

## Patents : Towards a suitable quantitative and qualitative measurement of an intangible ?

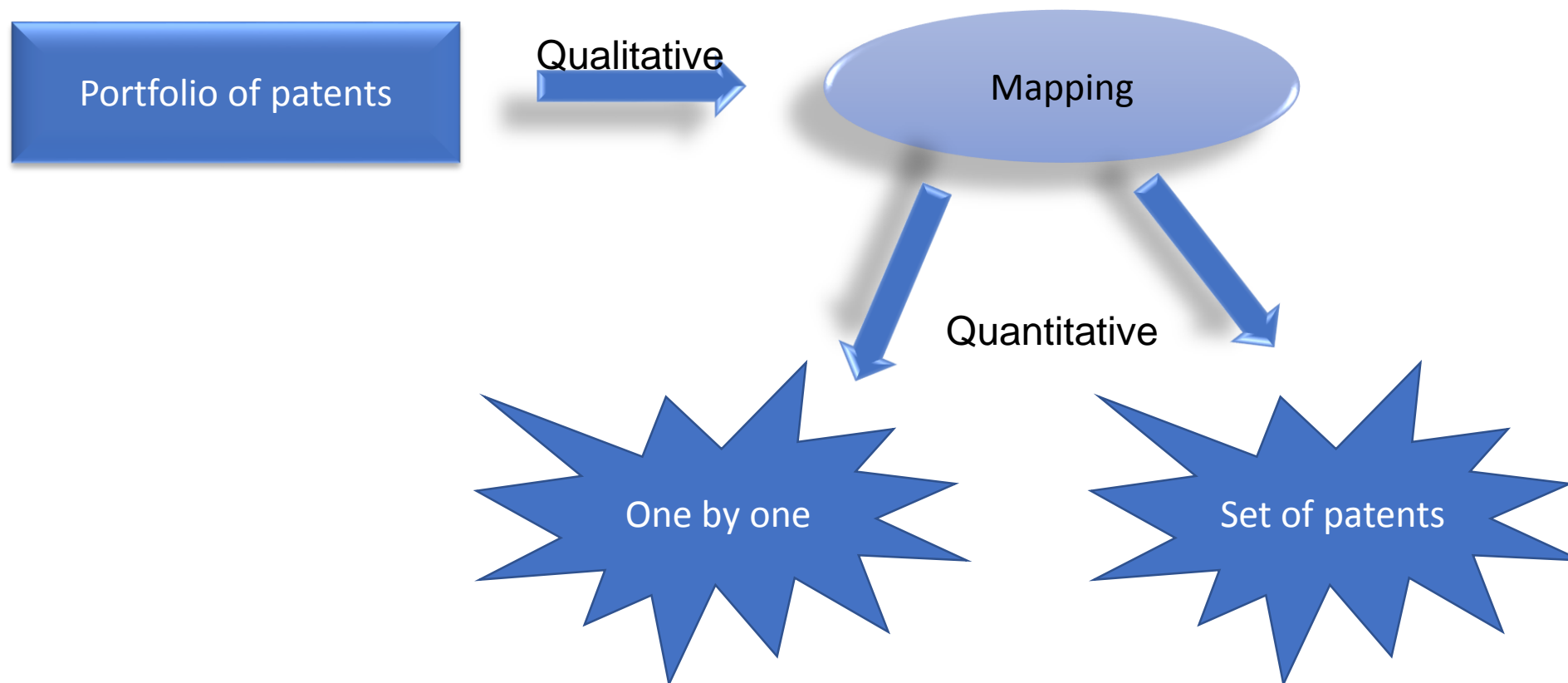
Frédéric Caillaud, head of Innovation, INPI

**Safe and Ethical Cyberspace, digital assets and risks:**  
*How to assess the intangible impacts of a growing phenomenon?*

The World Conference on Intellectual Capital for Communities

UNESCO, June 14&15 2018

# Towards a suitable quantitative and qualitative measurement of patents ?



# Visualisation of patent Big data

# Landscape

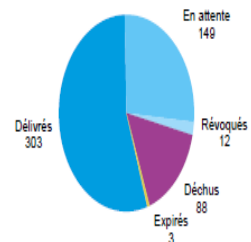
Dépôts de brevets par année

### Nombre de familles de brevets



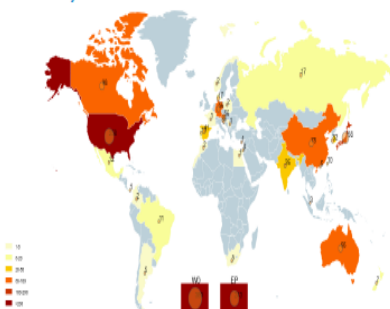
## Statut juridique des brevets

550 familles de brevets (1 inconnu)



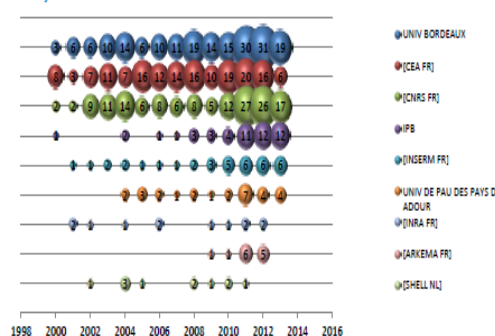
### Extension géographique

### Nombre de familles de brevets étendues



### Evolution des dépôts de brevets des principaux déposants

Nombre de familles de brevets



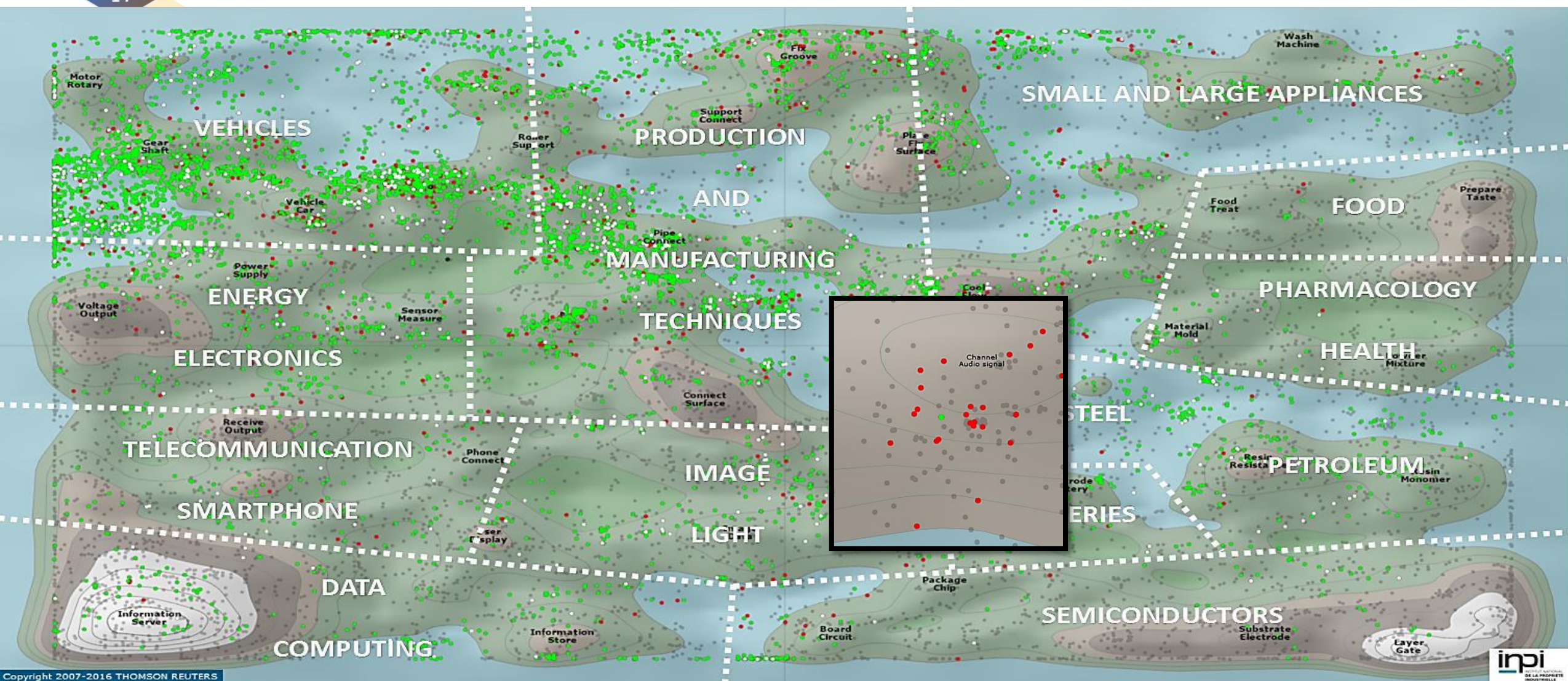
# Mapping



Clarivate  
Analytics

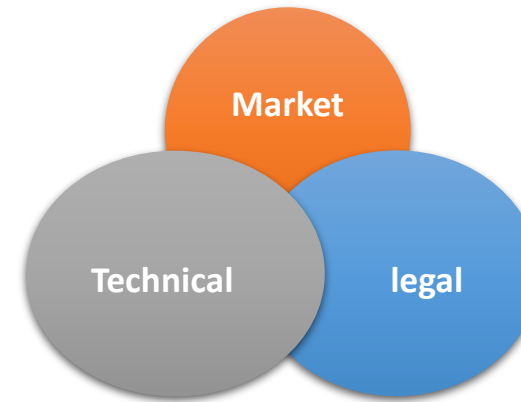


# A game of go with a few millions of players



# Measurement of the **quality** of a portfolio of patents

- Appraisal by IP experts
  - Long, very costly and subjective
- Predictive indicators
  - Public information
  - Competitors point of views
  - 3 sets of indicators



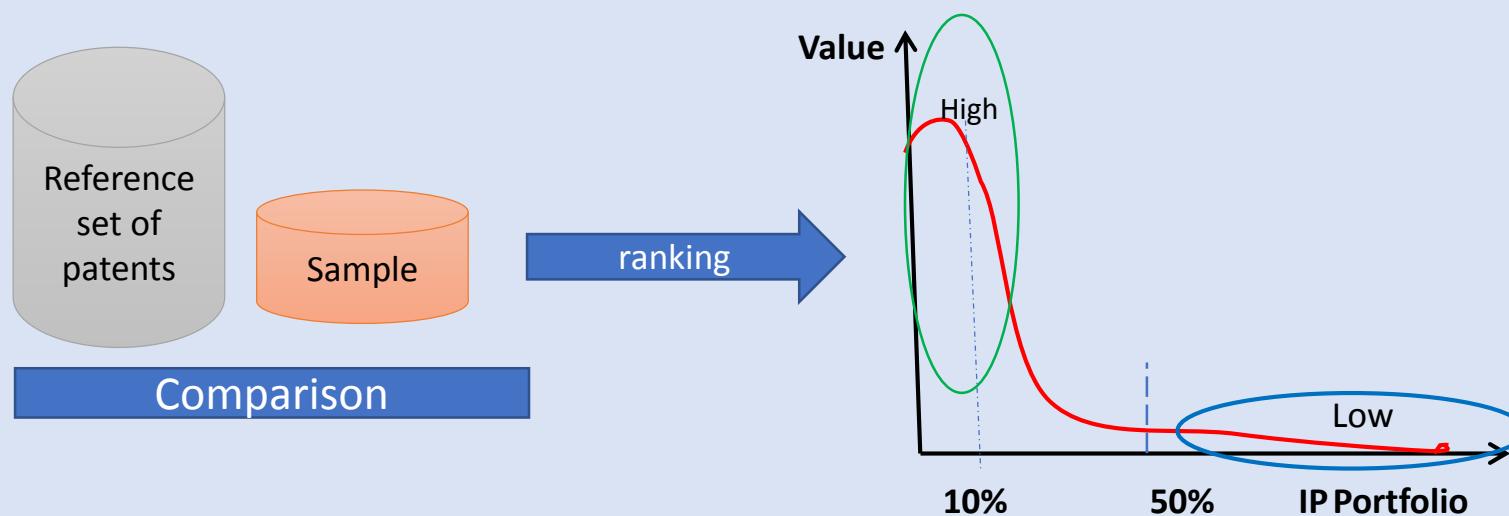


# Calculation of Predictive indicators

Two steps process :

- Selection of COMPARABLE sets of patents
- Select predictive validated indicators according to final use (OECD)

No black box based on a complex algorithm,  
Must be robust and understandable by IP practionners



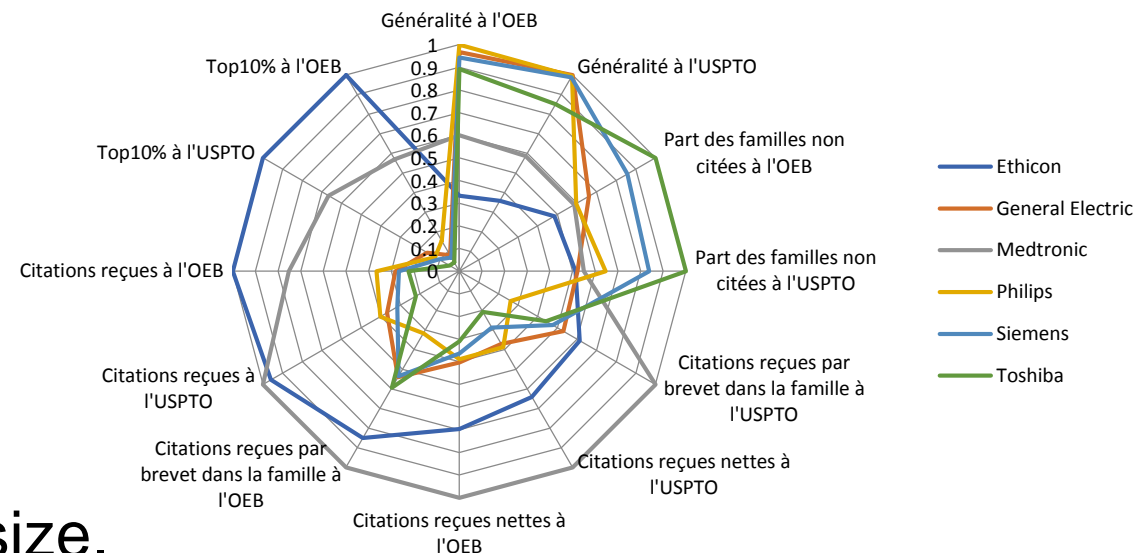
# Analysis of the technical quality of patents

## Technical impact

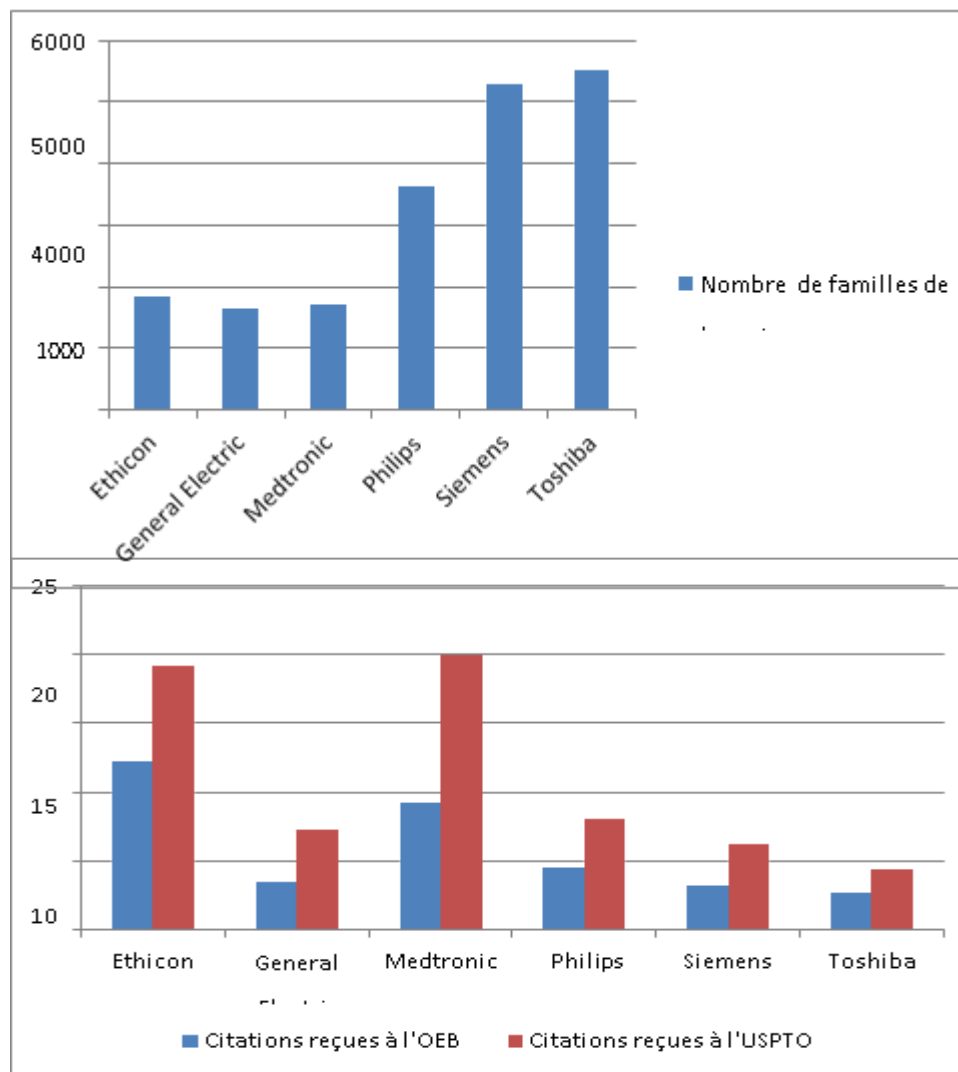
- % of cited families
- Forward citations
- Average number of citation (sector vs portfolio)
- Selfcites
- Average number of cites/family size.
- Top 1% & Top10%

## Technical diversity

- Backward cites
- NPL cites
- Originality and Generality index

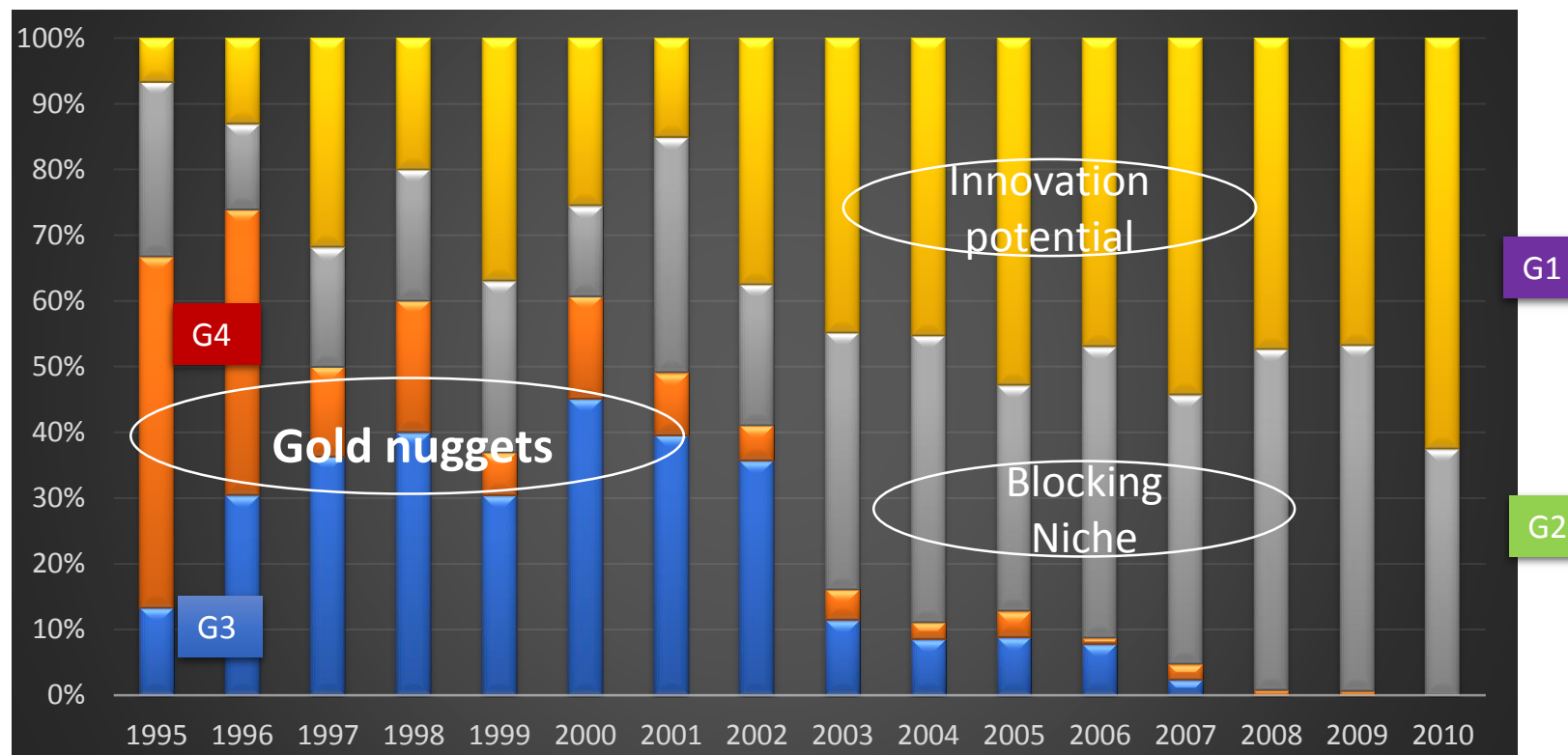


# Quantity does not match with Quality



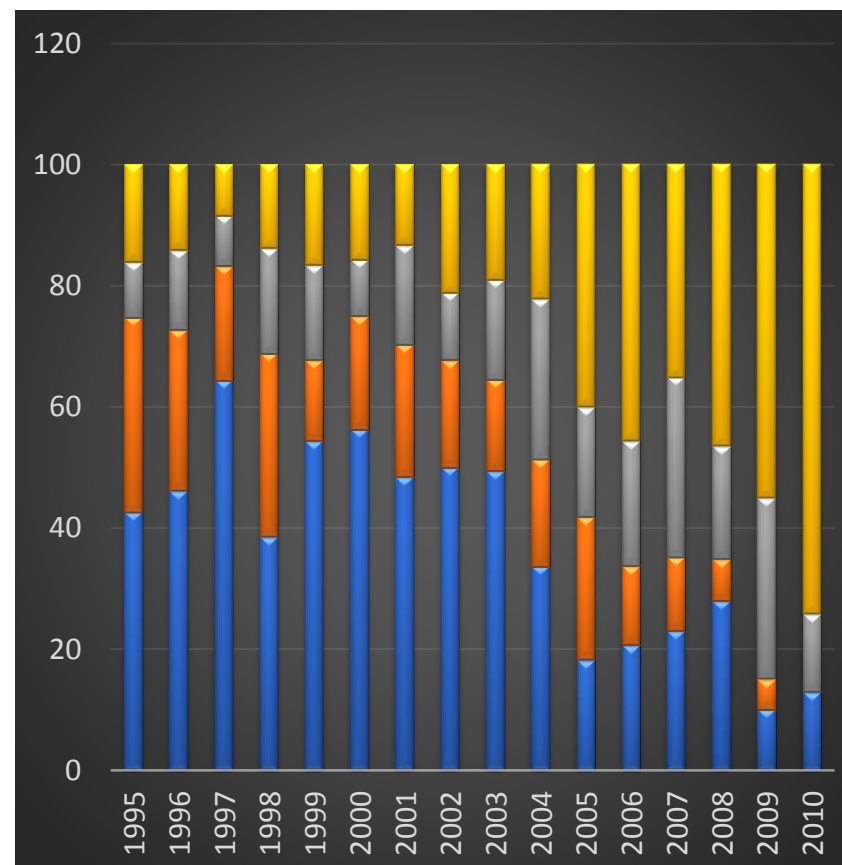
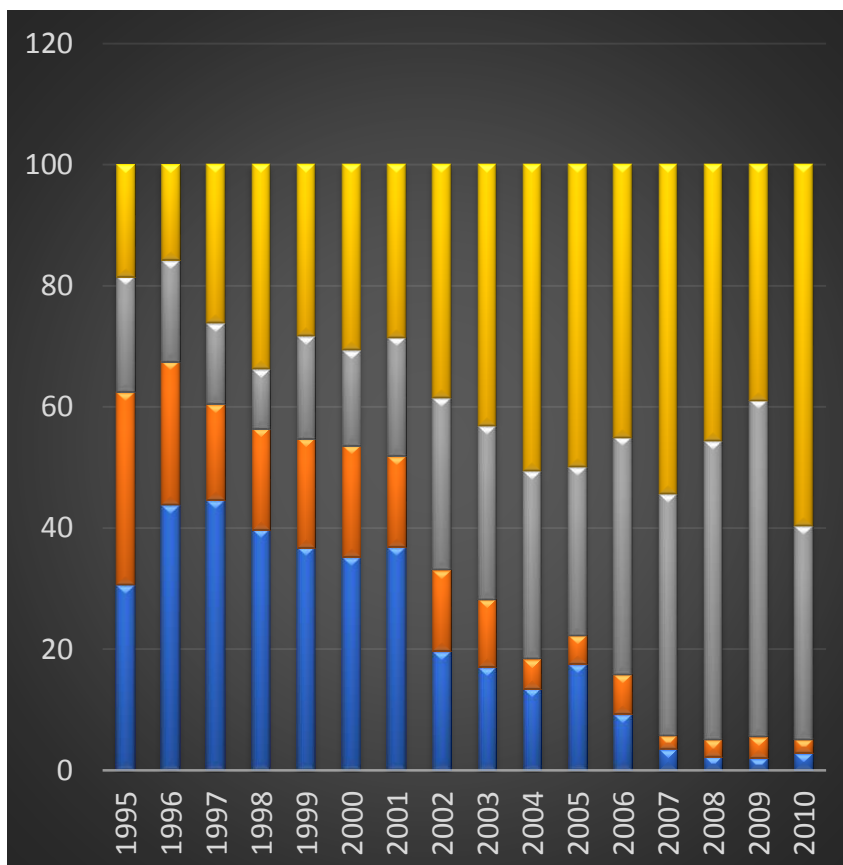


## Portfolio diversity (same field)



Diversity is evolving with the release of forward citations

## Rating of companies based on technical quality of their R&D



## Forthcoming impact on Companies ?

### MAPPING + RATING

- R&D and IP management are becoming Transparent
- Company ranking by patent quantity is not a good proxy.
- *Rating of companies based on R&D quality will influence company analysts and shareholders **very soon***
- Innovative companies will be highlighted
- Companies must anticipate and communicate about IP management in their annual reports

**COMPANIES MUST PREPARE THEMSELVES rapidly...**

## What about tomorrow ?

- A standardization of the methodologies to calculate the predictive indicators is underway and discussion have already been initiated with the top 5 patent Offices to support it.
- International spreading of patents analytics in companies and in the financial/investment sector
- AI is coming soon...
  - Better measurement of semantic distance between patent concepts
  - Nature language to get rid of patent classifications
  - Automated calculation of predictive parameters
  - More interactive and informative new visualization tools
  - Automated writing of patents
  - Ranking of Patent attorney firms, patent examiners
  - Filing strategies optimized by computer

