

Organising for High Tech Innovation

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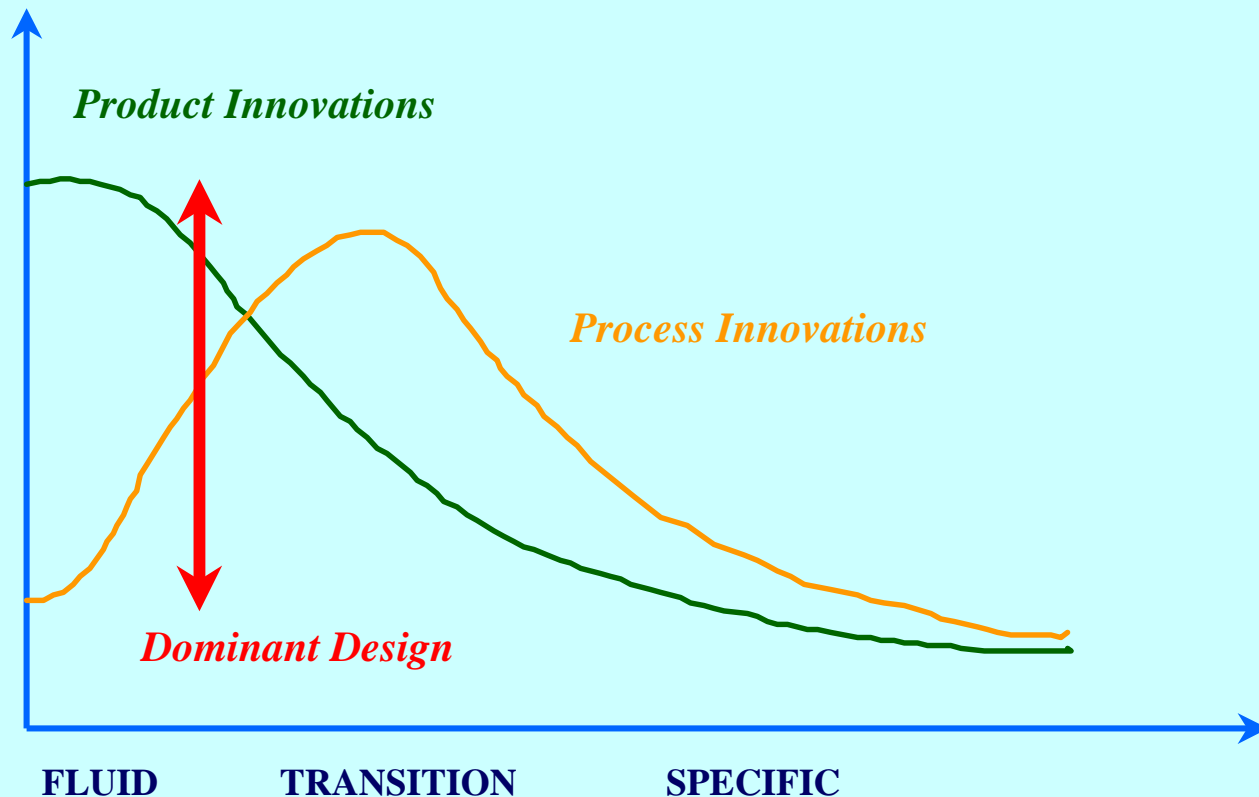
Innovation and competition: What happens to our customers?

■ Major drivers of competition:

- productivity (60-70s)
- quality (70-80s)
- flexibility (80s-90s)
- innovation (90s-00s)
- venturing (00s-...):
 - U.S. anno 2000: the complementary roles of industrial innovation > < entrepreneurial innovation

Innovation and industry dynamics, how can universities intervene?

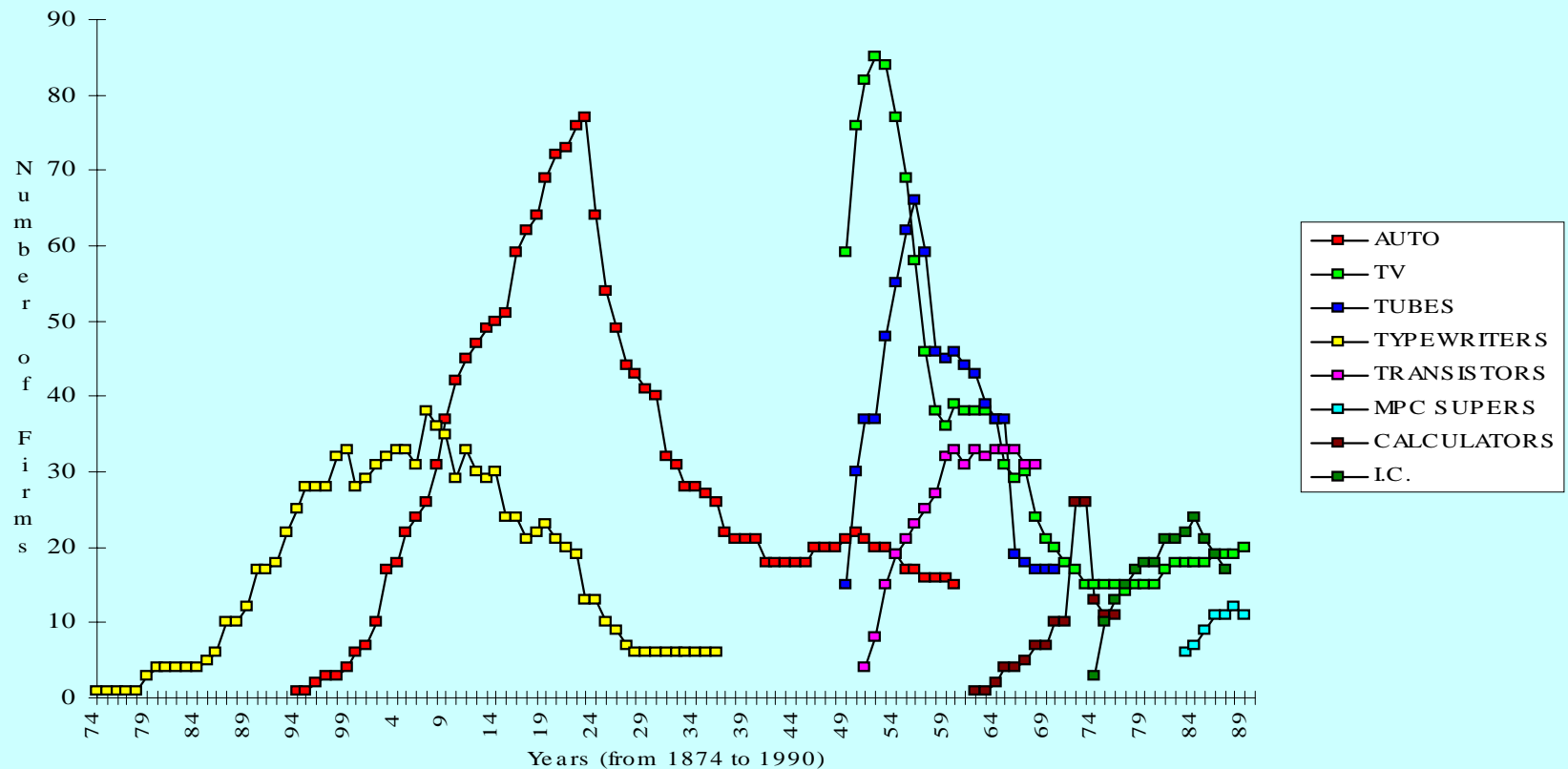
Rate of
Innovation



Dominant Design

Time 3

Innovation and industry dynamics, how can universities intervene?

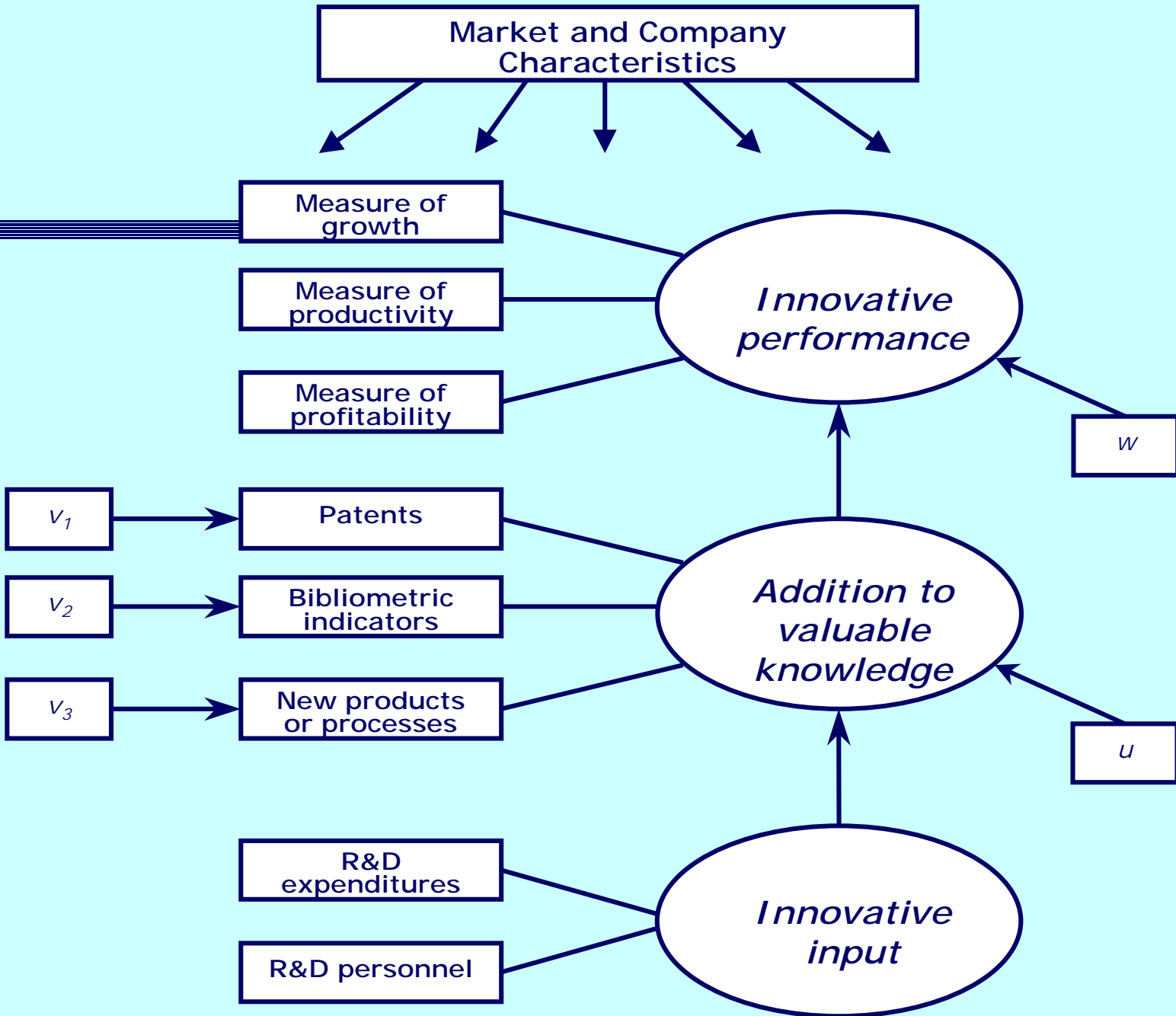


Innovation and industry dynamics, how can universities intervene?

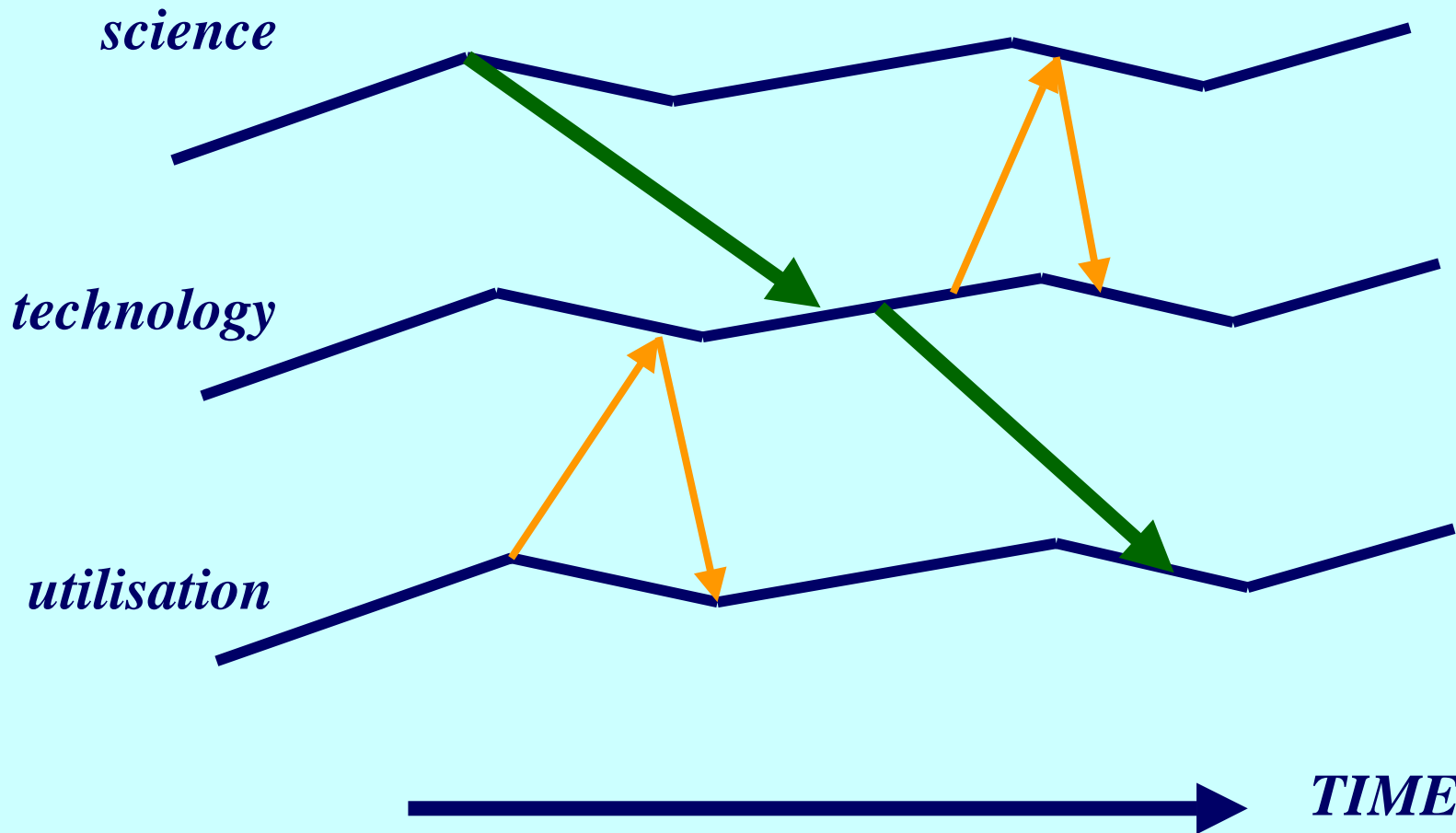
- **What matters most to companies?**
 - Size and growth rate
 - Timing of entry
 - Participation in dominant design
 - Application to new, emerging markets



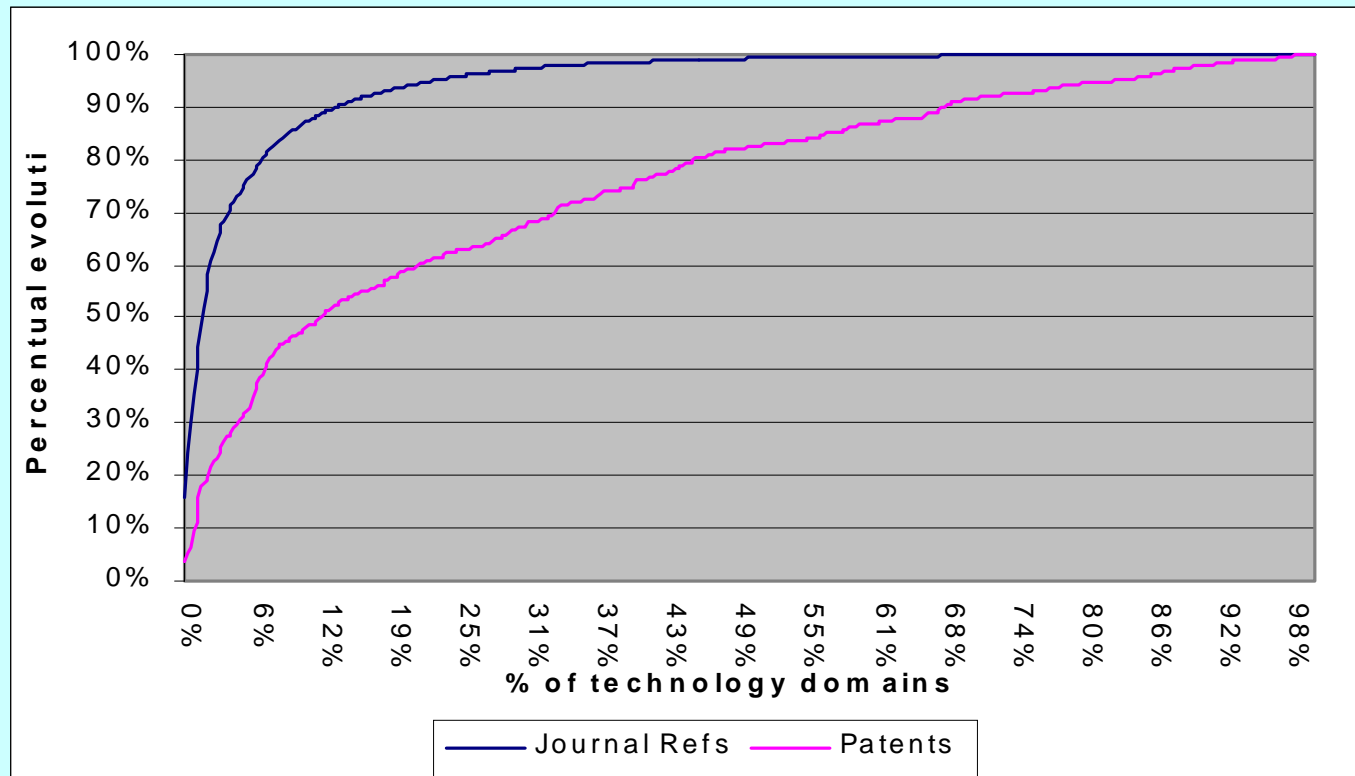
Access to innovation and knowledge



Science, technology, and utilisation: pathways for action and training

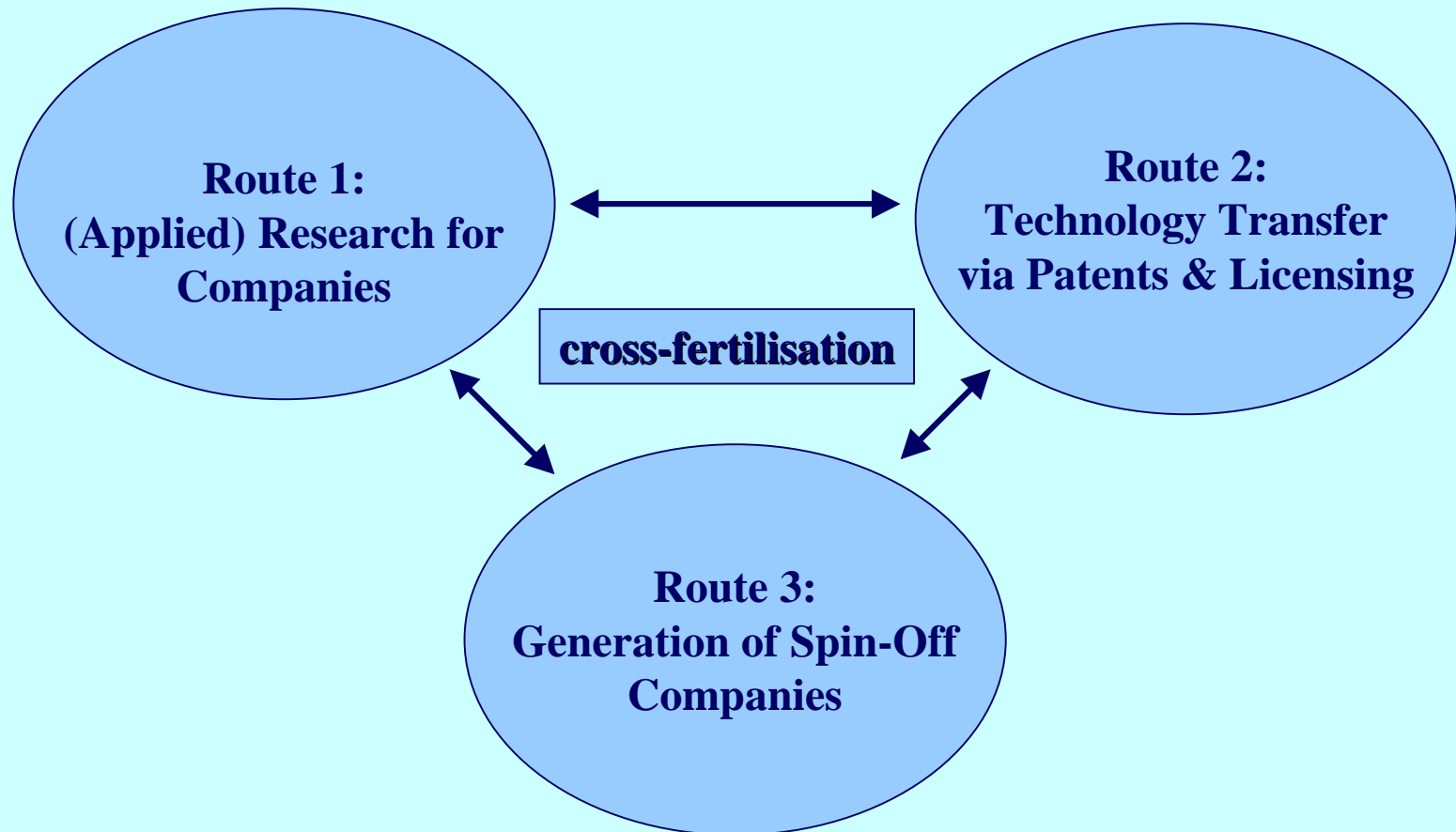


Science - Technology - Utilization: A skewed pathway (Verbeek, Debackere, Luwel et al., 2001)



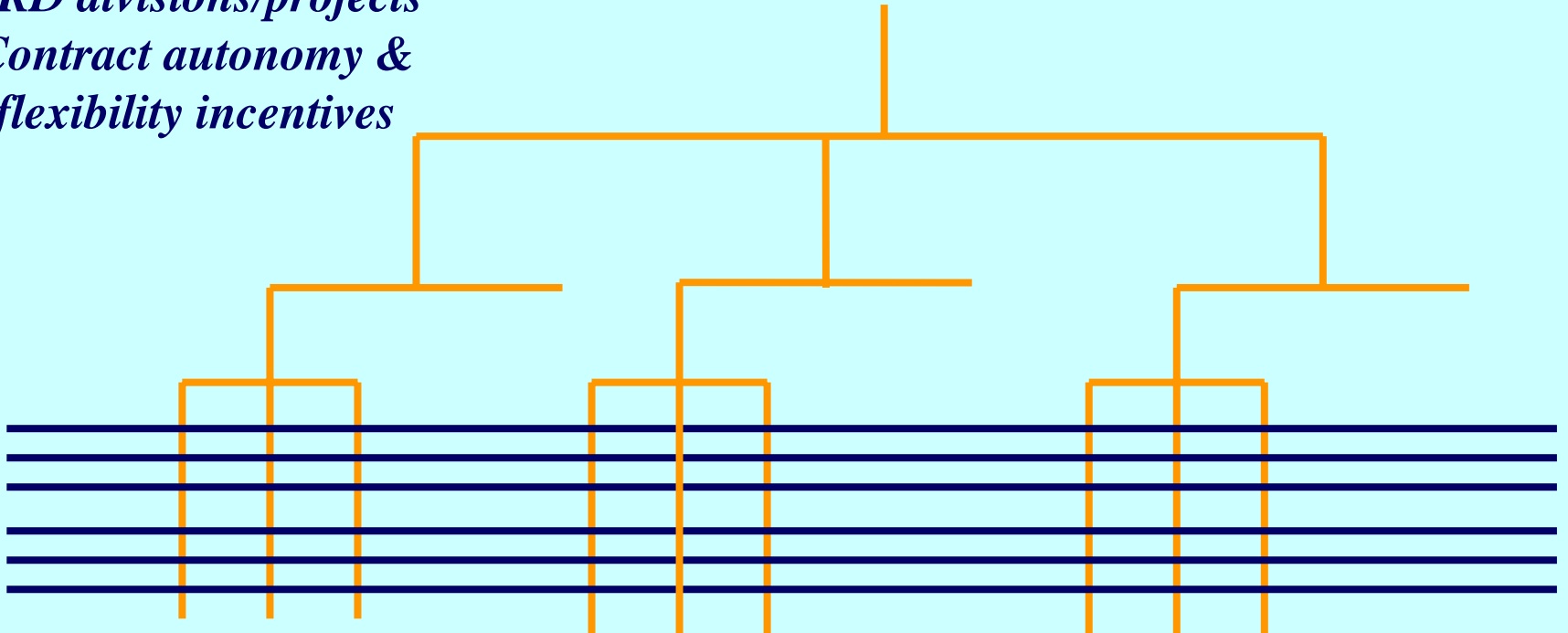
20% of all technology fields account for 90% of all science-technology interactions using citation data from patent to literature databases 8

Organising and training for the pathways at knowledge organisations:



Structuring the pathways: matrix thinking at K.U. Leuven

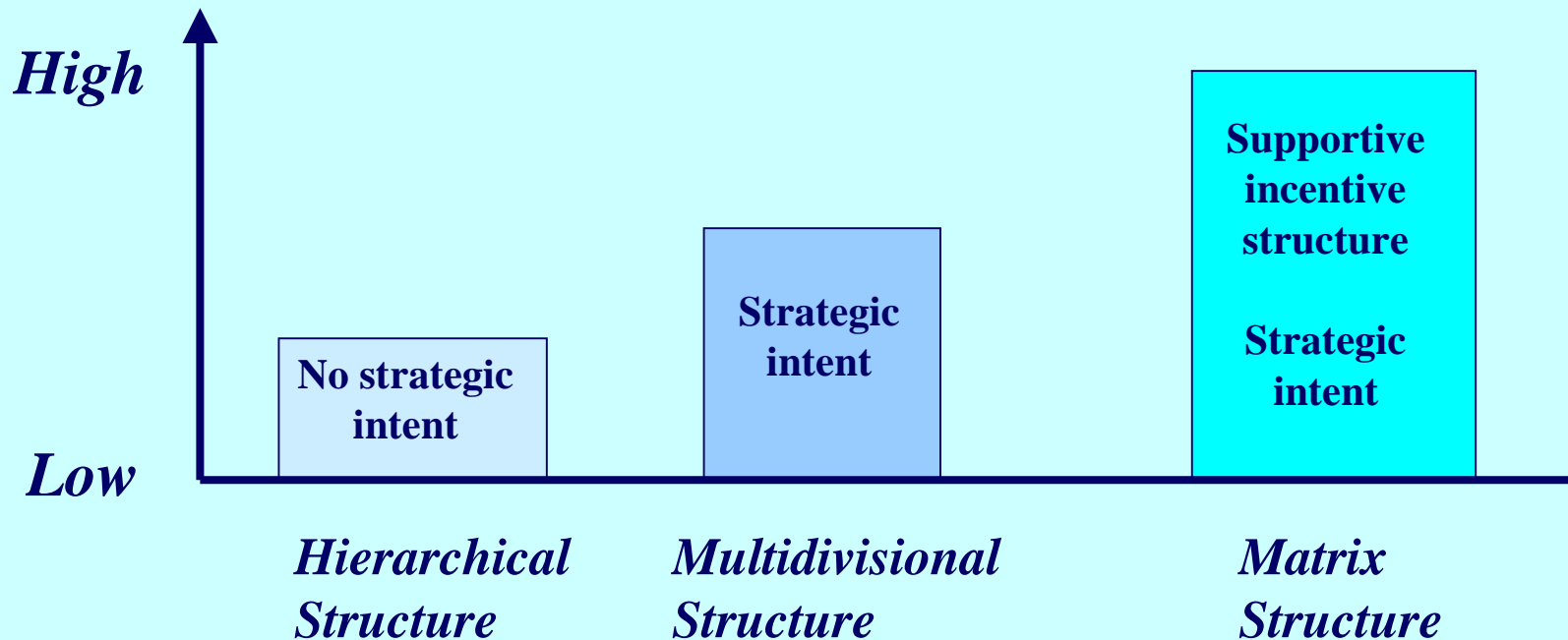
*LRD divisions/projects
Contract autonomy &
flexibility incentives*



*Faculties, departments, research groups:
international quality in research,
teaching performance*

Structuring the pathways: matrix model

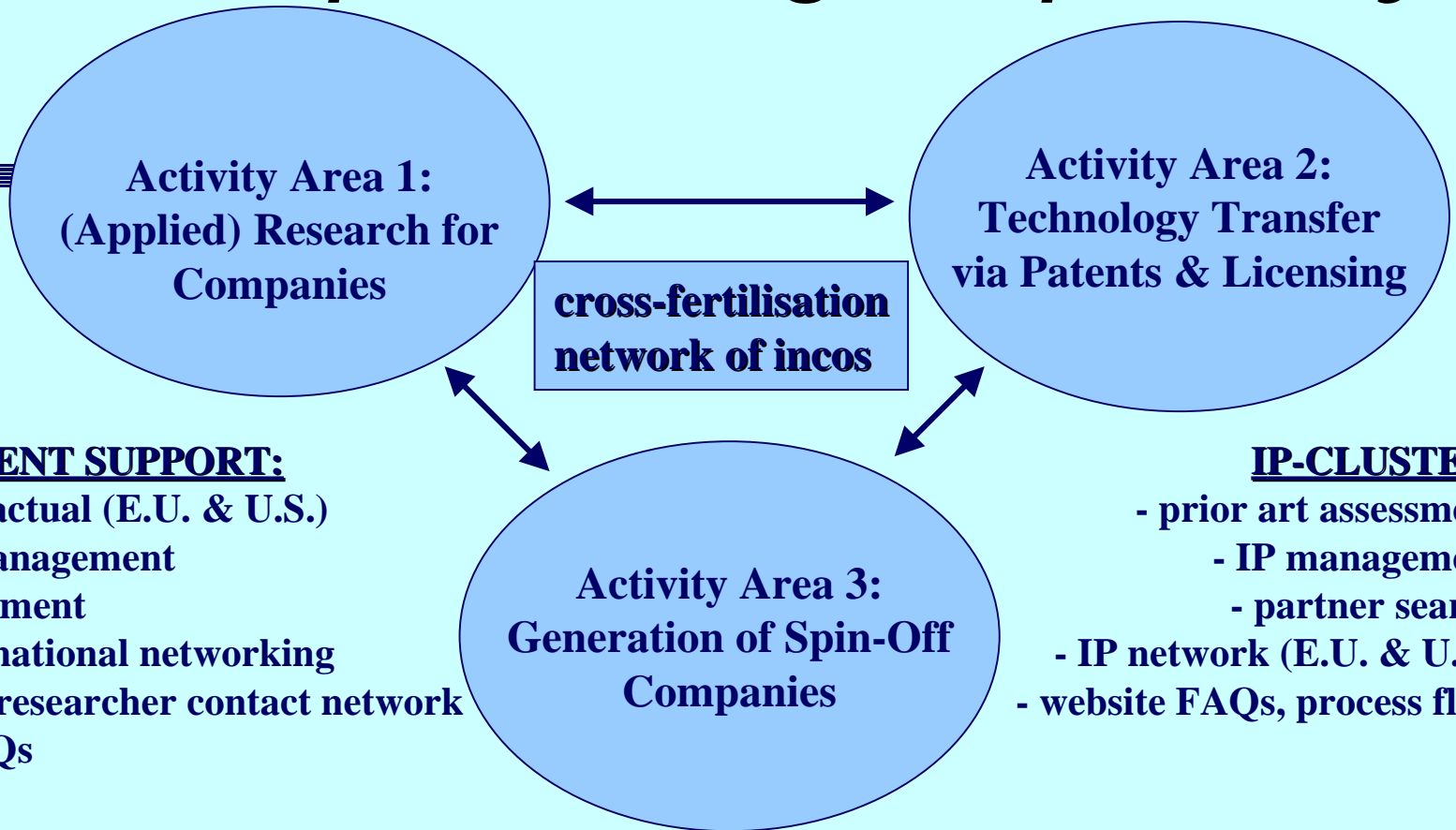
Propensity to commercialise



Structuring the pathways: training

- **Training the staff of K.U. LRD**
- **Training innovation coordinators**
- **Specialized courses:**
 - **IP management**
 - **Business Plan development**
 - **High Tech Growth management**
 - **Spinnova training course**
- **Awareness creation (students)**

Implementing the pathways:



MANAGEMENT SUPPORT:

- legal, contractual (E.U. & U.S.)
- financial management
- HR management
- active international networking
- reliance on researcher contact network
- website FAQs

IP-CLUSTER:

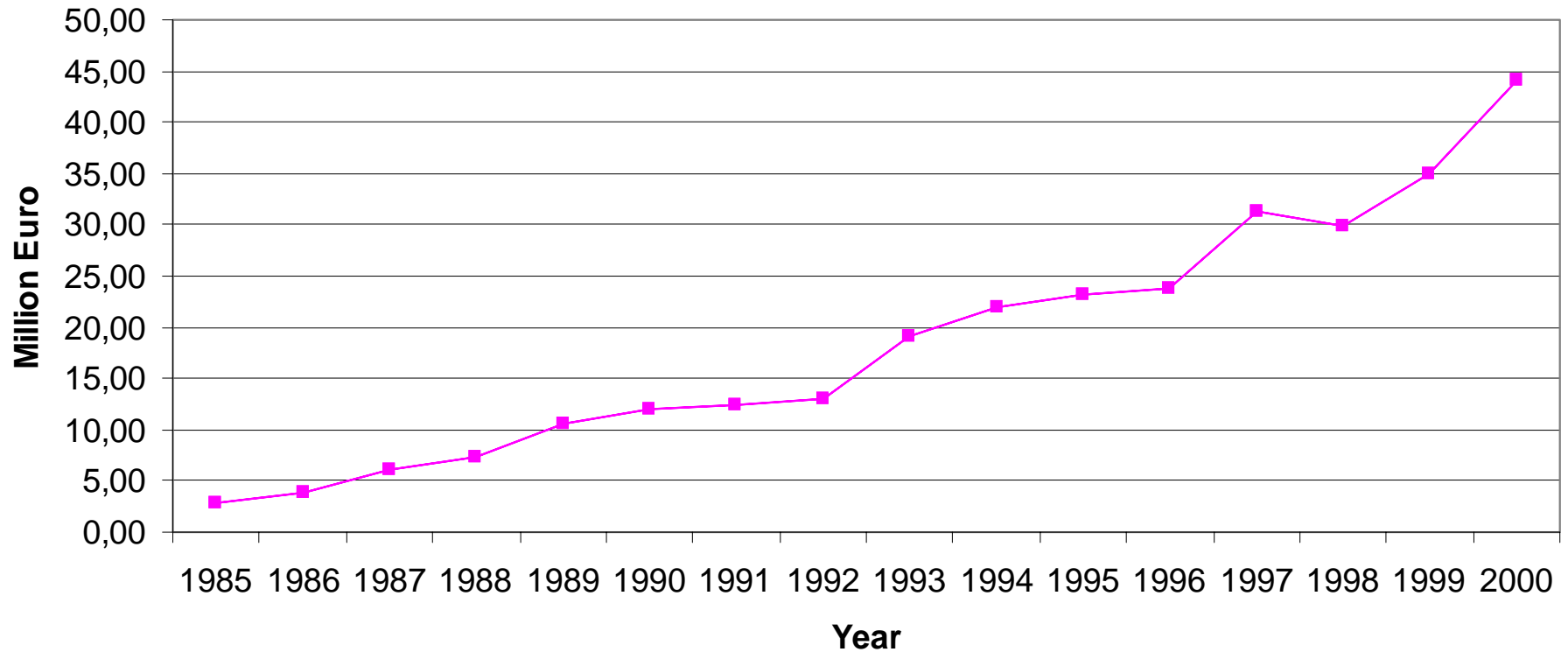
- prior art assessment
- IP management
- partner search
- IP network (E.U. & U.S.)
- website FAQs, process flow

INCUBATOR ACTIVITIES:

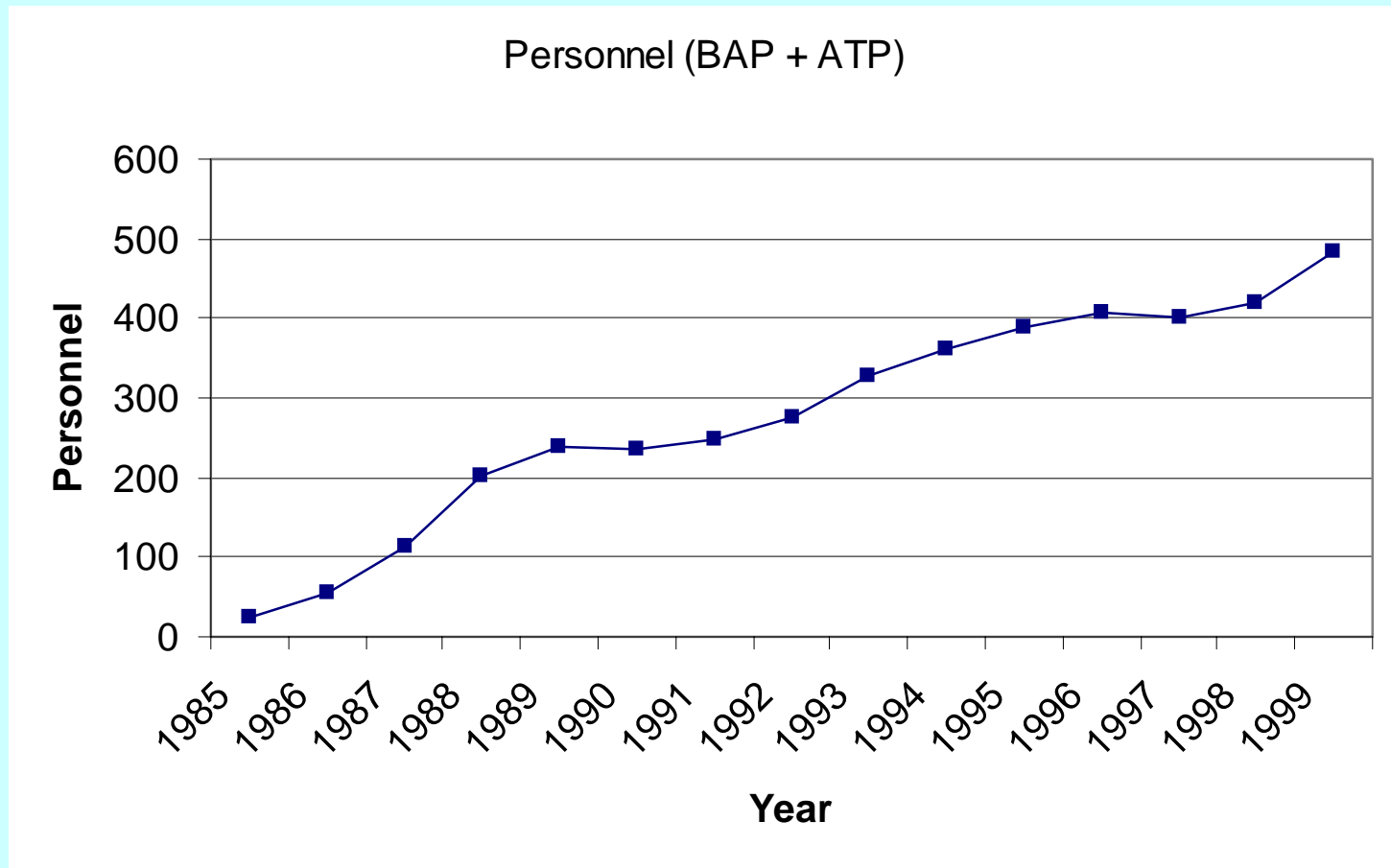
- business plan development, website, FAQs
 - equity via allied venturing fund
- coaching further business model development
- incubator and research park development
- regional network fora (Leuven.Inc)

Some results K.U. Leuven R&D:

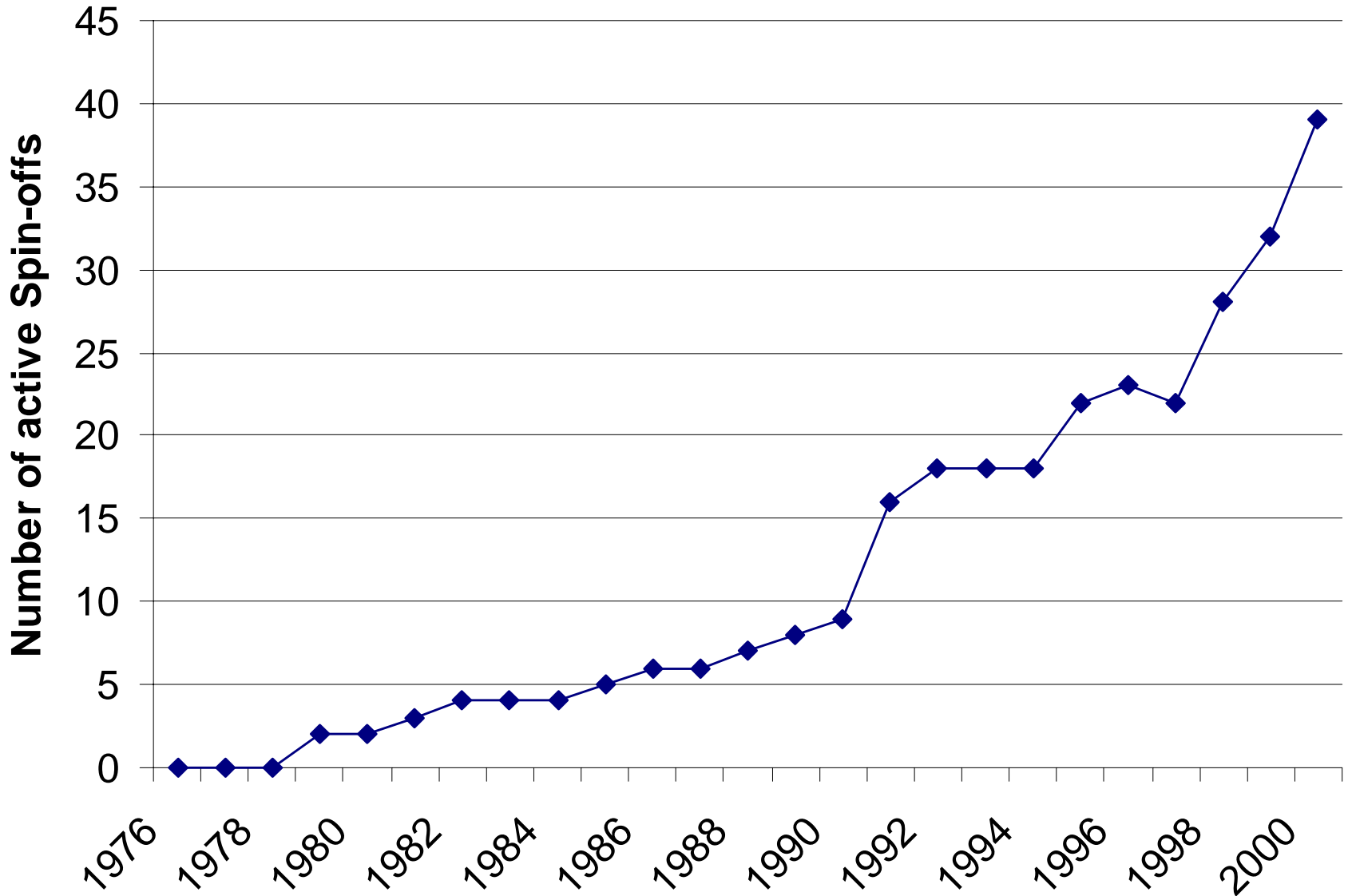
Evolution turnover (45 MEuro, 2000)



Some results K.U. Leuven R&D:



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Some results K.U. Leuven R&D:

- **Number of training courses by Leuven.Inc since 2000: 7**
- **Number of Spinnova training courses: 8**
- **Spinnova “Best Practice Book”**
- **18-month staff/innovation coordinator training course organized by K.U. LRD**
- **Annual number of students in entrepreneurship course reached 240 in 2000-2001**

Bringing in the regional dimension:

D.V. = Log(Innovation count at regional level), N = 125 U.S. Metr. Stat. Areas,
 *= coefficients significant at p=0.01-level
 (Varga, 1999)

Model	OLS Full	OLS Intermediate	OLS Final
Constant	-0.230* (0.183)	-0.315* (0.157)	-0.381* (0.154)
LOG(RD: industrial RD employment)	0.270* (0.056)	0.283* (0.054)	0.295* (0.054)
LOG(URD: university RD expenditures)	-0.302* (0.141)	-0.190* (0.067)	-0.186* (0.067)
LOG(Concentration high tech)*LOG(URD)	0.185* (0.036)	0.184* (0.036)	0.188* (0.036)
LOG(Pres. business service)*LOG(URD)	0.081* (0.015)	0.085* (0.014)	0.088* (0.014)
LOG(Enrollment)*LOG(URD)	0.026 (0.029)		
RANK*LOG(URD)	0.033 (0.020)	0.035 (0.020)	
LOG(% large firms)*LOG(URD)	-0.094* (0.025)	-0.096* (0.025)	-0.098* (0.025)
R ² -adjusted	0.737	0.738	0.733

Conclusion: Ingredients for success

- **Knowledge organisation as incubator, trainer and facilitator of economic growth**
- **Appropriate mix of knowledge-intensive high-tech start-ups and established companies**
- **Professional support infrastructure and environment, including risk capital**
- **Incubator facilities and research parks, fostering a knowledge-intensive business texture**
- **Partnership between all actors involved, including the regional authorities**