



Global Innovation Networks: what are they and where can we find them? (Conceptual and Empirical issues)

**An FP7 research project on
Impact of Networks, Globalisation, and their INTERaction with EU Strategies**





Global Innovation Networks: What are they and where can we find them?

Impact of Networks, Globalisation, and their Interaction with EU strategies.

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Outline

- What are Global Innovation Networks?
 - Empirically
 - Theoretically
- The dominance of MNCs in:
 - The increasing globalisation of innovation
 - The increasing networkedness of innovation
- Reasons to expect MNCs to dominate GINs – or not
- What the evidence suggests

A GIN definition

- A globally organized network of interconnected and integrated functions and operations by firms and non-firm organizations engaged in the development or diffusion of innovations

What is happening?

- The apparent “end point” of globalisation is the emergence of GINs (Global Innovation Networks)
 - Firms do not only sell or produce across the globe, but also innovate globally
 - Moreover, they do this by drawing on a rich network of partners (both firms and non-firms like business schools, research institutes etc)

The globalisation of innovation

- Innovation is driven by
 - Increases in technological advances
 - Accelerating cycles of customer preferences
- A global dispersion of first production and increasingly innovation has resulted from
 - A scarcity of skilled resources
 - The need to tap into specialised expertise
- This process has been driven by established MNCs with their extensive reach

The networkedness of innovation

- Innovation is increasingly taking place within partnerships
- Alliances between firms are increasingly supplemented with alliances with a *range of partners*
- Some of the collaborations are between a larger and a smaller entity; seldom between smaller entities
- Again, the process seems driven by established MNCs

G + I + N = GIN?

- Do GINs represent the deepening of existing trends – where established MNCs continue to spearhead the evolution into GINs, given the increasing importance of globalisation and networkedness?

AND/OR

- Do GINs represent a new form of organisation where established MNCs may not be lead players?

Why we can expect GINs to remain the domain of established MNCs

- The trends towards both the globalisation and the networkedness of innovation have long been documented
 - Almost always in the context of advanced MNCs
- There seems to be a slow evolution where the leading MNCs increasingly develop the capability to manage (the organisationally complex) global innovation networks
- To the extent that GINs represent a deepening of existing trends, MNCs are likely to benefit from capabilities and path dependent processes

Why the advanced MNCs may not spearhead the evolution of GINs

- GINs may not represent a deepening of existing trends, but the emergence of a new organisational form
 - The boundaries of the firm are shifting, with increasingly more done outside rather than inside the firm
- The evolution of GINs coincides with the emergence of MNCs from the developing world
 - This may be more than a co-occurrence

Why we can expect developing countries to spearhead GINs

- The use of business groups in developing countries has long been documented
 - Partners in these group are in unrelated industries
 - but operate together
 - in order to overcome institutional weaknesses
- They may therefore have developed organisational routines to operate within diverse networks
- Firms in developing countries have long had to operate with scarce talent
 - and has long been reliant on talent from abroad
- They may therefore have a well-developed global emphasis

The power of path dependency

- Firms do not make optimal decisions about collaborations, but are constrained by previous practice
- Newcomers do not carry the burden of existing routines and institutional arrangements
- To the extent that GINs represent a new mode of organising, established MNCs are likely to be *disadvantaged* by their existing routines – and newcomers advantaged
- In contrast, to the extent the GINs represent a deepening of an existing trend, established MNCs are likely to be *advantaged*, and newcomers disadvantaged

Methodology - survey

Countries	ICT	Auto	Agro	TOTAL
Brazil		69 (25.9%)		
China	243 (2.7%)			
India	324 (25.2%)			
South Africa			84 (16.9%)	
TOTAL emerging markets	567	69	84	720
Denmark			49 (23.3%)	
Estonia	17 (14%)			
Germany		53 (4.7%)		
Norway	181 (11.9%)			
Sweden	171 (10.3%)	24 (14.3%)		
TOTAL developed countries	369	77	49	495
TOTAL ALL	936	146	133	1215

Scoring system for data

- For the three concepts (Global, Innovative and Networked), relevant questions in the survey were identified
- Each instance was scored relative to the other instances in the dataset
 - A formula was specified to give each instance in the dataset a continuous value greater than or equal to 0
 - This value was divided by the maximum value in the dataset, so that each instance had a continuous score between 0 and 1
- Scores were displayed on a scatter plot, and a combination of cluster analysis and inspection of the scatter plot used to identify the cut-off point between categories

Three levels

- G / I / N – **TRULY** global / innovative / networked
 - g / i / n – **somewhat** global / innovative / networked
 - * / * / * – **not at all** global / innovative / networked
-
- Mathematically 27 (3x3x3) possible combinations
e.g. giN or *In
 - If theoretically driven, should have fewer

Co-occurrence of elements

- By far the greatest proportion of firms are “balanced” – gin or *** – in terms of how global, innovative and networked
- Only a FEW cases demonstrate a “specialisation” in one of the dimensions
- It does not happen that a firm is TRULY good at one dimension, and NOT AT ALL in another
 - If they are TRULY global, they will be somewhat innovative and networked
 - If they are not at all innovative or networked, they may be SOMEWHAT global
- The elements generally co-occur, suggesting that they are mutually reinforcing

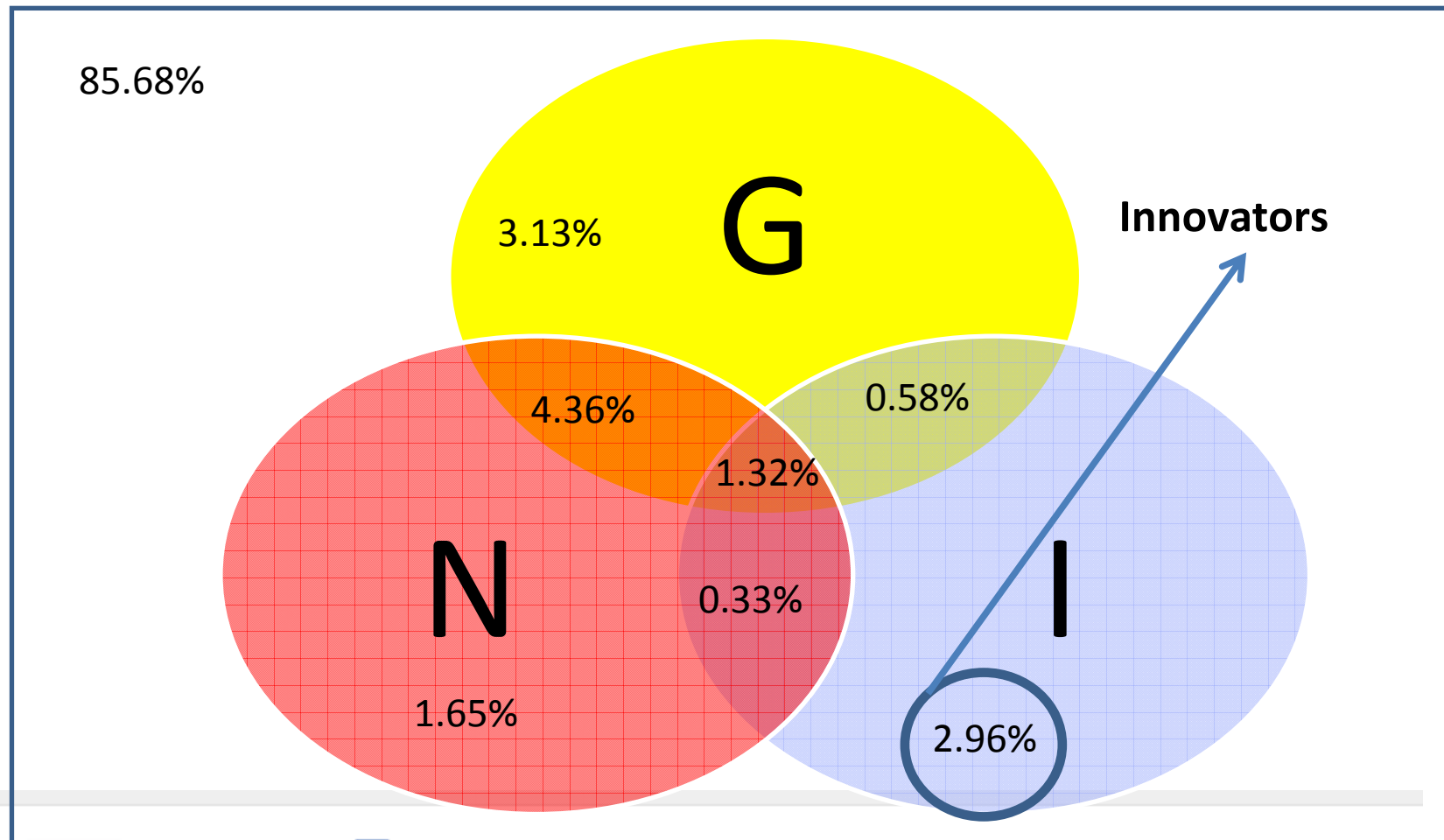
Six types account for more than 97% of dataset

Type of GIN	Description	Prevalence
<i>Domestics</i>	Firms that have no supra-national footprint at all, but are innovative and networked enough to (presumably) survive domestically or locally (the second largest group of firms).	*in (18.93%)
<i>Balanced GINs</i>	All the elements are in alignment	*** (12.18%) gin (40.41%) GIN (1.23% of sample)

6 types account for more than 97% of dataset

Type of GIN	Description	Prevalence
<i>Innovators</i>	Firms are relatively more innovative than their global reach or the extent of their networks would suggest	gIn (2.63%) *i* (1.89%)

Innovators



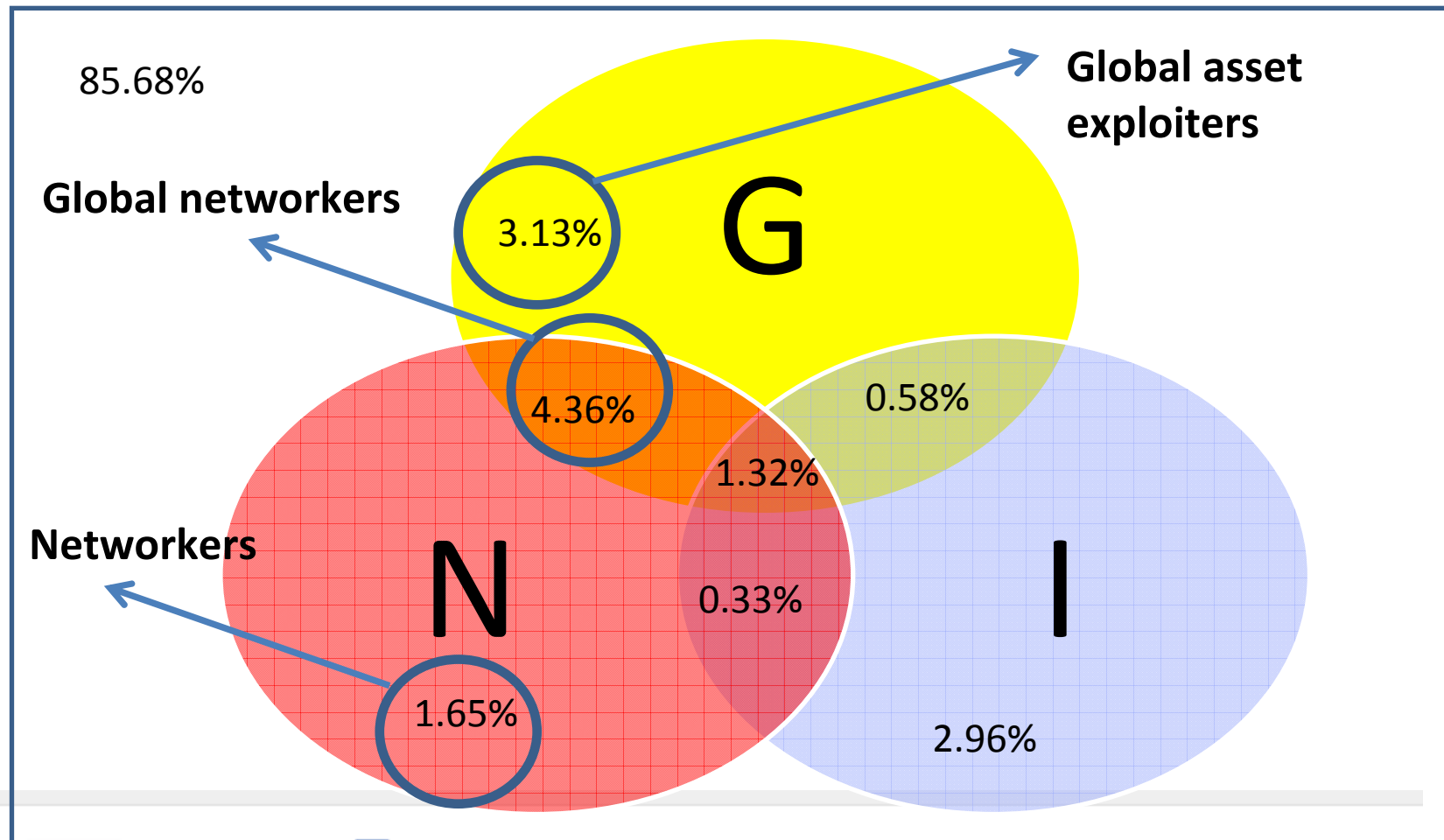
Some characteristics of gln

- All industries
- European firms best represented
 - Drawing on rich institutional context
- Small firms (less than 50 employees)
- Standalone firms
- Little evidence of harvesting value

6 types account for more than 97% of dataset

Type of GIN	Description	Prevalence
<i>Global asset exploiters</i>	Global reach is greater than the extent of innovation or networkedness	Gin (2.96%) g** (1.65%)
<i>Global networkers</i>	Innovation is not as high as both the globalness and the networkedness. This is the only common combination of two stronger dimensions	GiN (4.36%) g*n (3.79%)
<i>Networkers</i>	Strength of networks is greater than global reach or innovativeness	giN (1.48%) **n (5.76%)

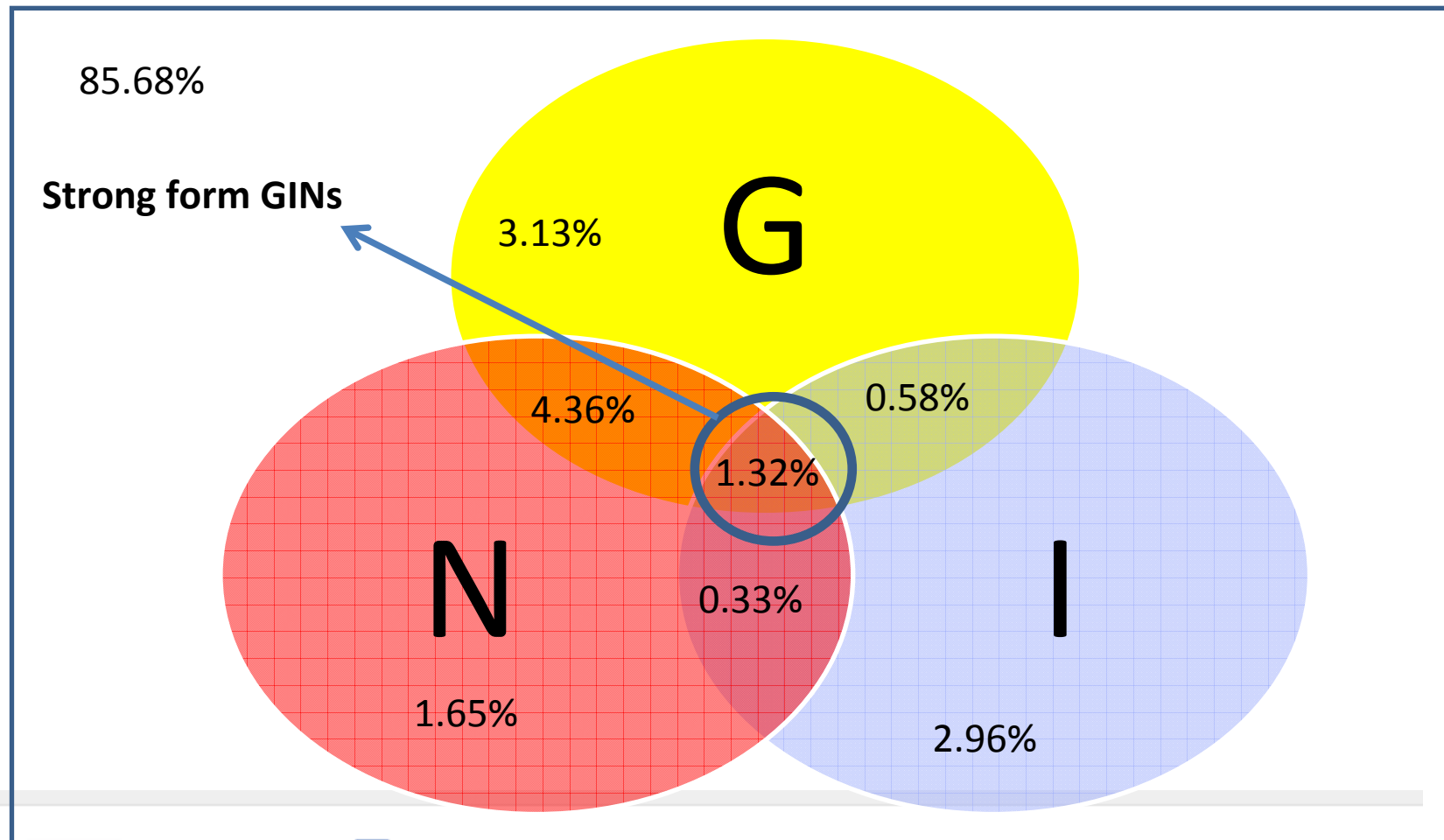
Global asset exploiters, Global Networkers & Networkers



Some characteristics of Gin, GiN & giN

- All industries
- Large firms – more than 1000 employees
- Mainly MNCs
 - European MNCs well represented among Gins – Global asset exploiters and giNs – non-global networkers
 - Emerging MNCs more likely to be GiNs – Global networkers
- Fairly traditional model – exploiting your locally developed capabilities abroad

Strong-form GINs (15 out of 1215 firms in 9 countries)



Some characteristics of GIN

- Not auto with its tiered hierarchy – but ICT and agro
- Between 50 and 1000 employees
 - Large enough to need to access resources globally
 - Small enough to manage that complex process
- Equal split between stand-alone firms and subsidiaries (of both established and emerging MNCs)
 - ALL located in developing countries rather than Europe

Explanations so far

- Creating, maintaining and exploiting global networks is complex
 - Inside the rich European context, it is not (yet) needed
- Regional analysis also finds the dominance of GINs OUTSIDE of the main regions
- Globalness, innovativeness and networkedness seem to co-occur and seem to be mutually reinforcing
- GINs to be an emerging form of organising, comparable to the emergence of the multi-divisional form
 - First-mover advantages seem likely to accrue

GINs – a dual emergence

- It seems that GINs are emerging from two quite different processes
 - Advanced MNCs (mainly from the US) are deepening the trend to innovate through increasingly global and increasingly networked processes
 - Players from emerging markets (sometimes emerging MNCs, but sometimes not) are developing capabilities in the creation and management of global networks to compensate for institutional limitations, e.g. skills shortages

Thank you!

- Questions?



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