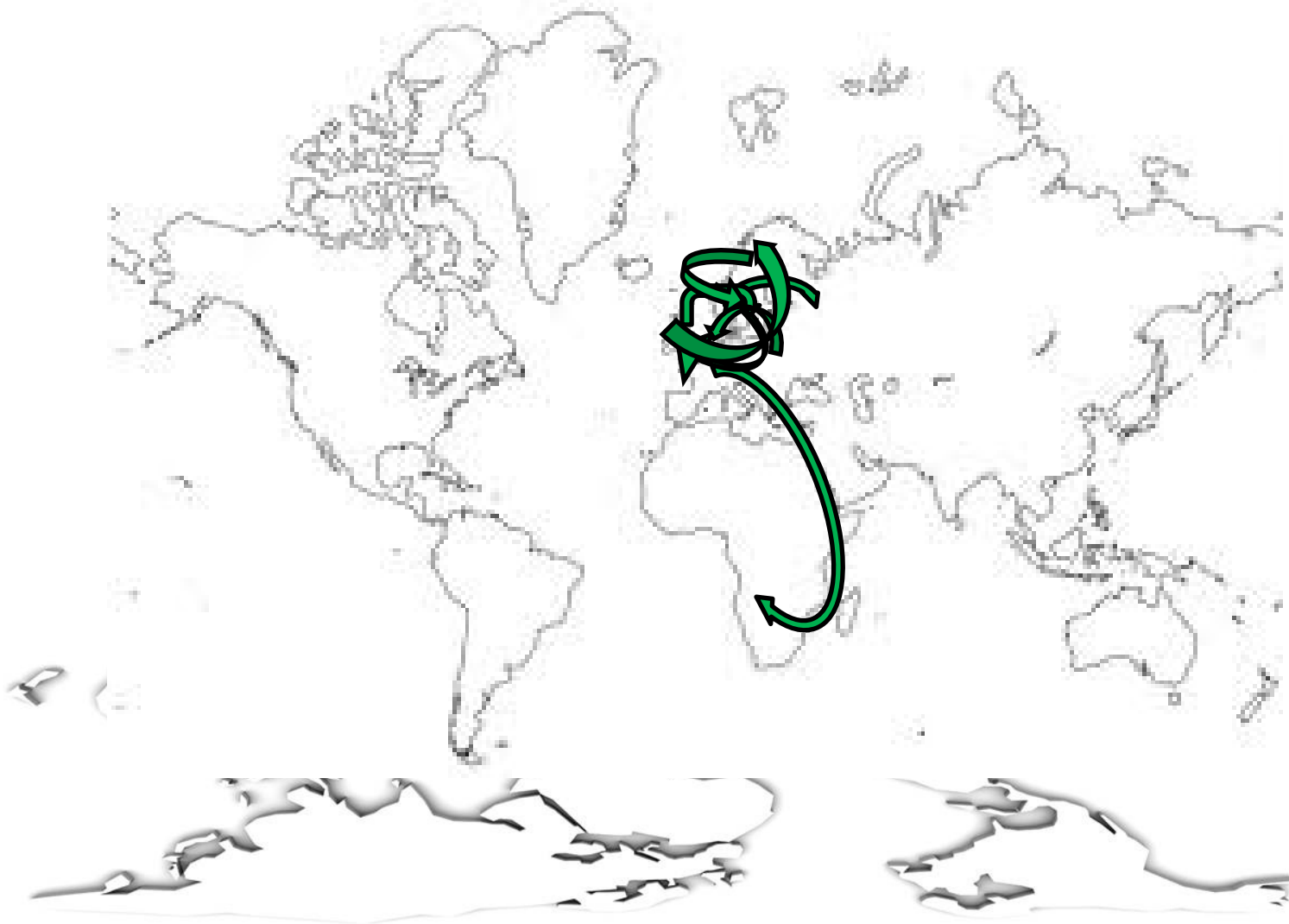
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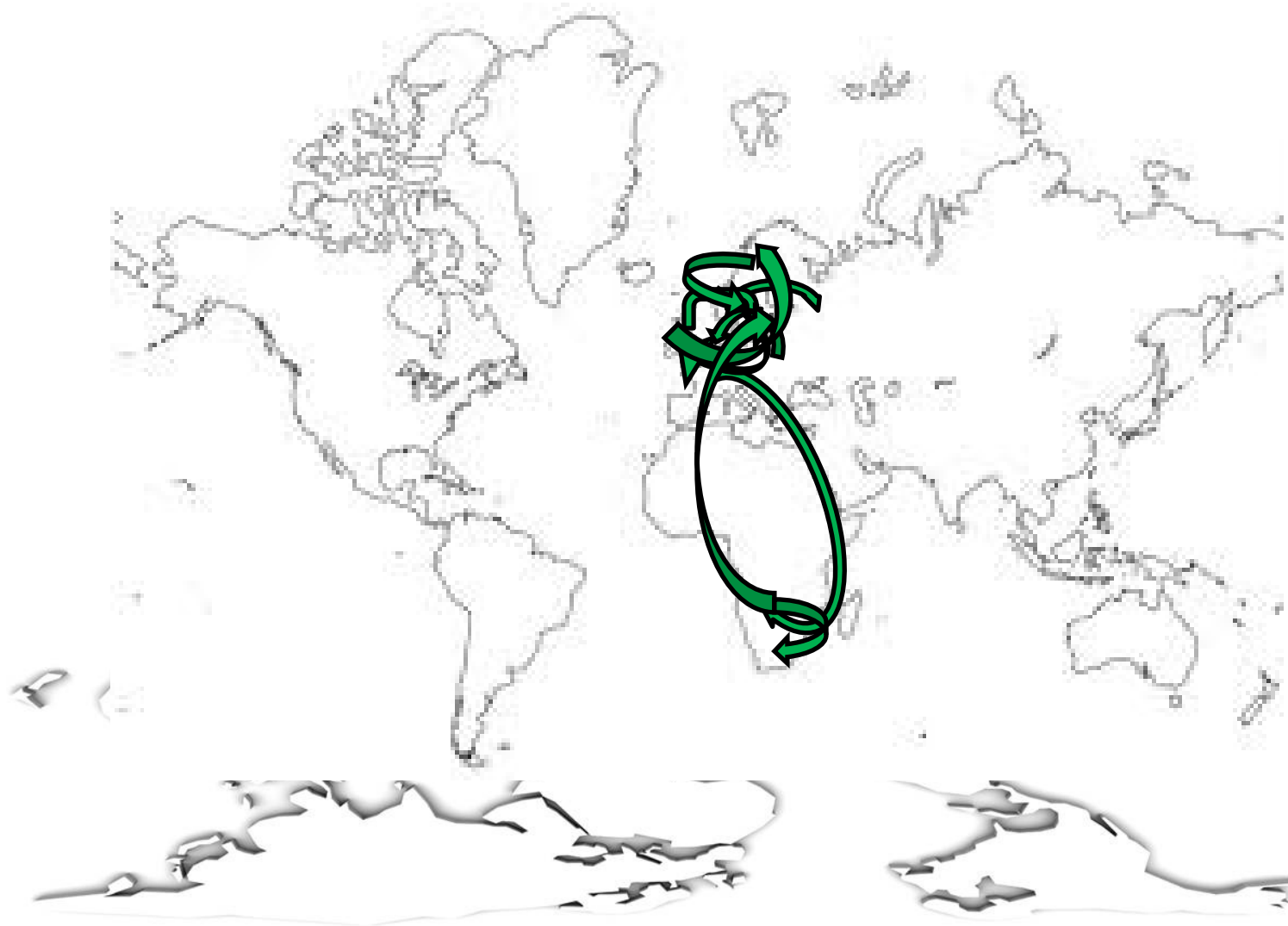
# Level of Globalness – Regionalization

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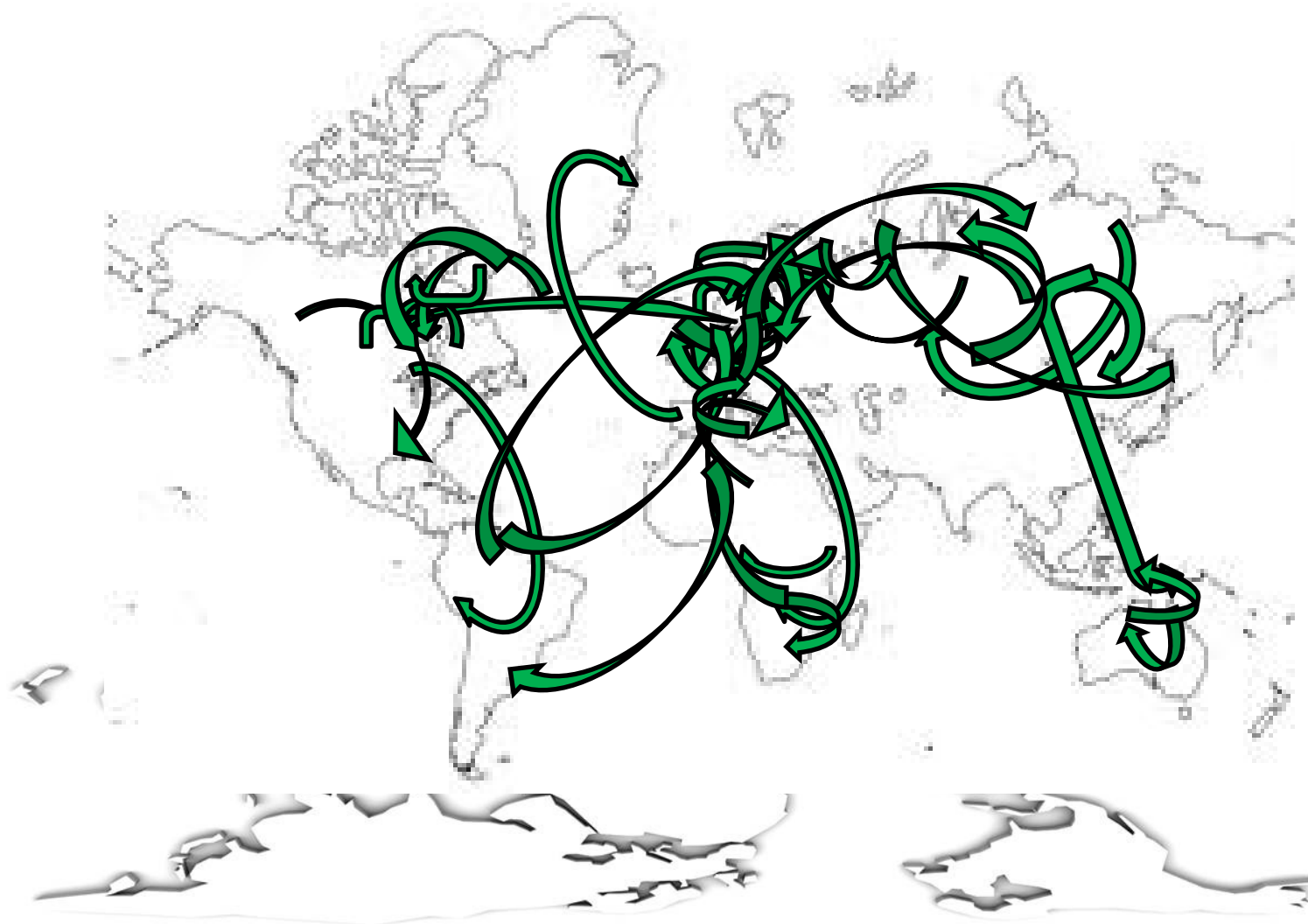


# Level of Globalness – Regionalization





# Level of Globalness – Globalization







# Level of Innovativeness

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**New to the world**

**New to the  
industry**

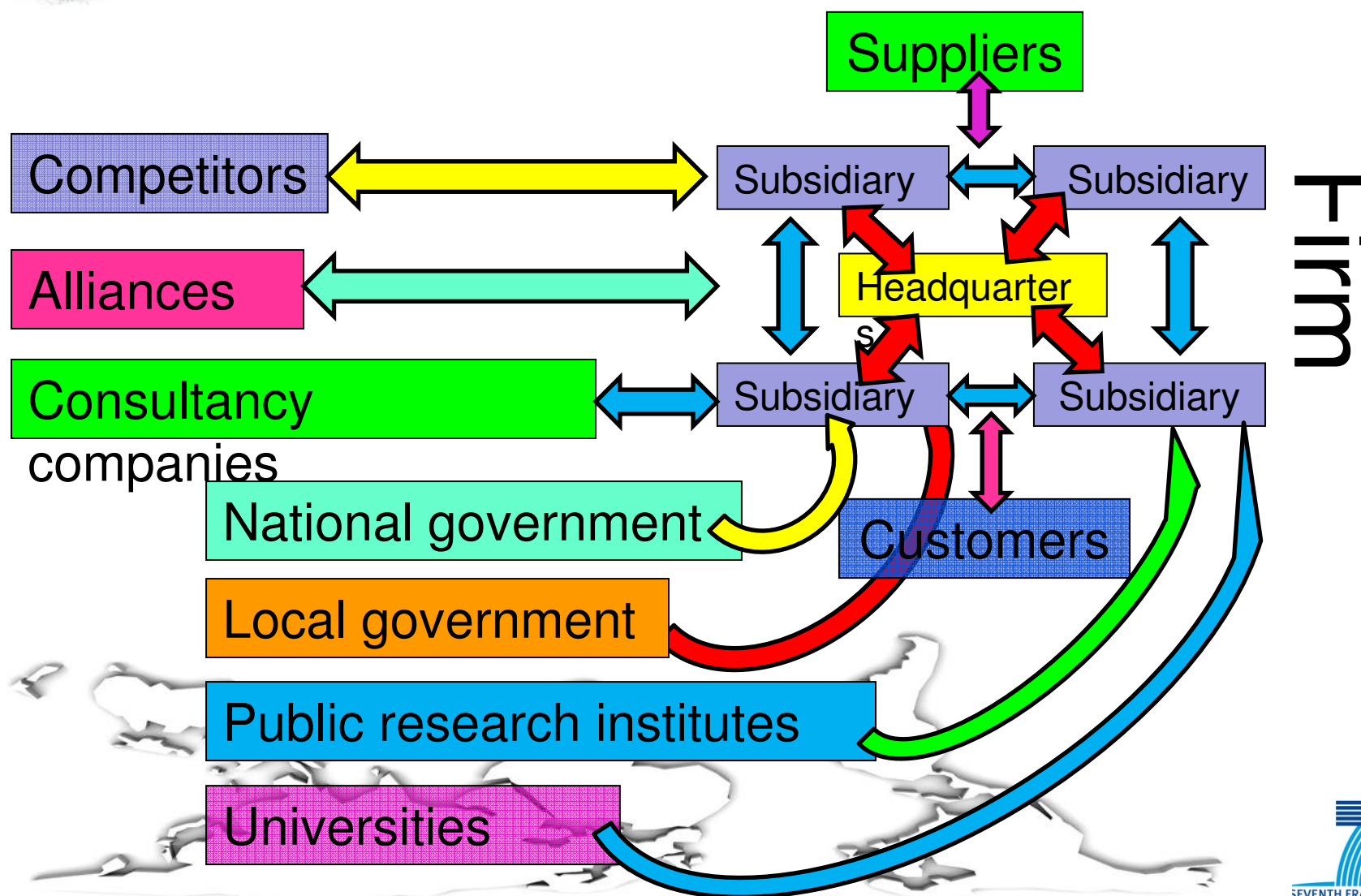
**New to the firm**

**Products  
Services  
Manufacturing  
Producing  
Logistics  
Supporting  
activities**





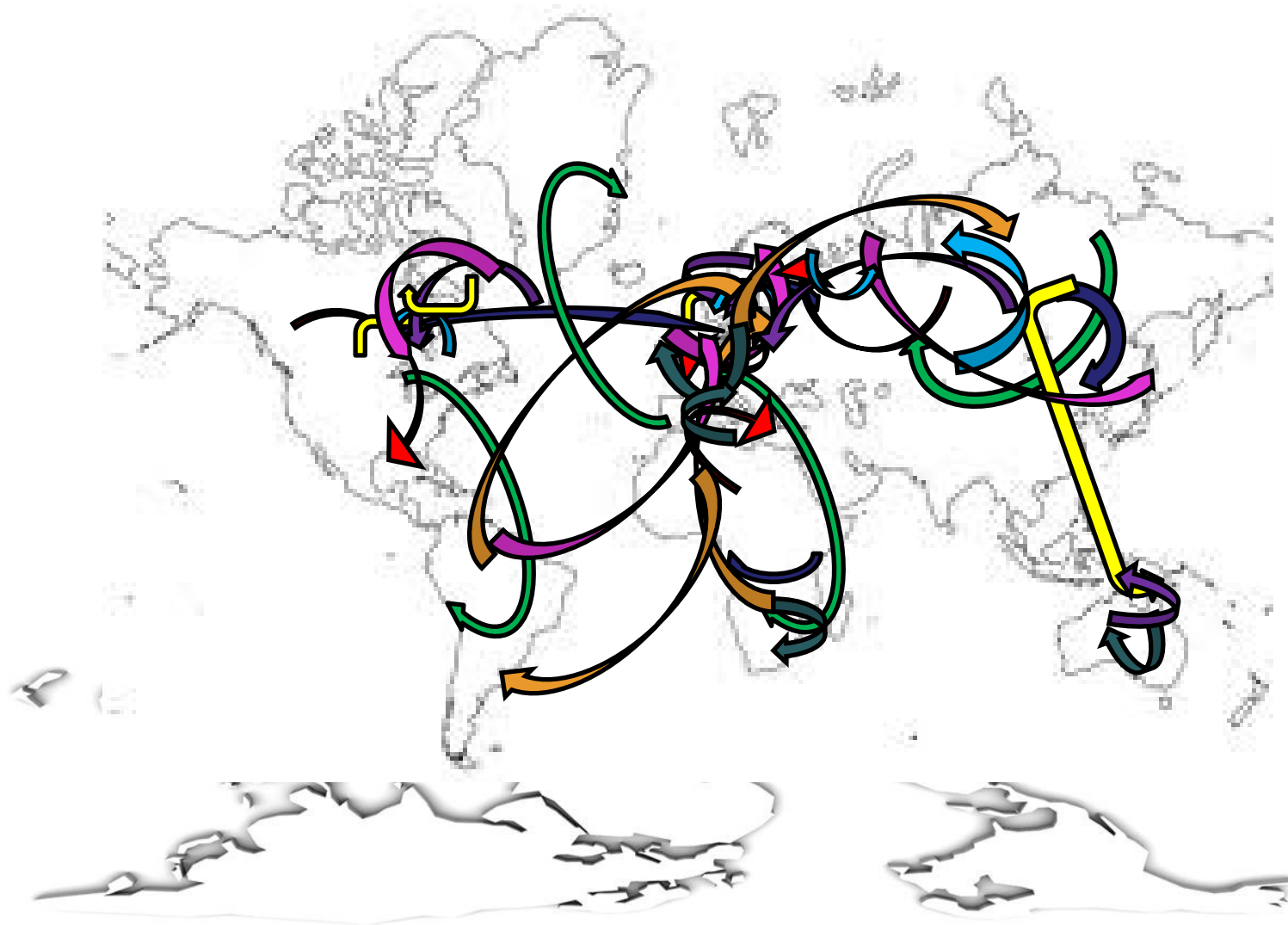
# Level of Networks





# Global Innovation Network

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How did we empirically establish  
what is going on?

## **The INGINEUS survey**





## **How we differentiated our work from previous surveys**

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- Previous surveys were limited in their scope
  - UNCTAD and EIU about 100 respondents each
- Previous surveys were not stratified by sector
  - What if one of the (primary) drivers of GINs is the sectoral dynamics?

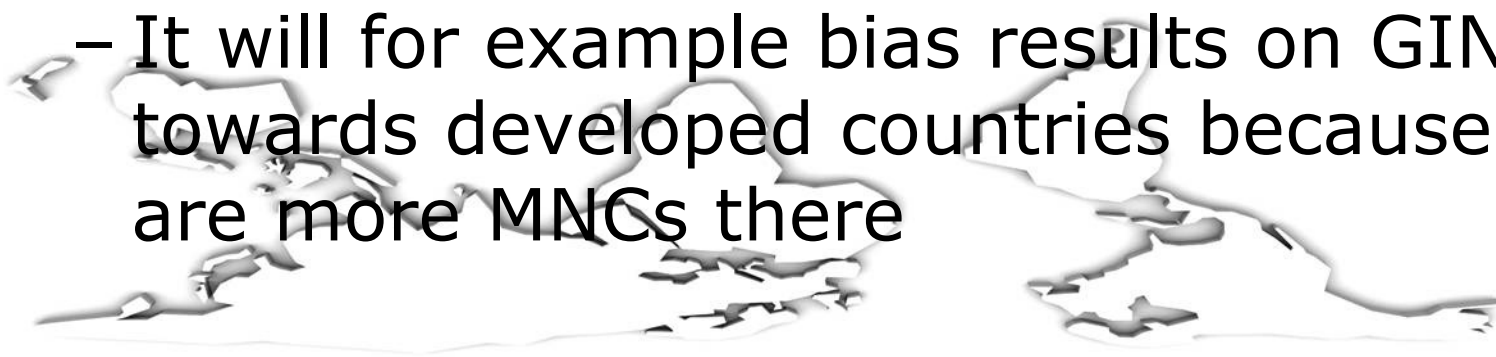




# Challenging previous assumptions

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- The sample frame of previous surveys was biased towards large firms, i.e. MNCs
  - This reflects an assumption that GINs are driven by MNCs
  - But for an emerging phenomenon such an assumption is problematic
  - It will for example bias results on GINs towards developed countries because there are more MNCs there



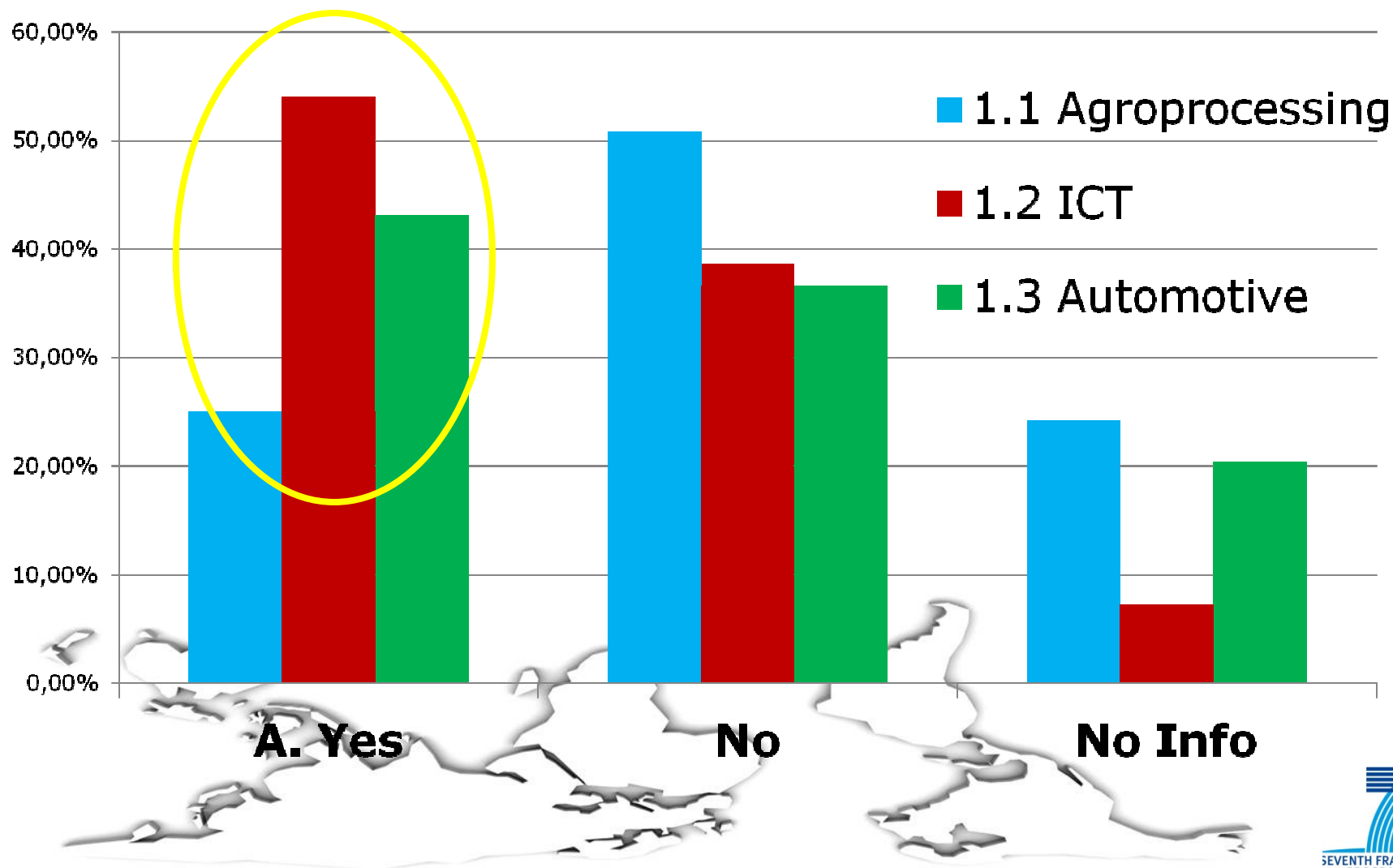


## 1192 total firm responses

Countries	ICT	Auto	Agro
Brazil		55	
China	243		
Estonia	17		
Denmark			53
India	307		
Germany		57	
Norway	181		
South Africa			84
Sweden	171	24	
<b>Total sector</b>	<b>919</b>	<b>136</b>	<b>137</b>
	<b>77%</b>	<b>11%</b>	<b>11.5%</b>



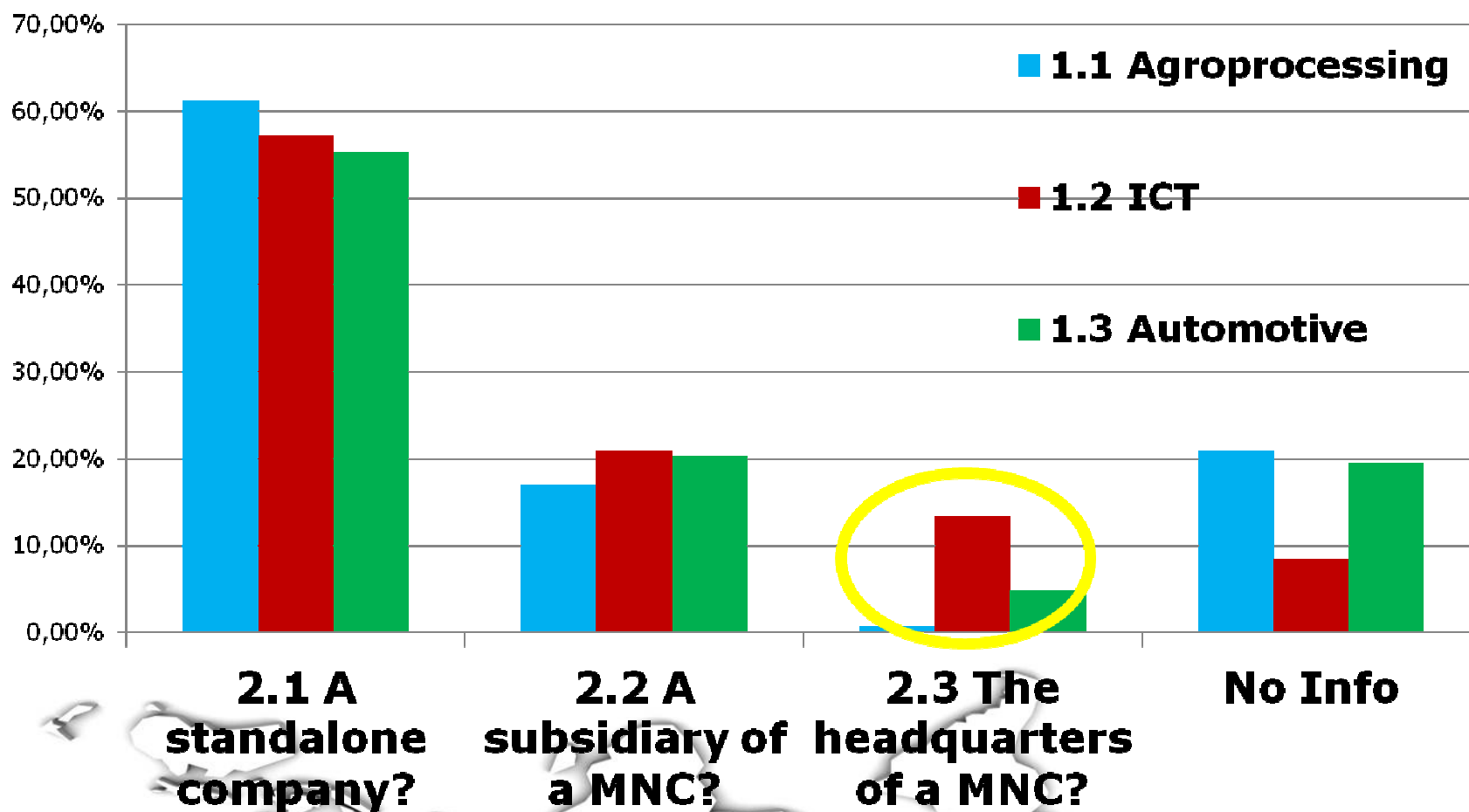
# Do you have significant R&D activity?





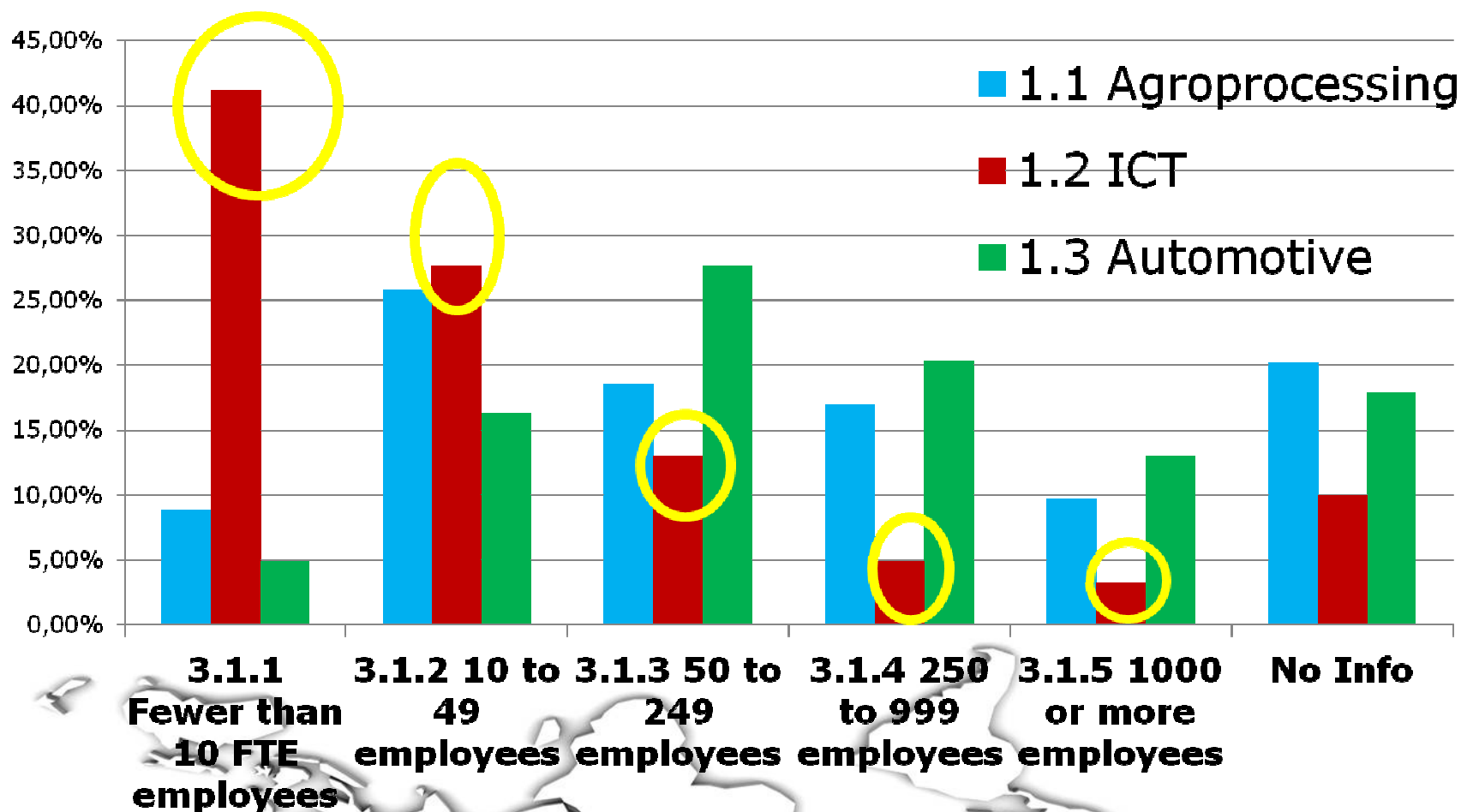


# Sectoral breakdown of enterprise type



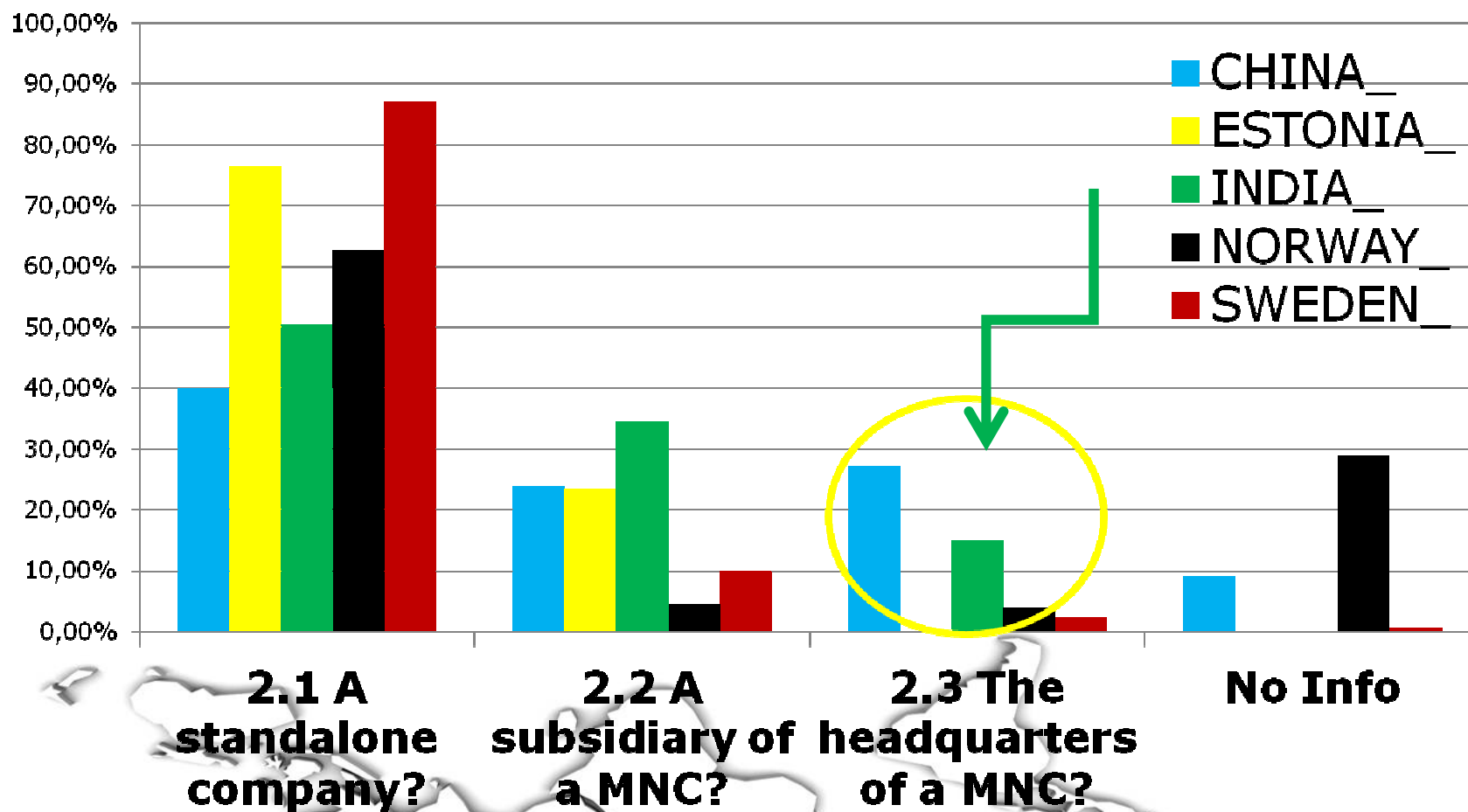


# Preponderance of small ICT firms



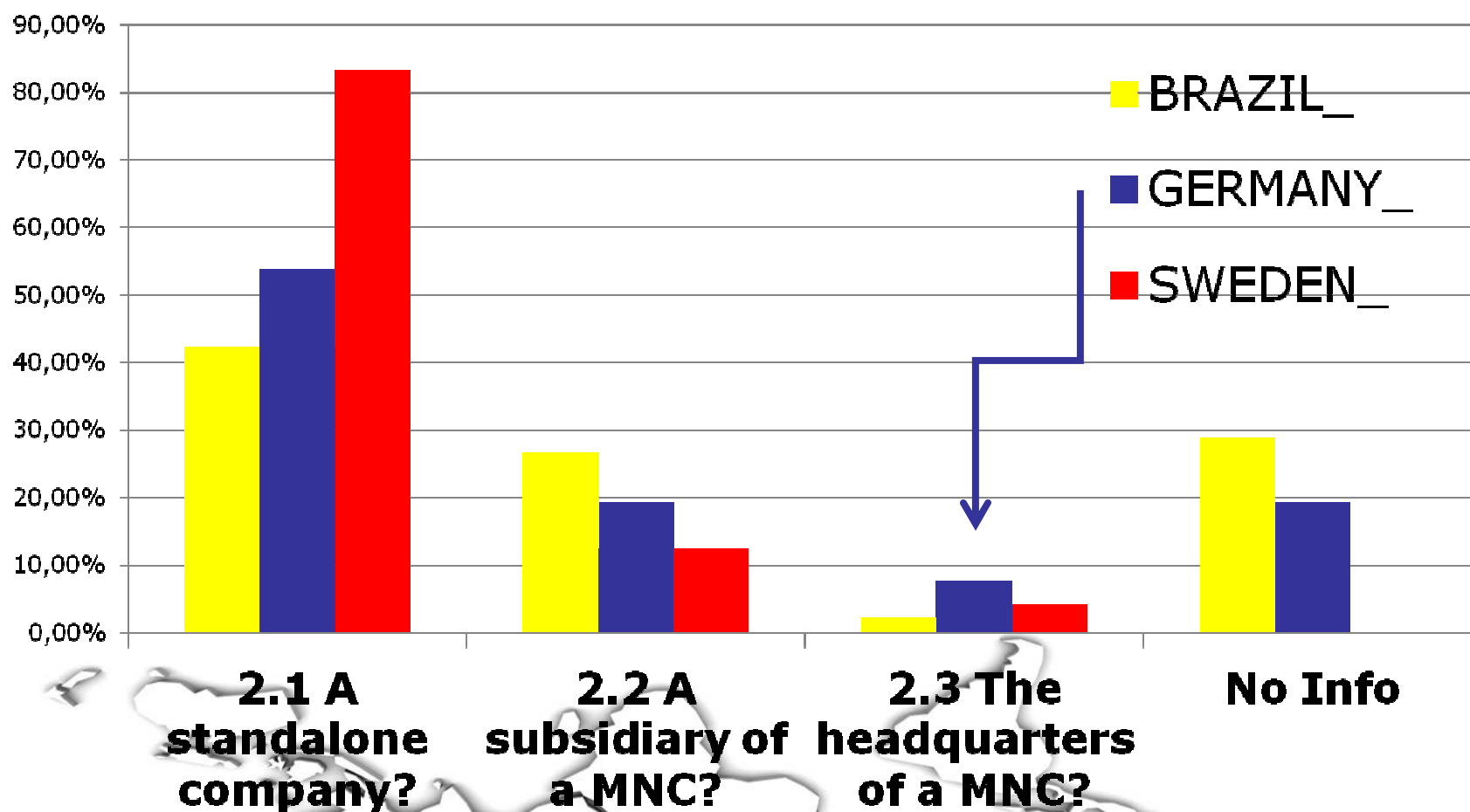


## Firm type in ICT by country



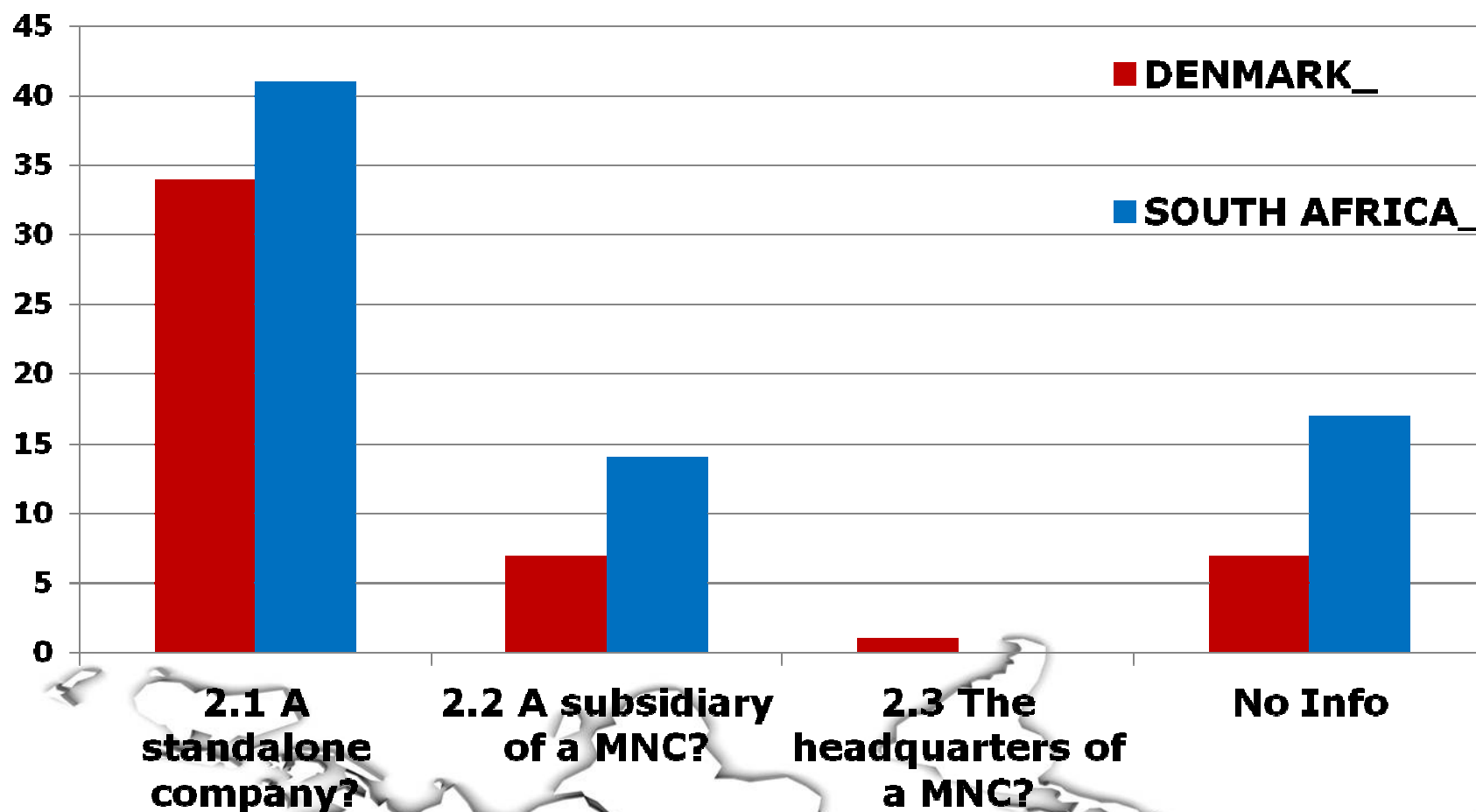


# Firm type in automotive by country



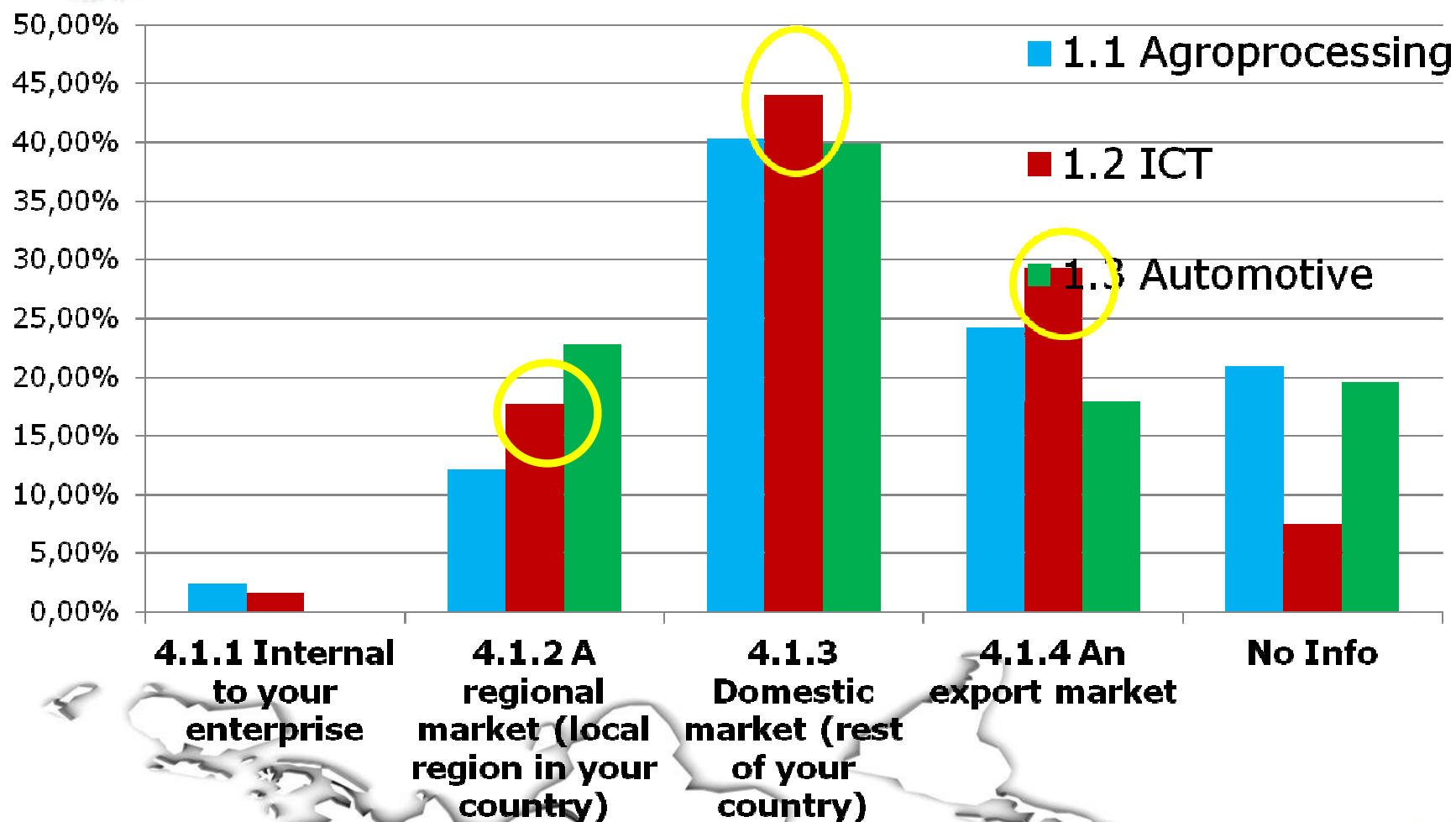


## Firm type in agro-processing by country





# Market orientation





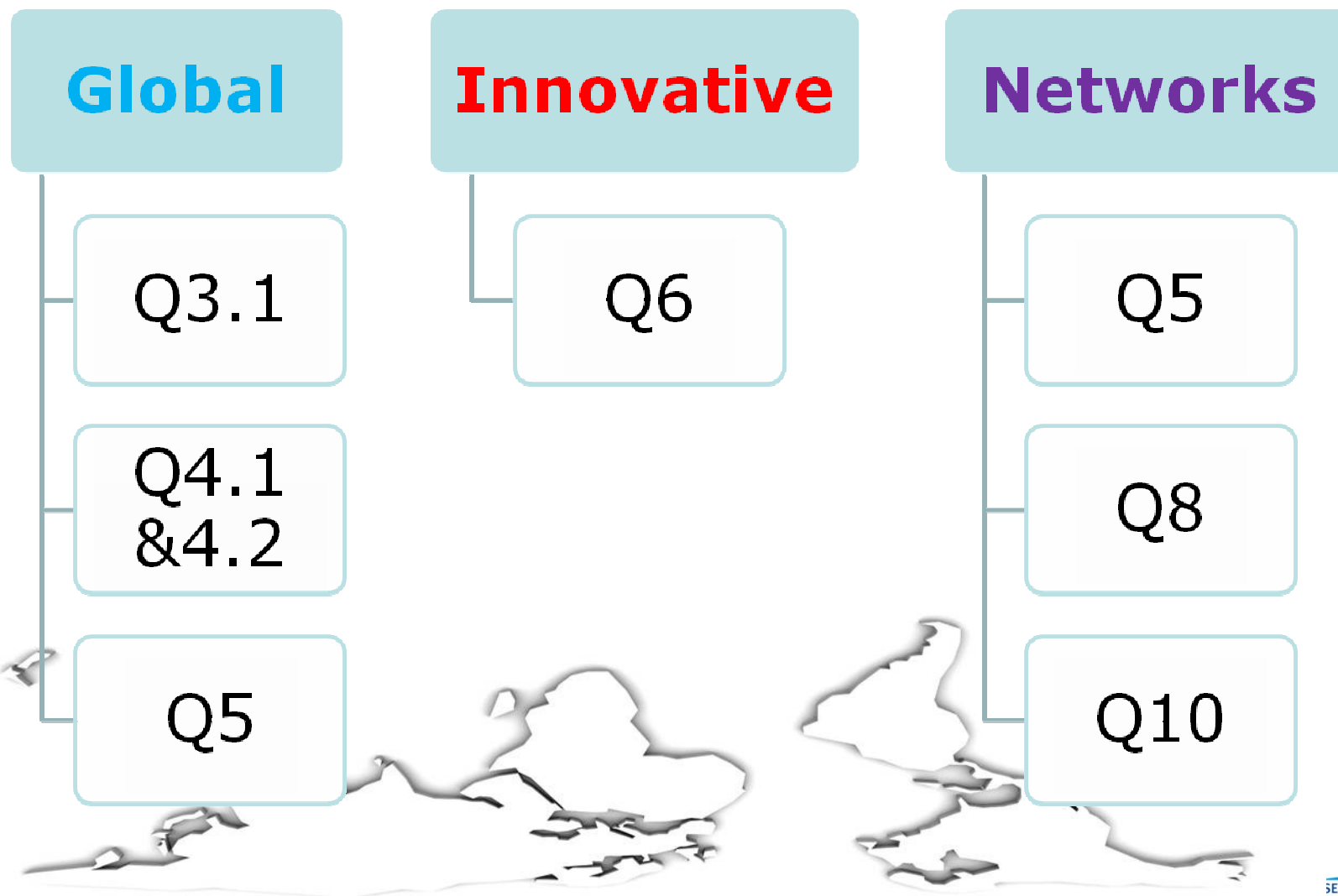
# Measuring GINs

## **What we did**





# Survey questions to address **Globalness** **Innovativeness** **Networkedness**



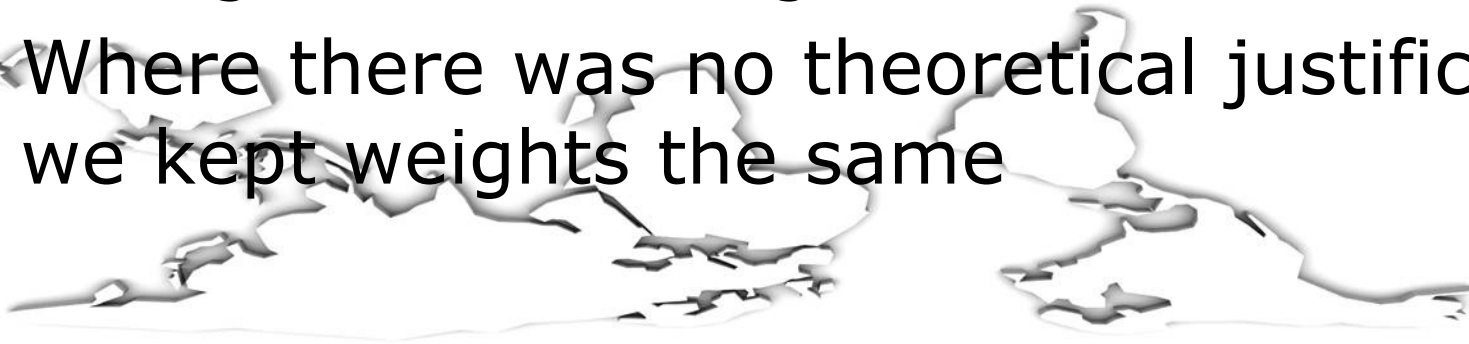




## What we did

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- Assigned scores to the questions relevant to the constructs
- We considered the theoretical background as we gave weightings
  - New to the world was weighted more heavily than new to the firm innovation
  - For globalness, own region was not as heavily weighted as other regions
- Where there was no theoretical justification, we kept weights the same





## What we did then

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- Created thresholds for low, medium and high, e.g. Globalness
  - Only home country=low
  - Two, three or four geographic blocks = medium
  - More than four geographic blocks= high
- Repeated for innovativeness and networkedness





# An overview of the process

Network			BRAZIL_	CHINA_	INDIA_	SOUTH AFRICA_	DENMARK_	ESTONIA_	GERMANY_	NORWAY_	SWEDEN_
			2	3	4	5	6	7	8	9	10
5.1 We produce most technological inputs in-house			-	-	-	-	-	-	-	-	-
5.2 We buy most of our inputs from other branches of our own MNC			-	-	-	-	-	-	-	-	-
5.3 We buy most of our technological inputs from non-MNC firms		1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10.1 Strategic Management	By your unit in your local	25	-	-	-	-	-	-	-	-	-
10.1 Strategic Management	At subsidiaries of firm i	26	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.1 Strategic Management	At subsidiaries of firm i	27	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.1 Strategic Management	At headquarters of firm i	28	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.1 Strategic Management	At headquarters of firm i	29	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.1 Strategic Management	At client firm in a developed	30	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.1 Strategic Management	At client firm in a developed	31	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.1 Strategic Management	Outsourced to a partner	32	-	-	-	-	-	-	-	-	-
10.1 Strategic Management	Outsourced to a partner	33	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.1 Strategic Management	Outsourced to a partner	34	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.2 Product development (research, By your unit in your local		35	-	-	-	-	-	-	-	-	-
10.2 Product development (research, At subsidiaries of firm i		36	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.2 Product development (research, At subsidiaries of firm i		37	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.2 Product development (research, At headquarters of firm i		38	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.2 Product development (research, At headquarters of firm i		39	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.2 Product development (research, At client firm in a developed		40	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.2 Product development (research, At client firm in a developed		41	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.2 Product development (research, Outsourced to a partner		42	-	-	-	-	-	-	-	-	-
10.2 Product development (research, Outsourced to a partner		43	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.2 Product development (research, Outsourced to a partner		44	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.3 Marketing, sales and account mar By your unit in your local		45	-	-	-	-	-	-	-	-	-
10.3 Marketing, sales and account mar At subsidiaries of firm i		46	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.3 Marketing, sales and account mar At subsidiaries of firm i		47	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.3 Marketing, sales and account mar At headquarters of firm i		48	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.3 Marketing, sales and account mar At headquarters of firm i		49	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
10.3 Marketing, sales and account mar At client firm in a developed		50	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13



# What we got...





## Questions on Globalness

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3.1 Does your enterprise have a significant share of sales activity abroad?

4.1 In geographical terms, is your enterprise's largest market:

Internal to your firm

A local region in your country

Domestic

Export

4.2 If export market was selected, indicate the geographical region(s)





## Questions on Globalness

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5.1 Regarding the development of the most important innovation of your firm in the last 3 years: (Who did you actively collaborate with), **and in which location?**

Please select all that apply:

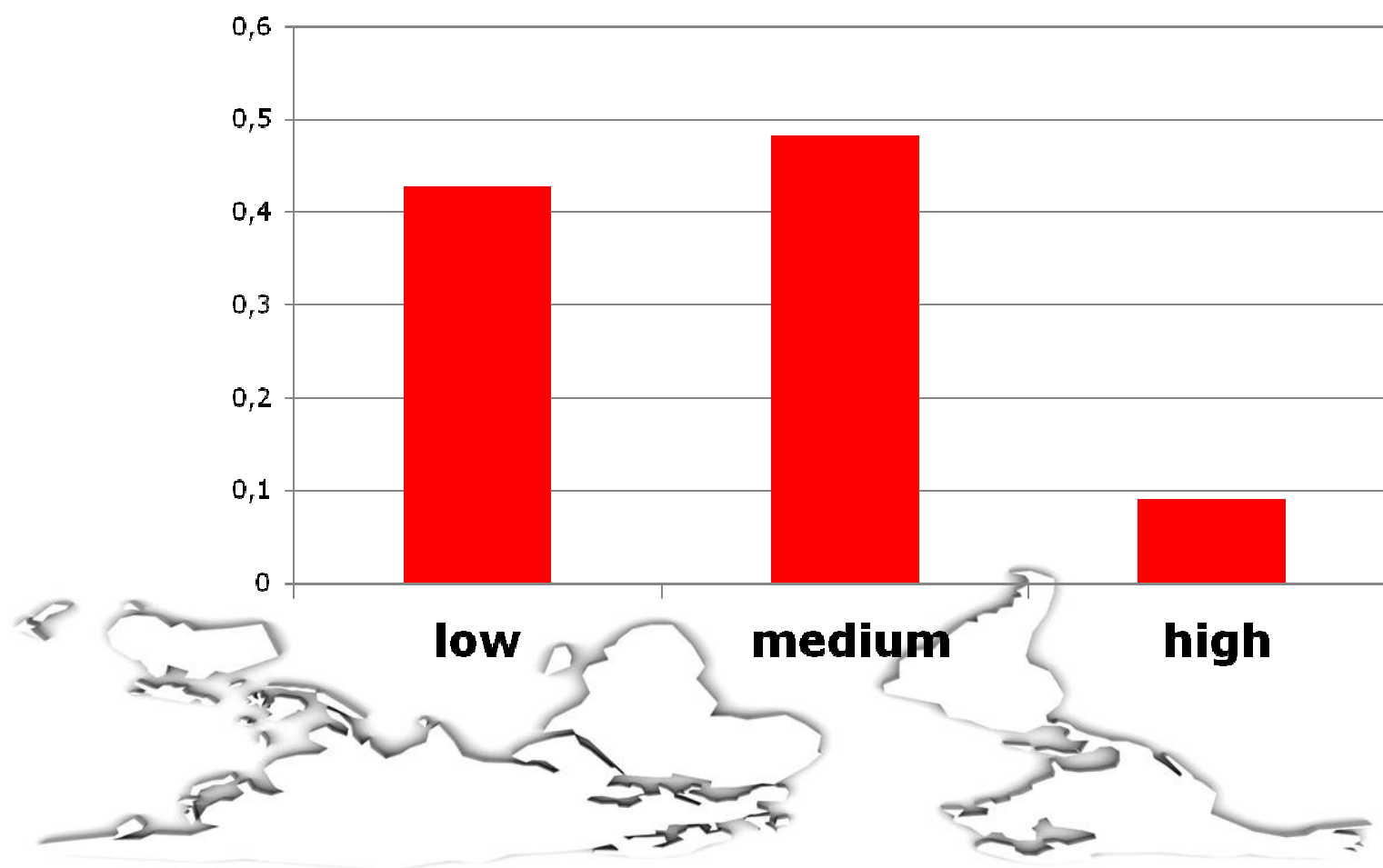
- |                     |                          |
|---------------------|--------------------------|
| – Region in country | Western Europe           |
| – Country           | Central & Eastern Europe |
| – North America     | Japan and Australia      |
| – South America     | Rest of Asia             |
| – Africa            |                          |





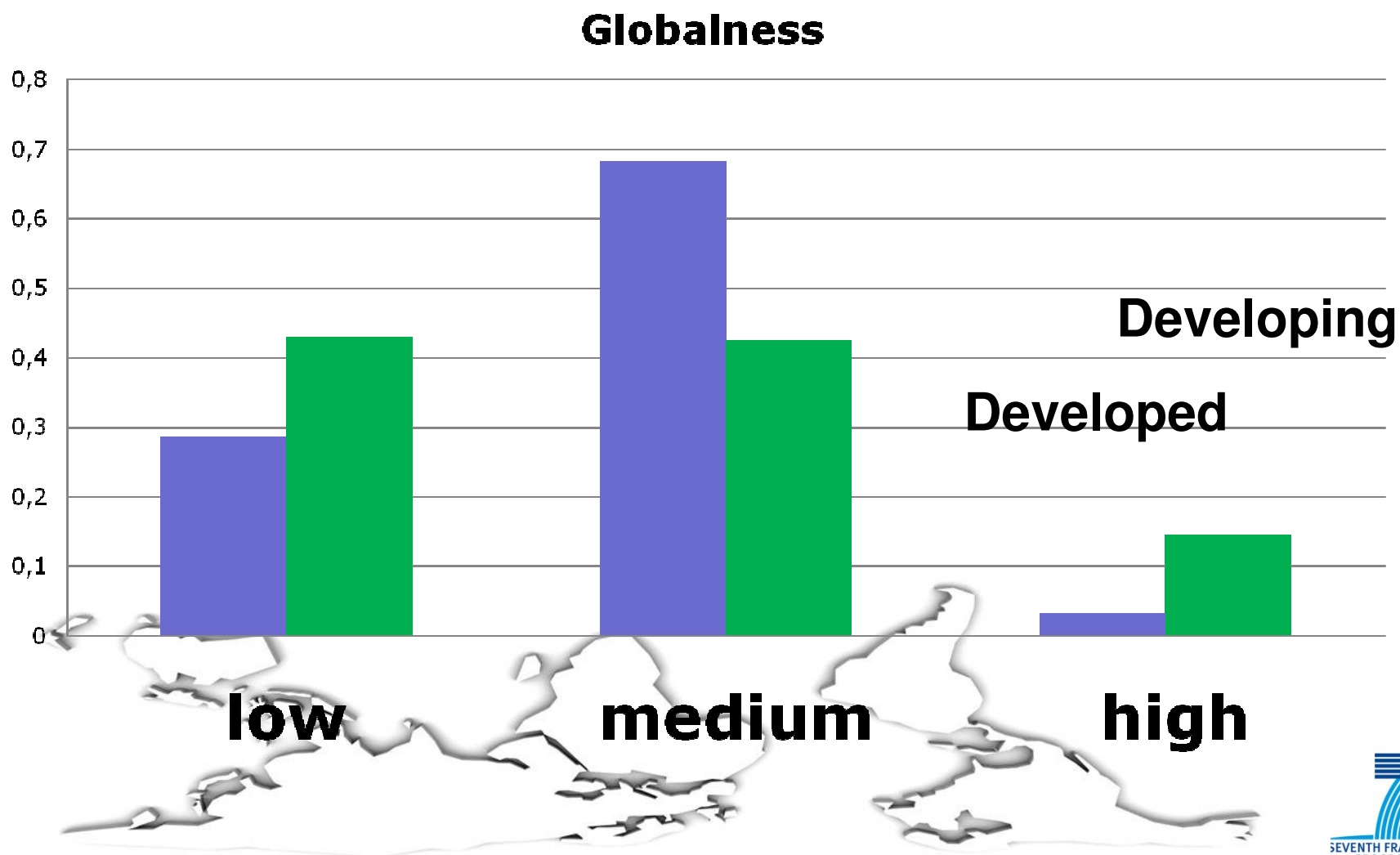
# Globalness

**Globalness: All firms**





# Developed vs Developing







## Questions on innovativeness

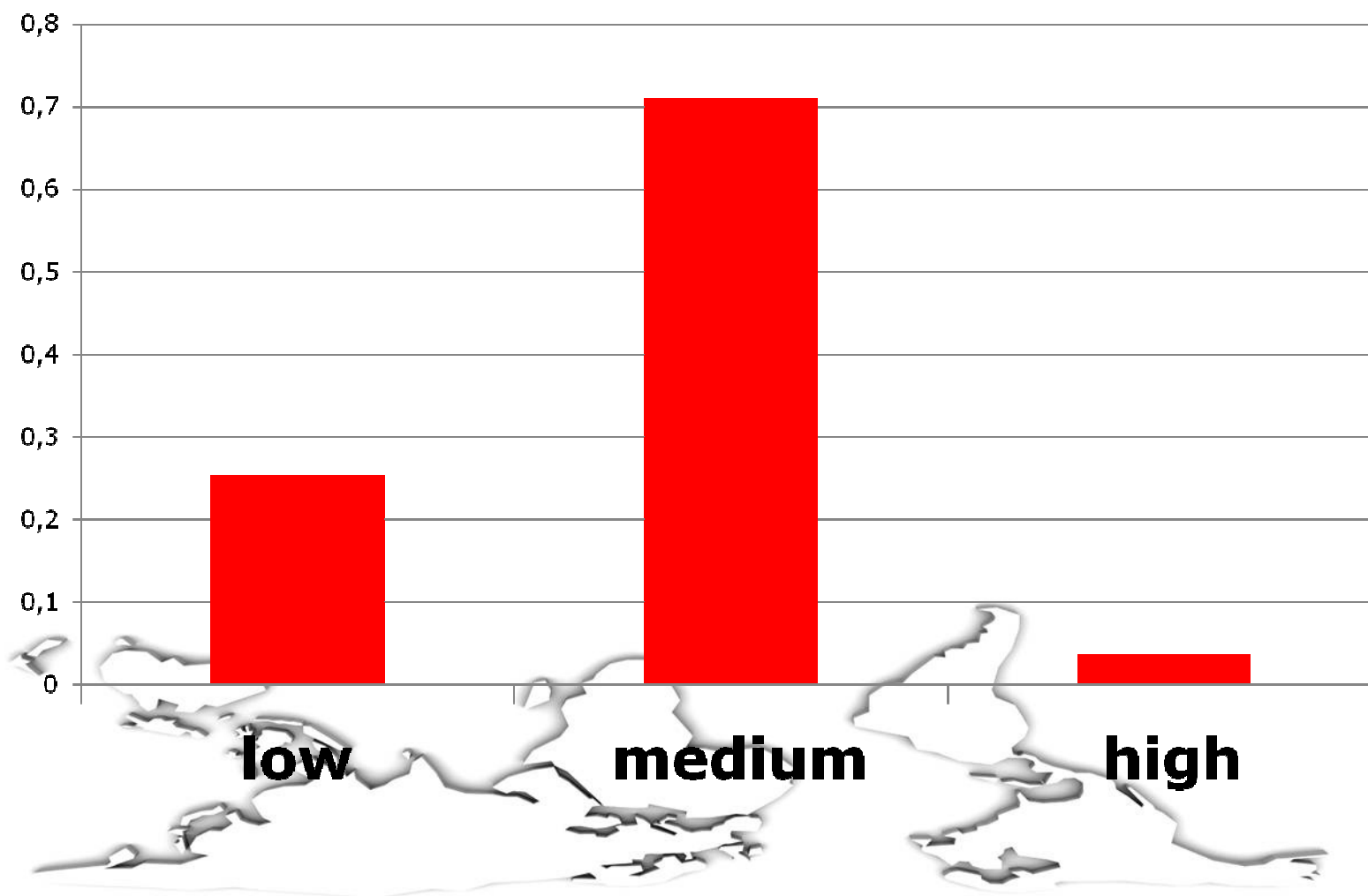
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- Please indicate if your enterprise experienced innovation in the past 3 years (2006 – 2008). You may select more than one option.
  - New products
  - New services
  - New or improved methods of manufacturing or producing
  - New or improved logistics, distribution or delivery methods
  - New or improved supporting activities for your firm
- Levels:
  - New to the world
  - New to the industry
  - New to the firm
  - None



# Innovativeness

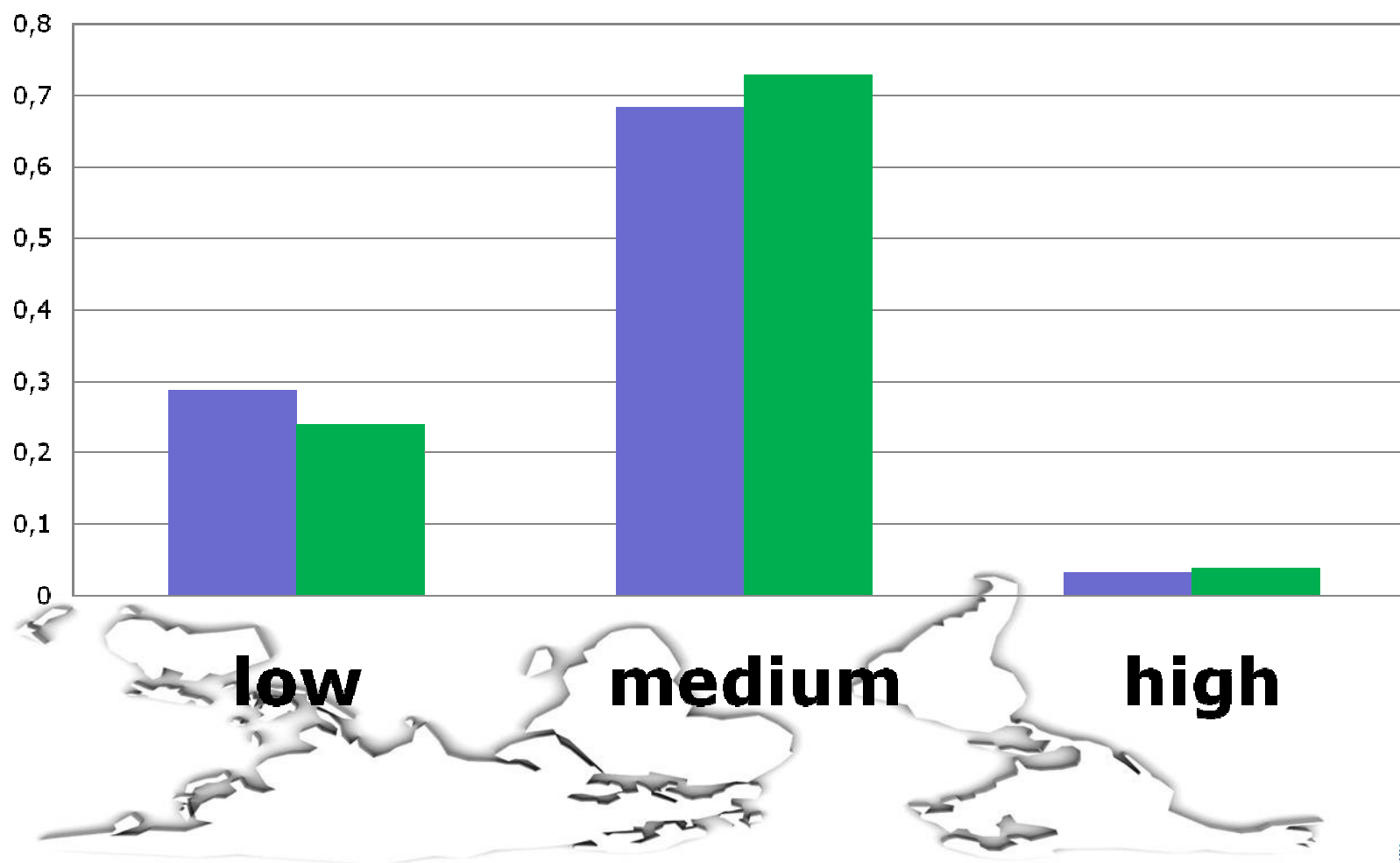
## Innovativeness: All firms





# Developed vs Developing

## Innovativeness





## Questions on networkedness

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### 5.1 Which is the most important source of technology for your enterprise?

- We produce most important technological inputs in-house
- We buy most of our inputs from other branches of our MNC
- We buy most of our technological inputs from other non-MNC firms
- We buy most of our inputs from MNCs with whom we are not formally connected
- We buy most of our inputs from public sector institutions like research institutes, universities etc.



## Questions on Globalness

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5.1 Regarding the development of the most important innovation of your firm in the last 3 years: **Who did you actively collaborate with,** (and in which location)?  
Please select all that apply





## Questions on networkedness

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8.1 Has your organisation developed formal/informal linkages (e.g. research relationships) with the following kinds of foreign organisations? Informal implies no written contract or financial obligations exist

- Clients                      Suppliers
- Competitors      Consultancy companies
- Government      Other





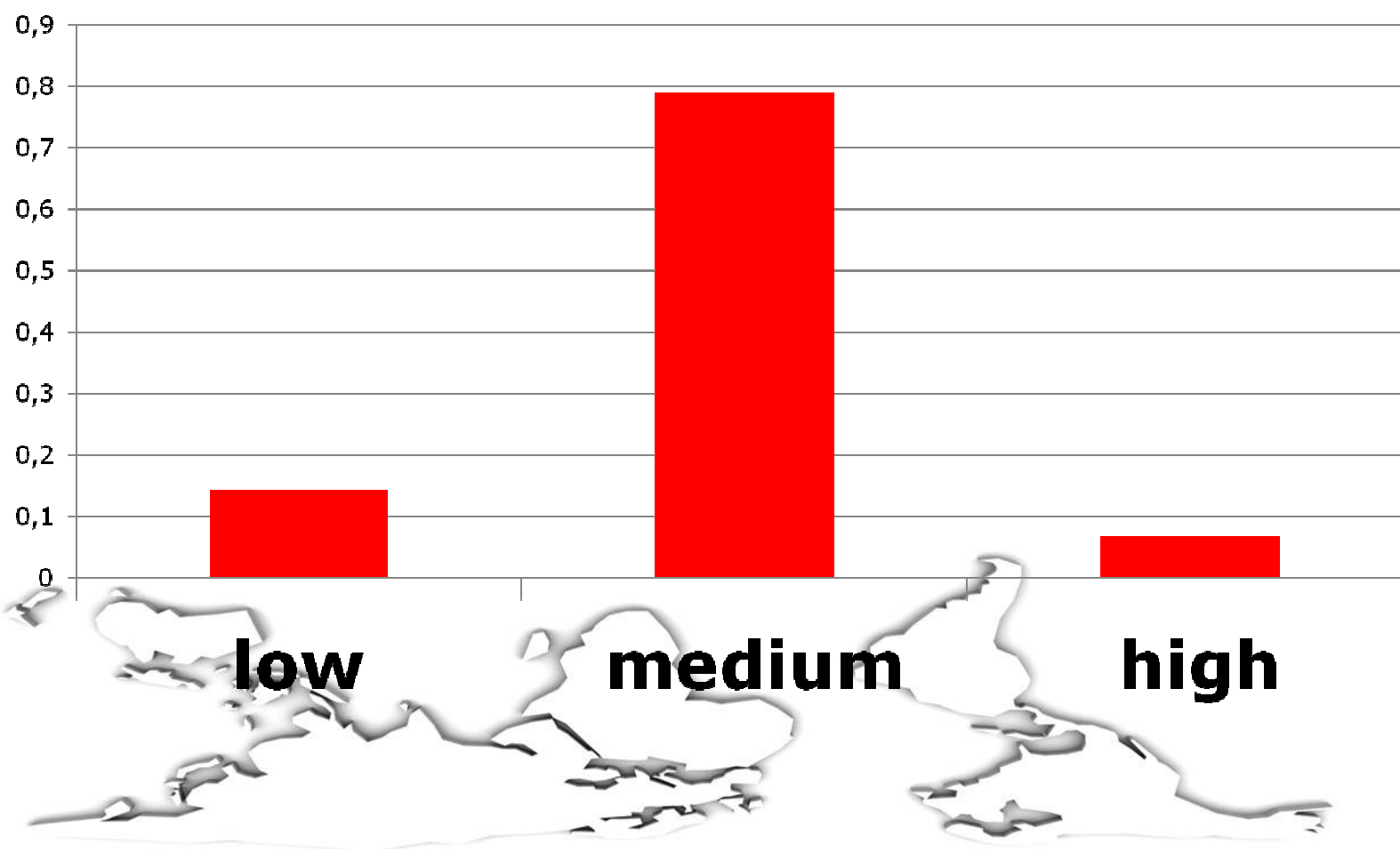
**10. Please indicate how the following functions are performed by your enterprise, including different subsidiaries of the same firm. Please select all that apply.**

		By your unit in your location	At subsidiaries of firm in a developed location(s)	At subsidiaries of firm in a developing location(s)	Outsourced to a partner in your country	Outsourced to a partner outside your country in a developed location	Outsourced to a partner outside your country in a developing location
<b>10.1</b>	Strategic Management						
<b>10.2</b>	Product development (research, design and engineering)						
<b>10.3</b>	Marketing, sales and account management						
<b>10.4</b>	Operations (manufacturing, service supply)						
<b>10.5</b>	Procurement, logistics, distribution (obtaining, storing and transporting inputs and outputs)						
<b>10.6</b>	Corporate governance (legal, finance, accounting, government relations)						
<b>10.7</b>	Human resource management						
<b>10.8</b>	Technology and process development (maintenance, redesign of equipment)						
<b>10.9</b>	Firm infrastructure (building and maintenance IT systems)						
<b>10.10</b>	Customers and after sales service						



# Networks

**Networks: All firms**

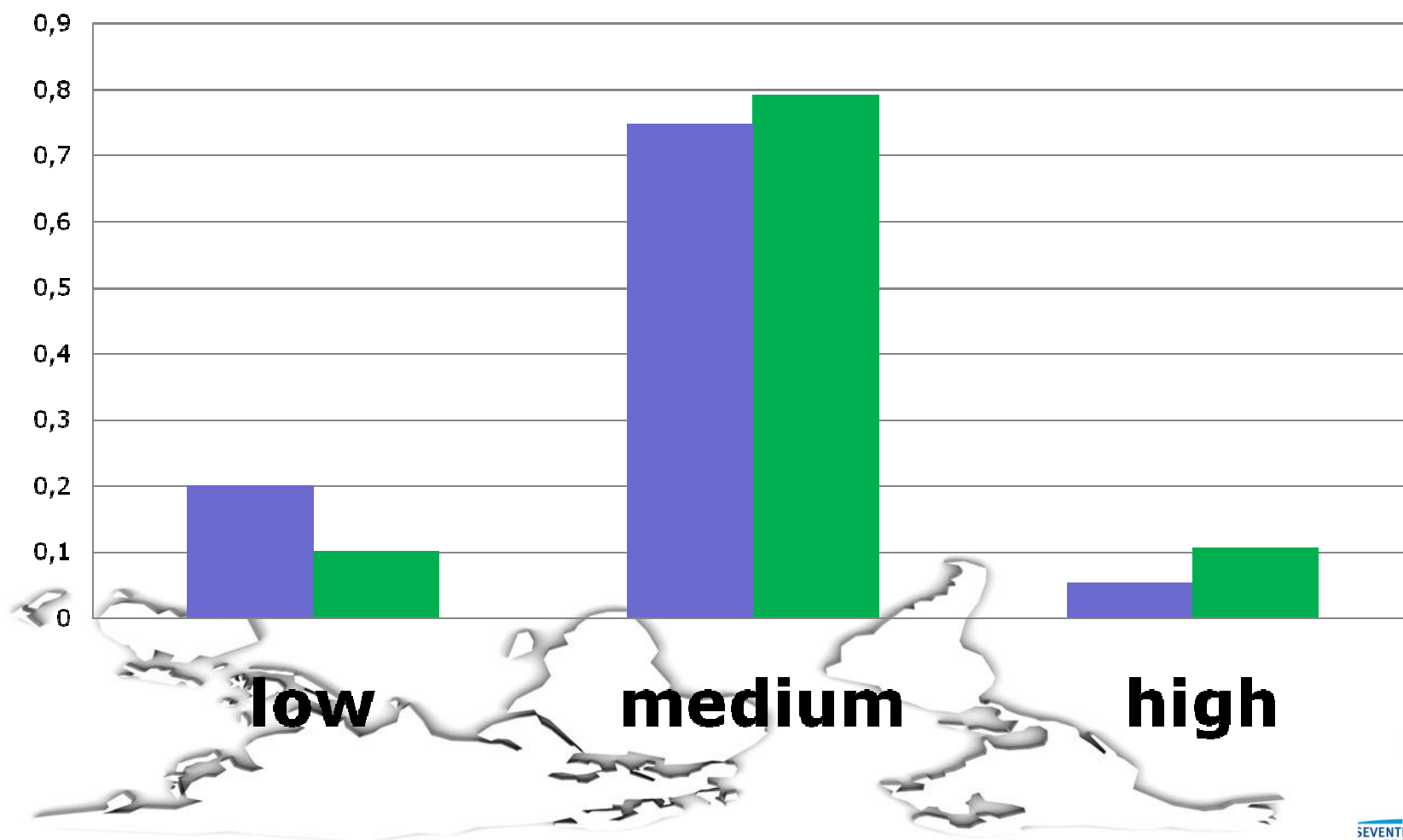






# Developed vs Developing

## Networks





## Possible drivers of the results

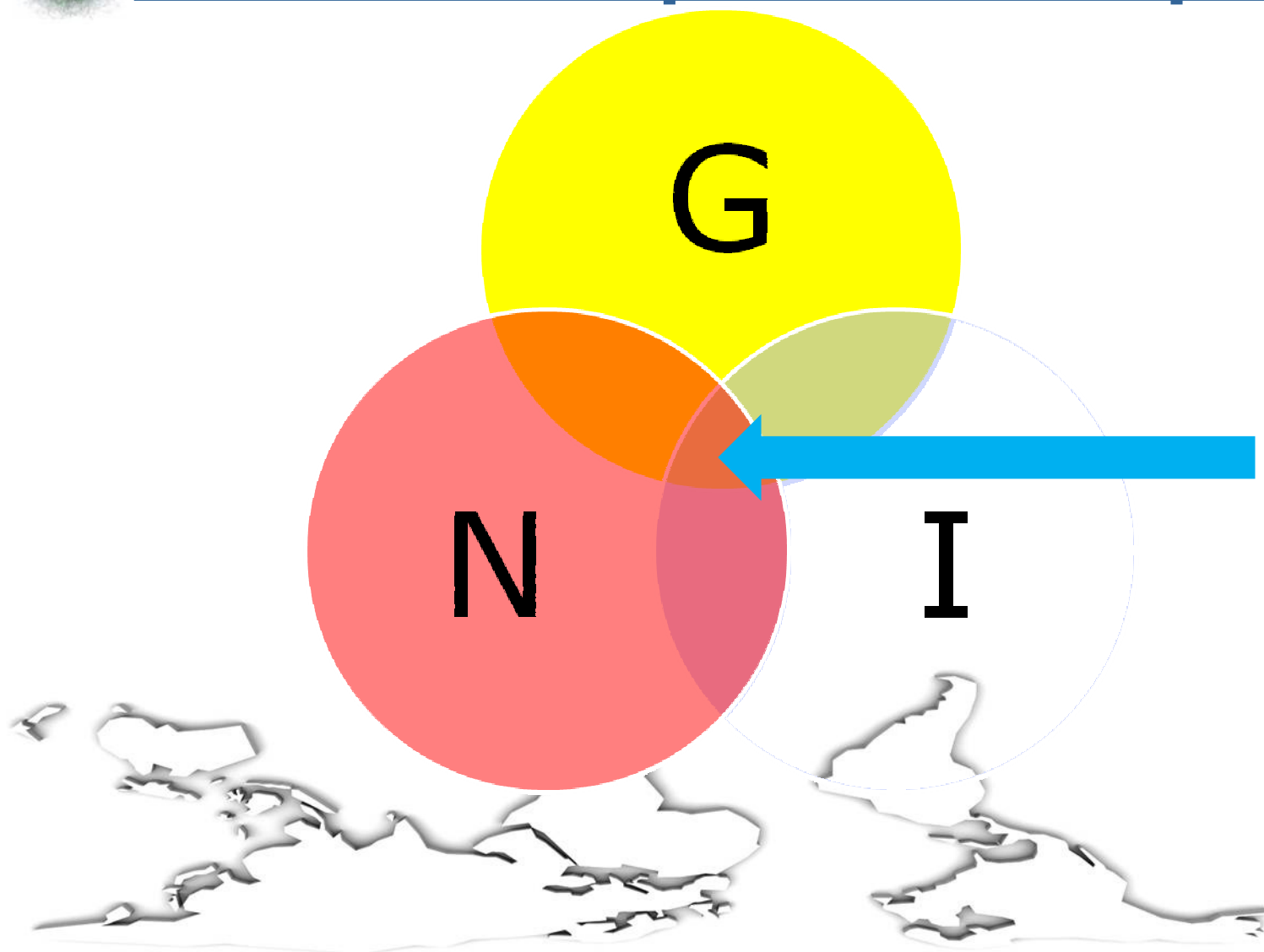
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- Sectoral dimension
  - To what extent and in what way is ICT unique?
- Level of multi-nationality
- “Active” versus “passive” innovation
  - Buying inputs versus creating them
- Developing countries and the role of their:
  - Relative isolation
  - Relative institutional weakness





# Putting together the pieces of the puzzle

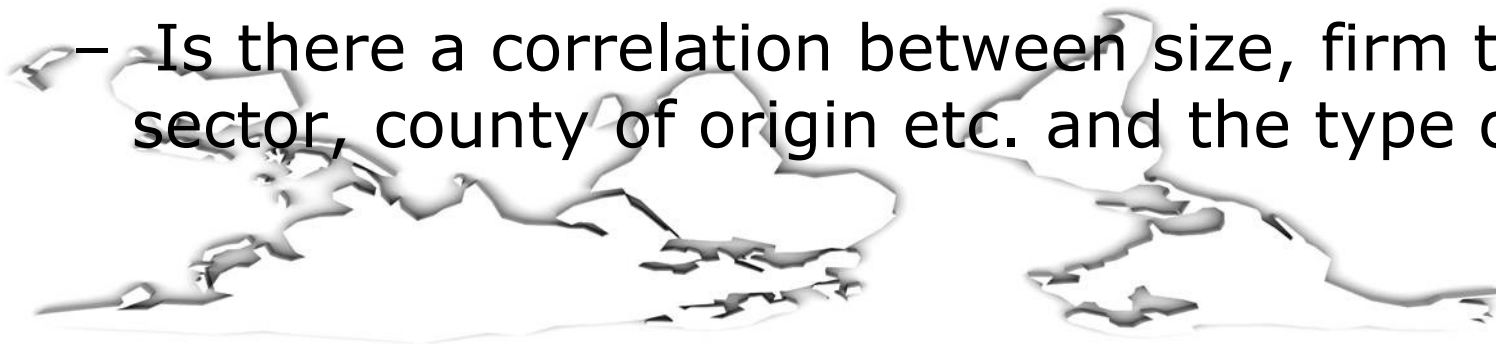




## Further data analysis

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- Finding out which are the strong-form GINs
  - Identify the firms in the intersection in the Venn diagram
  - Categorise them in terms of salient dimensions, e.g. size, designation, country & sector of origin of firms
- Developing a taxonomy of GINs (gIN, GiN, Gin etc.)
  - Is there a correlation between size, firm type, sector, county of origin etc. and the type of GIN?





**Thanks for your  
attention/questions**

Helena Barnard & Tashmia Ismail

[barnardh@gibs.co.za](mailto:barnardh@gibs.co.za) & [ismailt@gibs.co.za](mailto:ismailt@gibs.co.za)

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# Sectoral response to the financial crisis

