**INTELLECTUAL PROPERTY IN SERVICES:
WHAT DO WE LEARN FROM INNOVATION SURVEYS?**

Jacques Mairesse (CREST-INSEE)

Pierre Mohnen (MERIT)

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THEME

- ARE SERVICES DIFFERENT FROM MANUFACTURING IN THE USE OF IPR?
- EVIDENCE FROM CIS3 (COMMUNITY INNOVATION SURVEY 3) IN FRANCE

HETEROGENEITY MANUFACT./SERVICES

- CONVENTIONAL VIEW:
  - greater product heterogeneity
  - tailoring to consumer preferences
  - greater intangibility
  - many non-rival goods
- TETHER ET AL. (CRIC WP, 2002) ON CIS2
  - for equal size, service firms are less innovative
  - in services, innovations are more in the form of products than processes
  - service firms tend to be less R&D intensive

HETEROGENEITY WITHIN SERVICES

- IN FINANCIAL SERVICES:
  - large firms
  - tough competition
  - importance of marketing specialists
- IN TELECOMMUNICATIONS:
  - technologies change rapidly
  - regulations are constraining
  - importance of supplier networks
- IN TECHNICAL SERVICES:
  - small firms
  - frequent imitation
  - importance of R&D

Source: BALDWIN et al.. (1998), SC 1996 Survey of Innovation in Services

PATTERN OF IPR USE IN SERVICE SECTORS

- EVIDENCE FROM FRENCH CIS3
- 1998-2000
- IP PROTECTION MECHANISMS: patents, copyrights, registration of design patterns, trademarks, secrecy, complexity of design, and lead-time advantage over competitors
- SERVICES: trade, financial intermediaries, insurance services, telecommunications, computer services, engineering services, research services

DESCRIPTIVE STATISTICS

	HIGH-TECH MANUFAC-TURING	LOW-TECH MANUFAC-TURING	SERVICES
NB OF FIRMS	1605	2456	1914
% INNOVATING	74%	48%	47%

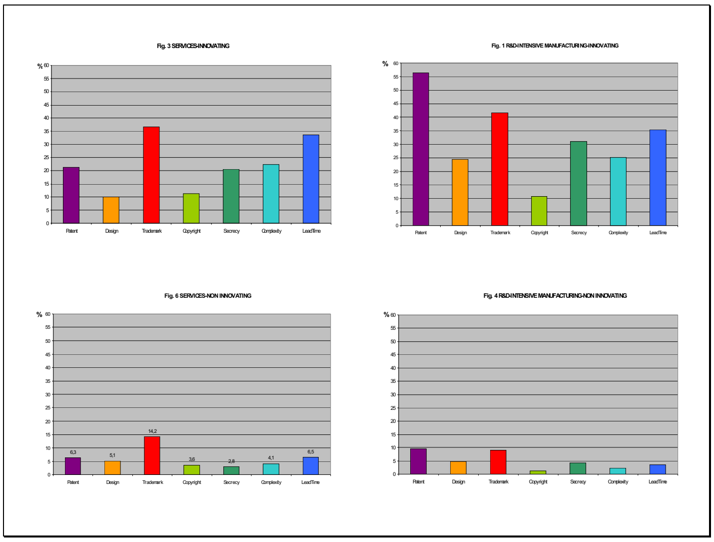
Fig. 3 SERVICES-INNOVATING
%
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Patent
Design
Trademark
Copyright
Secrecy
Complexity
LeadTime
Fig. 1 R&D-INTENSIVE MANUFACTURING-INNOVATING
Fig. 6 SERVICES-NON INNOVATING
6,3
5,1
14,2
3,6
2,8
4,1
6,5
Fig. 4 R&D-INTENSIVE MANUFACTURING-NON INNOVATING

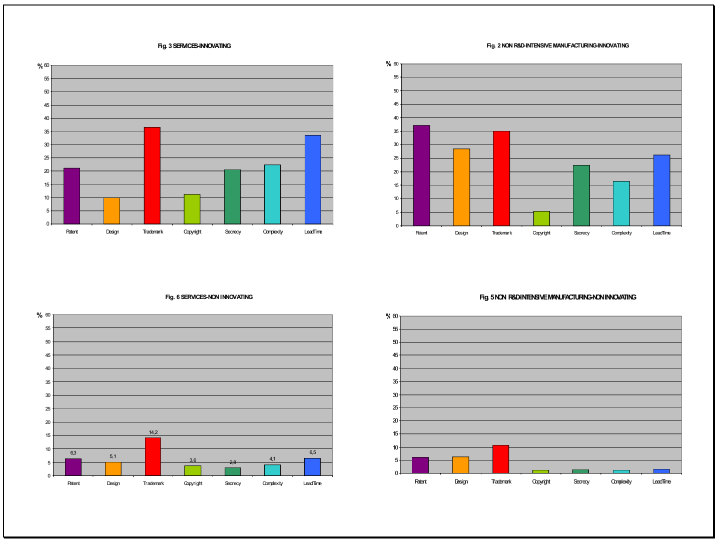
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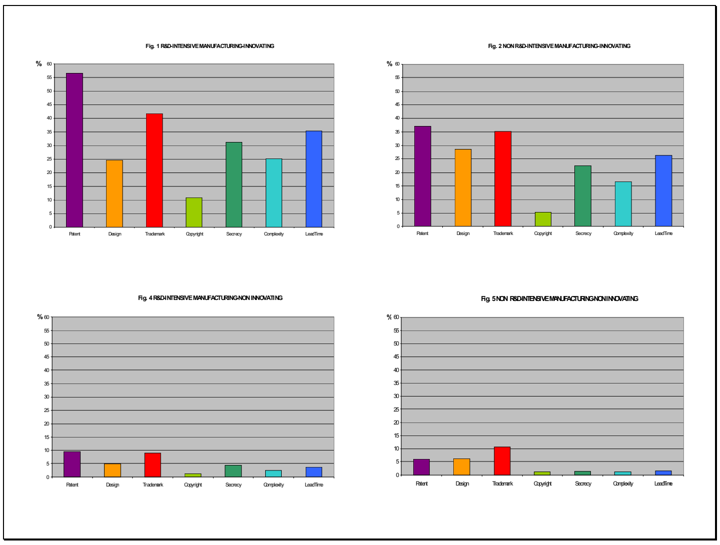
Fig. 5 NON R&D-INTENSIVE MANUFACTURING-NON INNOVATING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MAIN FINDINGS (1)

- In each group, all types of IP mechanisms are used more by innovators than non-innovators
- In manufacturing, patents rank first; in services, trademarks, complexity and lead time are used more often than patents

MAIN FINDINGS (2)

- Innovative firms in high-tech manuf. use all types of IP mechanisms (except design registrations) more than innovating firms in low-tech manufacturing and also more than innovating firms in services
- Innovative firms in services use lead-time, copyrights, complexity and trademarks more than innovative firms in low-tech manufacturing

MAIN FINDINGS (3)

- Non-innovating firms in services tend to use the IP mechanisms (except patents) more than the non-innovating firms in manufacturing

FACTOR ANALYSIS

- AGGREGATION INTO 94 SETS: 47 sectors split into innovators and non-innovators
- GOAL: summarize the variability in the use of IP
- FIRST TWO FACTORS:
  - 1st factor: users versus non-users of IP (75%)
  - 2nd factor: patents, trademarks, registration of designs versus all other mechanisms (8%)

Fig. 7 Plot of Dim2*Dim1$IDENTI. Symbol points to label.

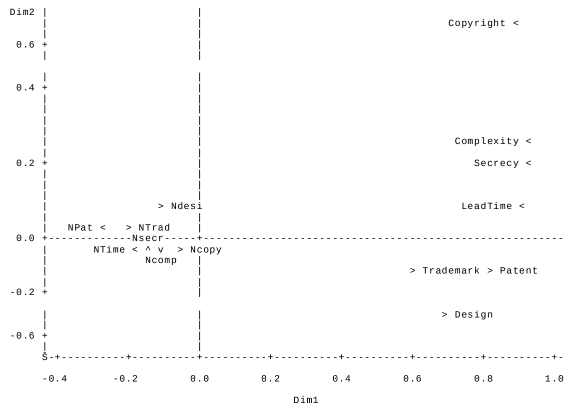
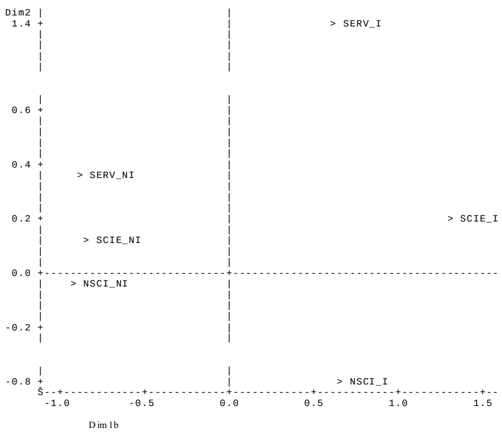


Fig. 9 Plot of Dim2*Dim1$IDENTI. Symbol points to label.



RESULTS FROM FACTOR ANALYSIS

- 1ST FACTOR CORRELATED WITH INNOVATING/NON-INNOVATING DICHOTOMY
- 2ND FACTOR CORRELATED POSITIVELY WITH HIGH-TECH MANUFACTURING AND SERVICES AND NEGATIVELY WITH LOW-TECH MANUFACTURING

CLUSTERING (3 CLUSTERS)

- REGROUPING INDUSTRIES ACCORDING THE SIMILARITY IN THE USE OF IP MECHANISMS
- FOR THREE CLUSTERS:
  - CLUSTER 1 = NON-INNOV.
  - CLUSTER 2 = HIGH-TECH MANUFACT.
  - CLUSTER 3 = LOW-TECH MANUF + SERVICES

Table 4 Clustering of 94 industries (47 innovating and 47 non-innovating) with three clusters

	SCIE-NI	SCIE-I	NSCI-NI	NSCI-I	SERV-NI	SERV-I	TOTAL
CLUSTER 1	18	0	22	3	7	2	52
CLUSTER 2	0	14	0	2	0	1	17
CLUSTER 3	0	4	0	17	0	4	25
TOTAL	18	18	22	22	7	7	94

Table 5 Clustering of 94 industries (47 innovating and 47 non-innovating) with six clusters

	SCIE-I	SCIE-NI	NSCI-I	NSCI-NI	SERV-I	SERV-NI	TOTAL
CLUSTER 1			1		3		4
CLUSTER 2	1		3				4
CLUSTER 3		2	2		2		6
CLUSTER 4		15		22		7	44
CLUSTER 5	16		9		1		26
CLUSTER 6	1	1	7		1		10
TOTAL	18	18	22	22	7	7	94

CLUSTERING (6 CLUSTERS)

- NON-INNOVATORS IN SERVICES ARE CLUSTERED WITH NON-INNOVATORS IN HIGH-TECH AND LOW-TECH MANUF.
- **RESEARCH SERVICES** CLUSTERED WITH HIGH-TECH SECTORS SUCH AS AUTOMOBILES, MEDICAL EQUIPMENT
- **FINANCIAL AND INSURANCE SERVICES** ARE CLUSTERED WITH TWO LOW-TECH INNOVATING AND TWO HIGH-TECH NON-INNOVATING SETS OF FIRMS
- **ARCHITECTURAL SERVICES** ARE CLUSTERED WITH LOW-TECH INNOVATORS
- **TRADE, COMPUTER AND TELECOMMUNICATION SERVICES** ALMOST FORM A SEPARATE CLUSTER

MAIN CONCLUSION

- DISTINCTION BETWEEN SERVICES AND MANUFACTURING IS NOT APPROPRIATE, AT LEAST WHEN IT COMES TO IPR

- ANALYSE IPR AND INNOVATION POLICY

⇒EITHER BROADLY (bundling manufacturing and services together)

⇒ OR MORE PRECISELY ON THE BASIS OF APPROPRIATE INDUSTRY CHARACTERISTICS