



Intellectual Property Rights for Competitiveness: Challenges for European ICT SMEs



Gabriella Cattaneo e Elena Vaciago, IDC

Final Workshop Paris, 4 June 2008

A programme of the



European
Commission



Workshop Agenda - I

09:30 – 10:00

Welcome and opening

Laurent Gille, Director, Dep. de Sciences Economiques et Sociales, Telecom Paris

The Sectoral e-Business Watch

Introduction by **Hasan Alkas**, e-Business Watch Program Manager, EC, DG Enterprise and Industry

e-Business Trends and Challenges in Europe

Maria Woerndl, Project Manager e-Business Watch, empirica GmbH

10:00 – 10:30

Key messages from the e-Business Watch study on IPR for ICT SMEs

Gabriella Cattaneo, Research Director, and **Elena Vaciago**, Associate Consultant, IDC

10:30 – 11:00

Study discussants

Carlo Piana, Lawyer

Vincenzo Spiezia, Head of the Information and Communication Technologies Unit, OECD

11:00 – 11:30

Discussion - 11.30 Coffee Break

Workshop Agenda - II

11:45 – 12:45 **PANEL DISCUSSION**

The role of policies to improve the use of IPR by ICT SMEs and promote innovation in the EU

Charles –H. Schulz, Foundation for a Free Information Infrastructure (FFII), Belgium

Carlo Piana, Lawyer

Henry J.F. Ryan, Lios Geal Consultants, Ireland

Alfred Radauer, Austrian Institute for SME Research

12.45 – 13.00

Conclusions **Hasan Alkas**, e-Business Watch programme manager, EC, DG Enterprise and Industry

13.00-14.00 lunch

14:00 – 15:30 **Advisory Board meeting**

Reflection on workshop and next steps

Advisory Board Members / EC / study team

Presentation Agenda

- **Study Scope and Evidence Base**
- **The Critical Role of IPR for ICT SMEs**
- **IPR Adoption and Profile of IPR Users**
- **Opinions on the IPR Regulatory Framework**
- **IPR and Business Performance**
- **Impact of IPR on Competitiveness: Case Studies and Business Models**
- **Open Source Software, Standardization and Interoperability Issues**
- **Main Conclusions**
- **Policy Recommendations**

Study Scope and Evidence Base

Study Target: SMEs under 250 employees in the ICT Sectors (NACE Rev. 2)

■ ICT Manufacturing

- ◆ Manufacture of electronic components, 26.11
- ◆ Manufacture of computers and peripheral equipment, 26.2
- ◆ Manufacture of communication equipment, 26.3
- ◆ Manufacture of consumer electronics, 26.4

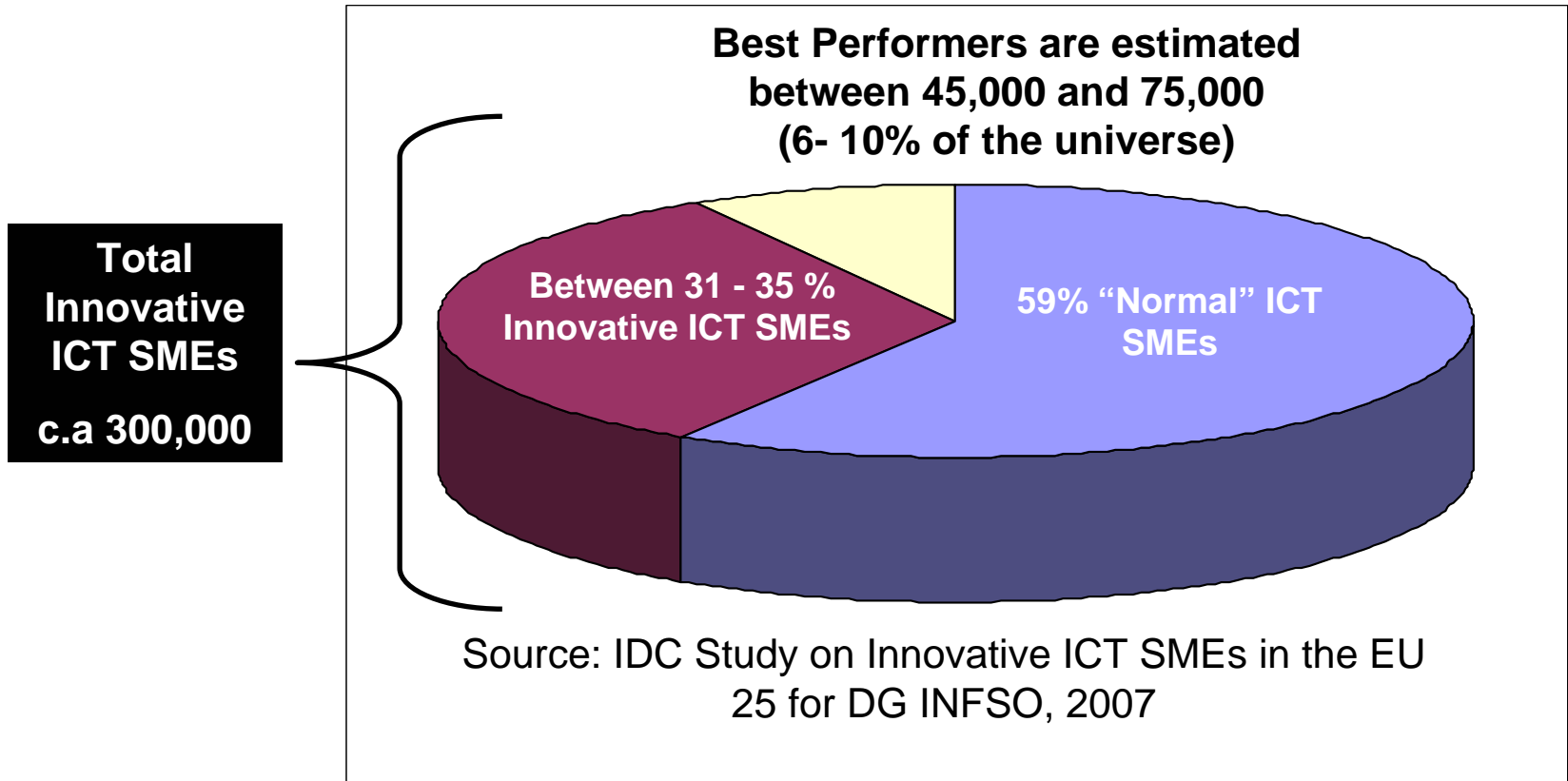
■ Software

- ◆ Publishing of computer games, 58.21
- ◆ Other software publishing , 58.29

■ ICT Services

- ◆ Telecommunications, 61
- ◆ Information service activities, 63

ICT SMEs are 730,000 in the 25 EU (41% are Innovative)



Total Universe: 731,271 ICT SMEs

Formal IP Rights and Informal Protection Methods

Formal IP are rights granted by the legal system

Informal IP rights are protected in practice without legal procedures

Formal IPR	Informal Protection Methods
<p>Patent</p> <p>Copyright</p> <p>Trademark</p> <p>Industrial design (registered and non registered)</p> <p>Other (special cases):</p> <ul style="list-style-type: none">• Database sui generis rights• Topography of semiconductor• Domain names.	<p>Trade secret</p> <p>Lead time advantage</p> <p>Complexity of design</p> <p>Digital Rights Management</p>

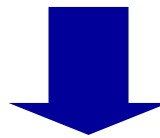
The Critical Role of IPR for ICT SMEs

Main Challenges for EU ICT SMEs

- ◆ To deal with increasing international competition, go beyond local markets
- ◆ To keep up with technological innovation pace heating up again and stimulate demand
- ◆ To adapt to the reorganization of world supply chains, which is forcing greater specialisation and the elimination of less efficient firms

Why are IPR relevant for ICT SMEs ?

- ✓ **ICT SMEs must develop original knowledge and use the full range of IPR for their competitiveness**
- ✓ **But SMEs face greater barriers to use IPR, because of their minor resources and lack of specific expertise**
- ✓ **Key competitive battles on IPR in ICT: software patents, piracy and counterfeiting of software and digital content, open standards and interoperability**



Critical Policy Issue

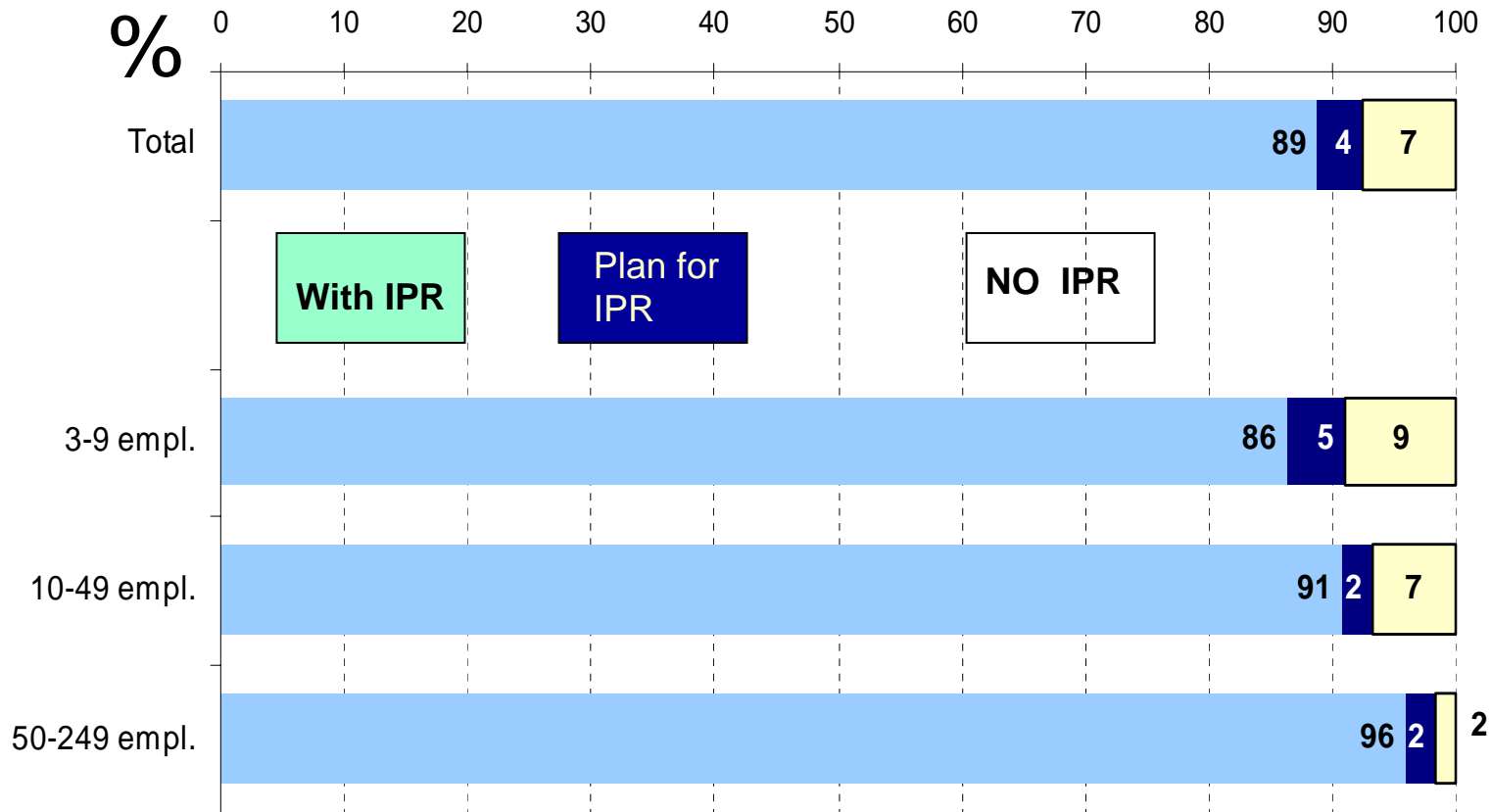
Evidence Base: CATI Survey of 683 ICT SMEs in 8 EU Member States

Target screened by use of IPR, subsector and size

ICT manufacturing	Total	261
ICT manufacturing	3-9	76
ICT manufacturing	10-49	93
ICT manufacturing	50-249	92
Information technology services	Total	140
Information technology services	3-9	51
Information technology services	10-49	55
Information technology services	50-249	34
Software publishing	Total	282
Software publishing	3-9	104
Software publishing	10-49	102
Software publishing	50-249	76

IPR Adoption and Profile of IPR Users

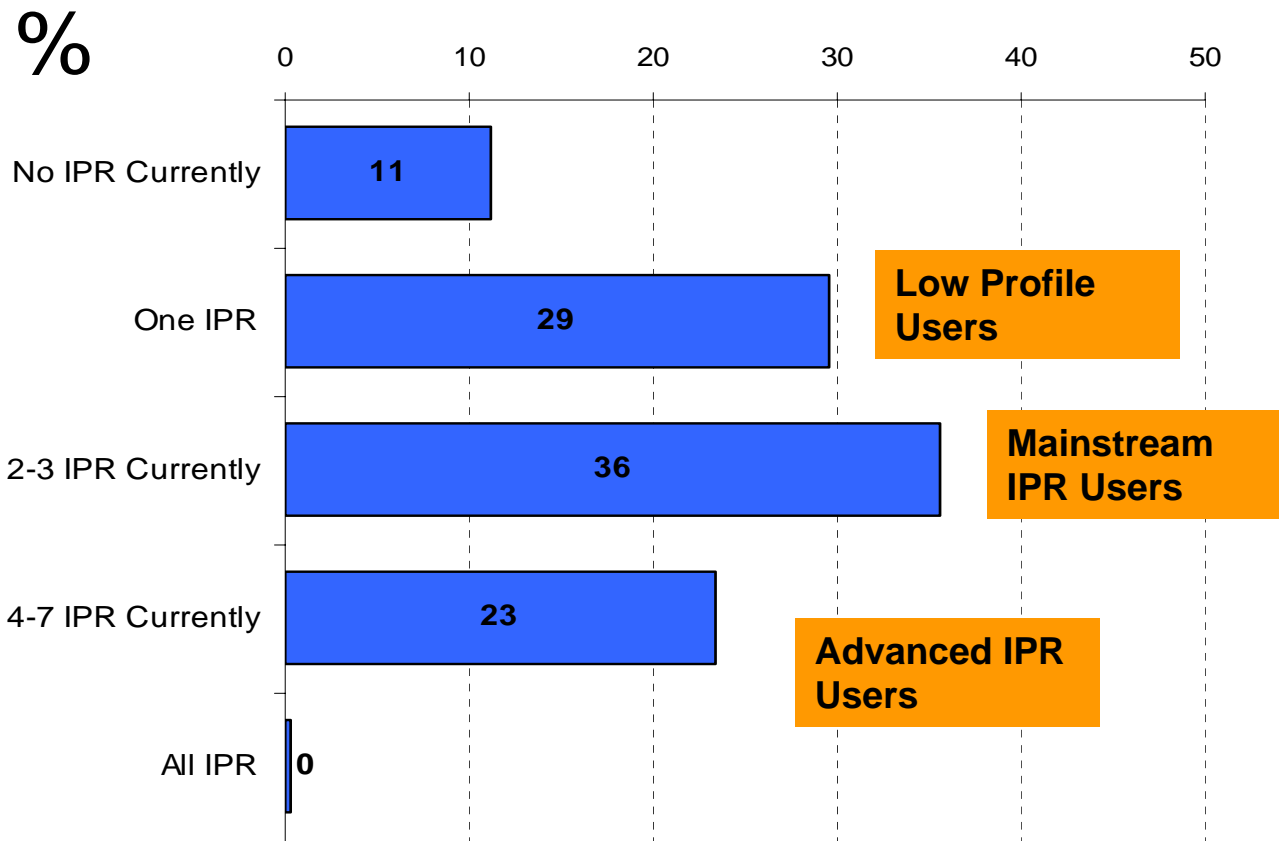
The Survey selected a Sample of ICT SMEs with IPR



Base: ALL
N=683

Source: e-Business W@tch Survey "IPRs in ICT SMEs", August September 2007

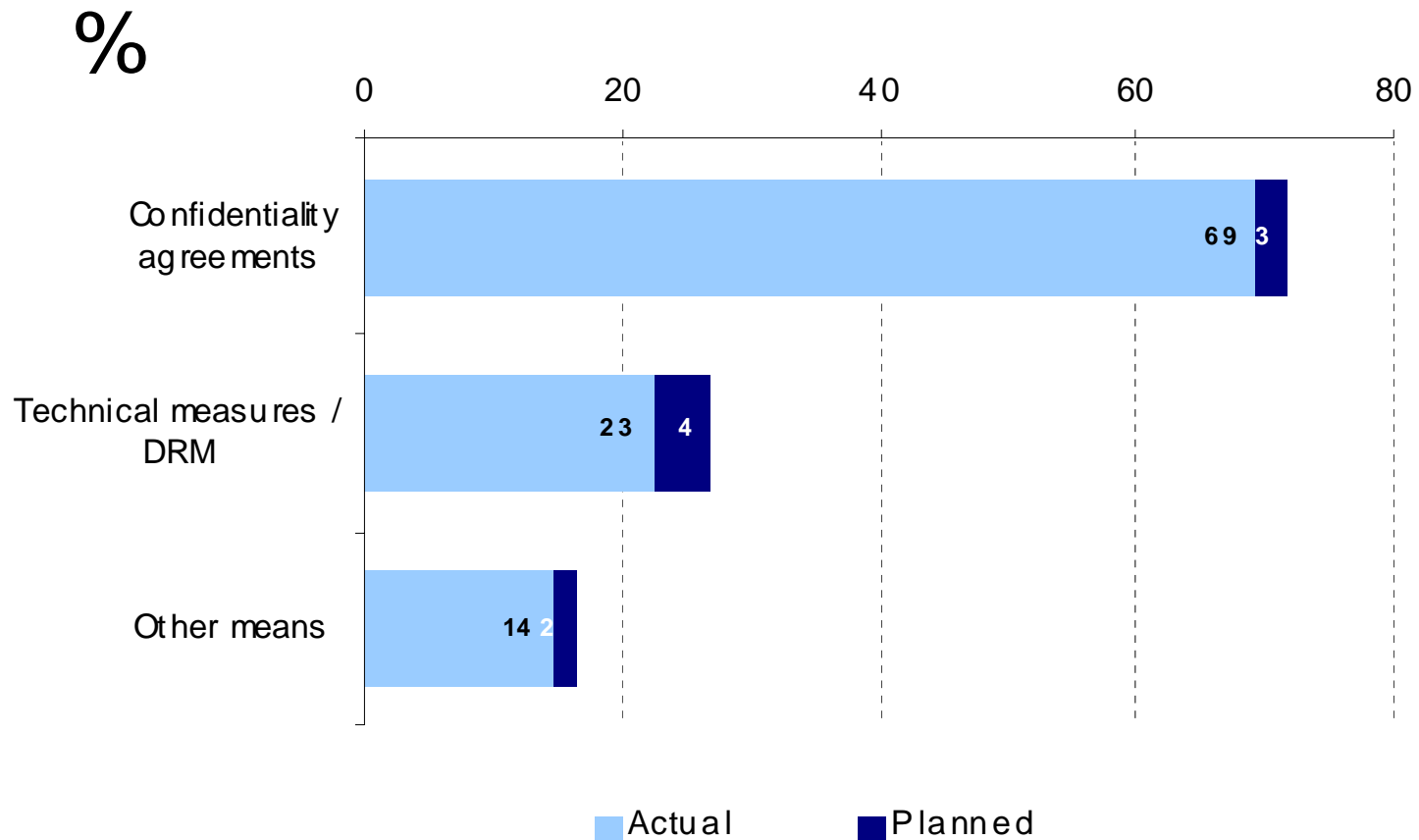
Main Profiles of IPR Users: Advanced Users are a minority (8 IPR tools)



Base: ALL
N=683

Source: e-Business W@tch Survey "IPRs in ICT SMEs", August September 2007

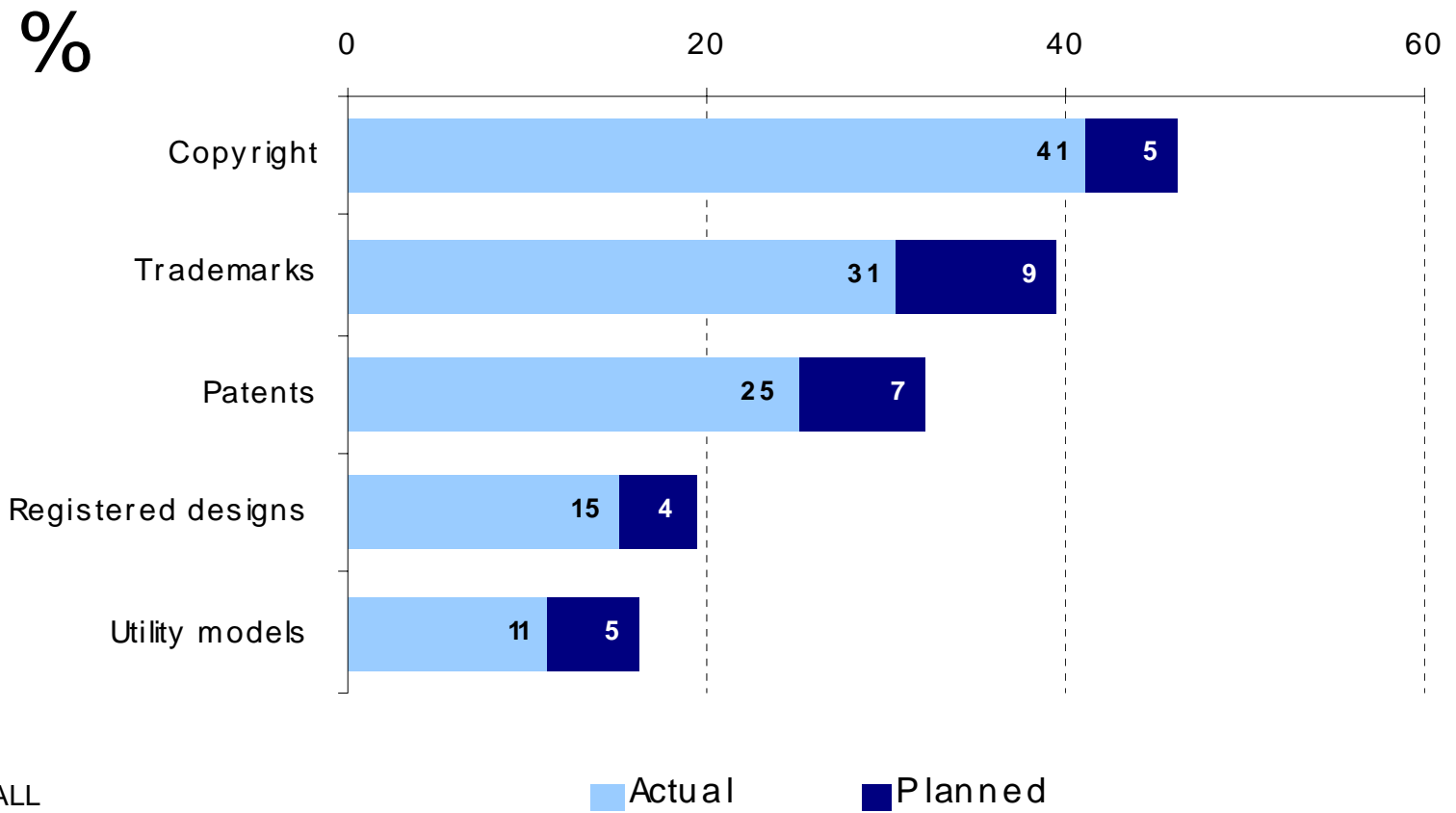
Adoption of Informal IPR: Confidentiality Agreement the Most Used



Base: ALL
N=683

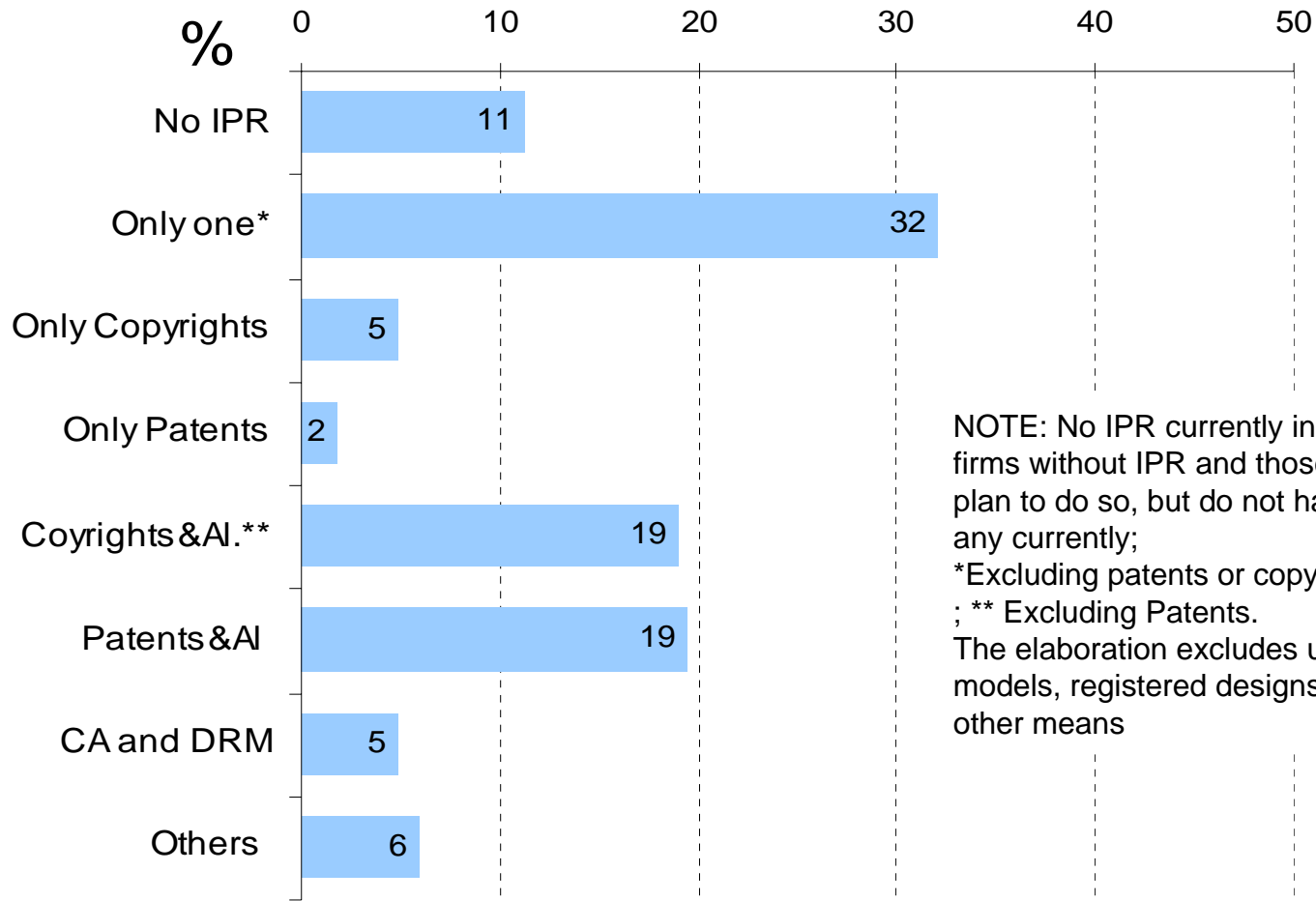
Source: e-Business W@tch Survey "IPRs in ICT SMEs", August September 2007

Adoption of Formal IPR: the relevance of Copyright



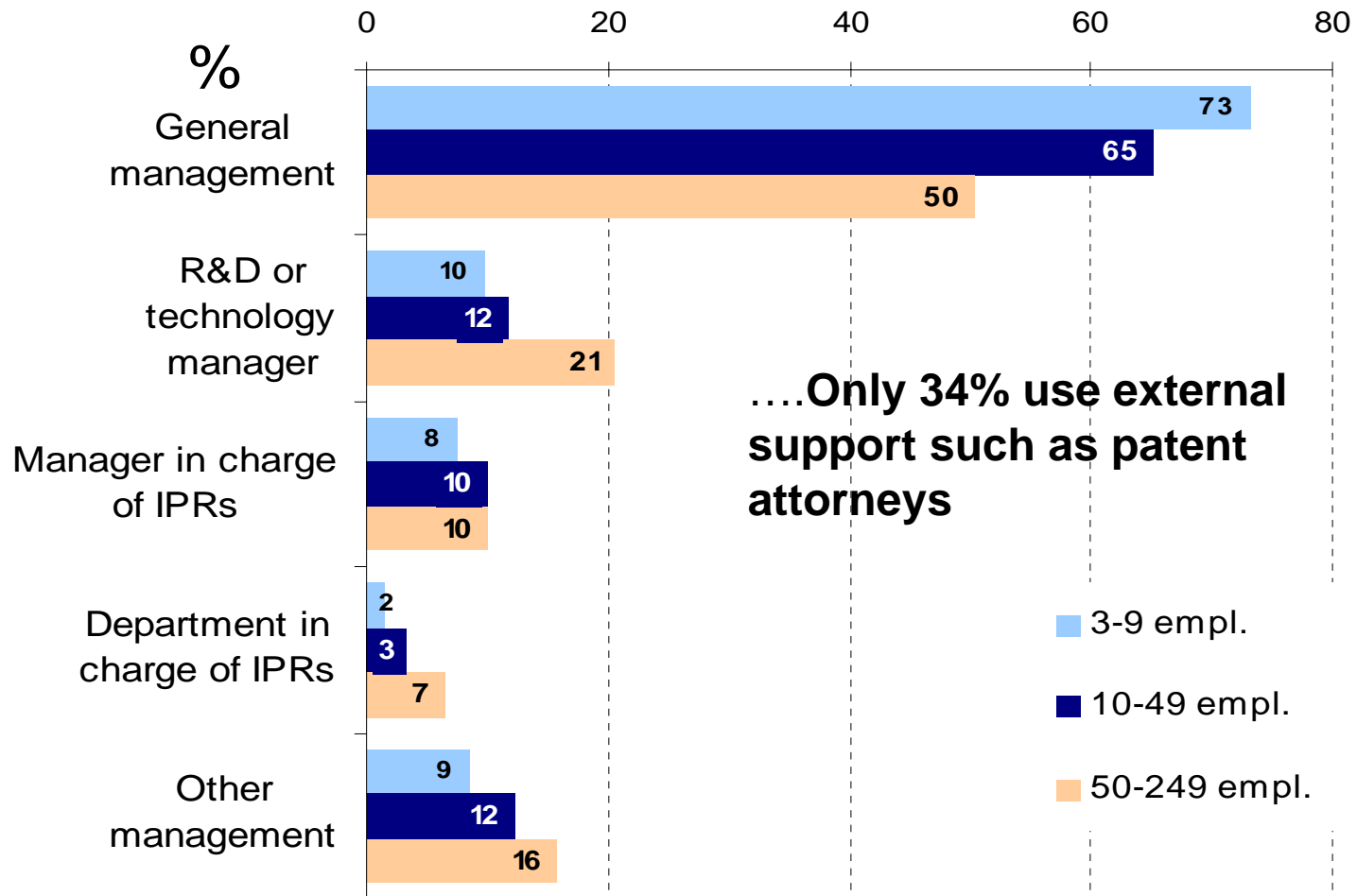
Source: e-Business W@tch Survey "IPRs in ICT SMEs", August September 2007. .

I PR Portfolio: Most Frequent Combinations of 5 Main I PR

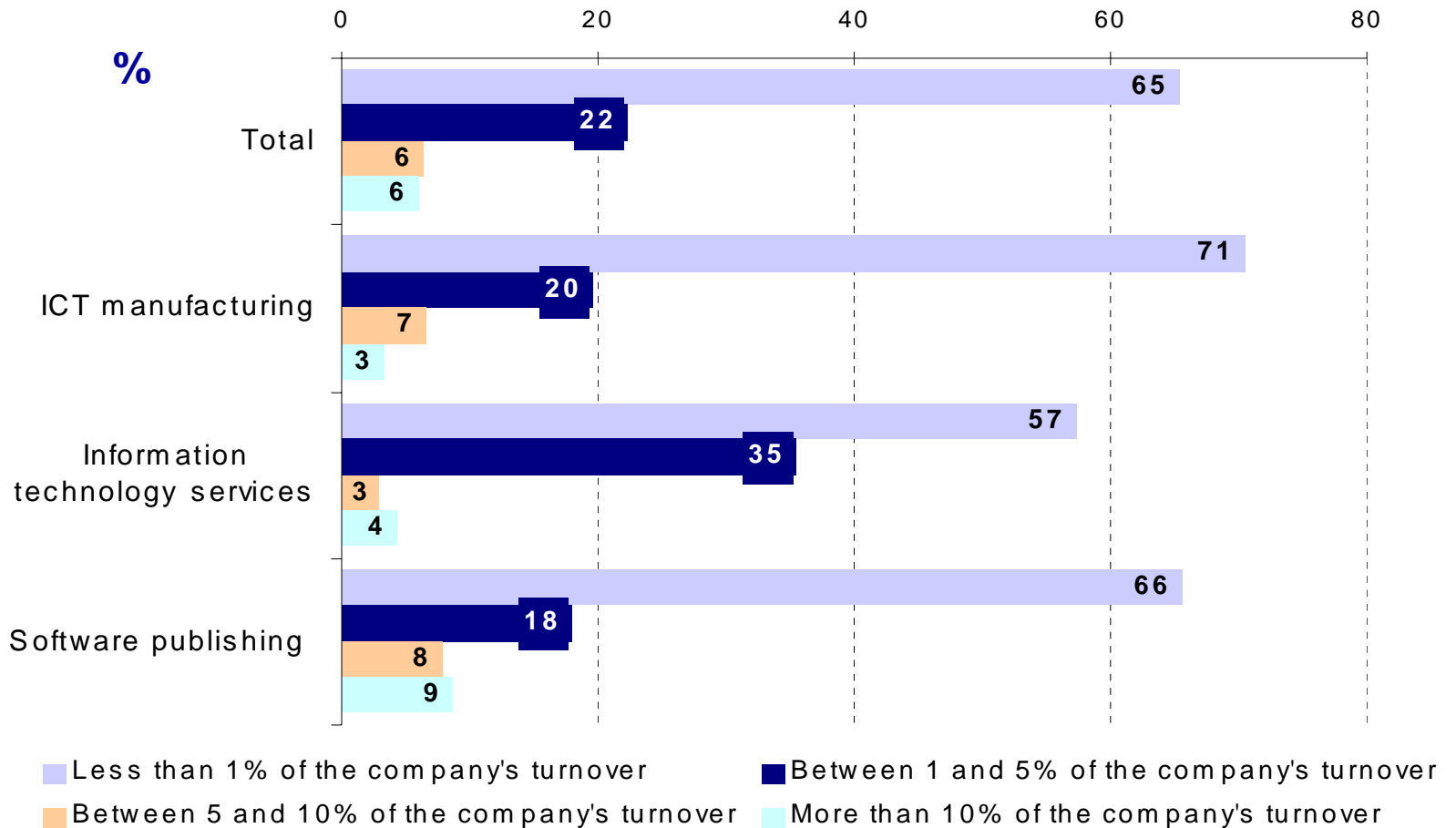


NOTE: No IPR currently includes firms without IPR and those who plan to do so, but do not have any currently;
*Excluding patents or copyrights
; ** Excluding Patents.
The elaboration excludes utility models, registered designs and other means

IP Management: the Majority of Firms do not have a dedicated Function



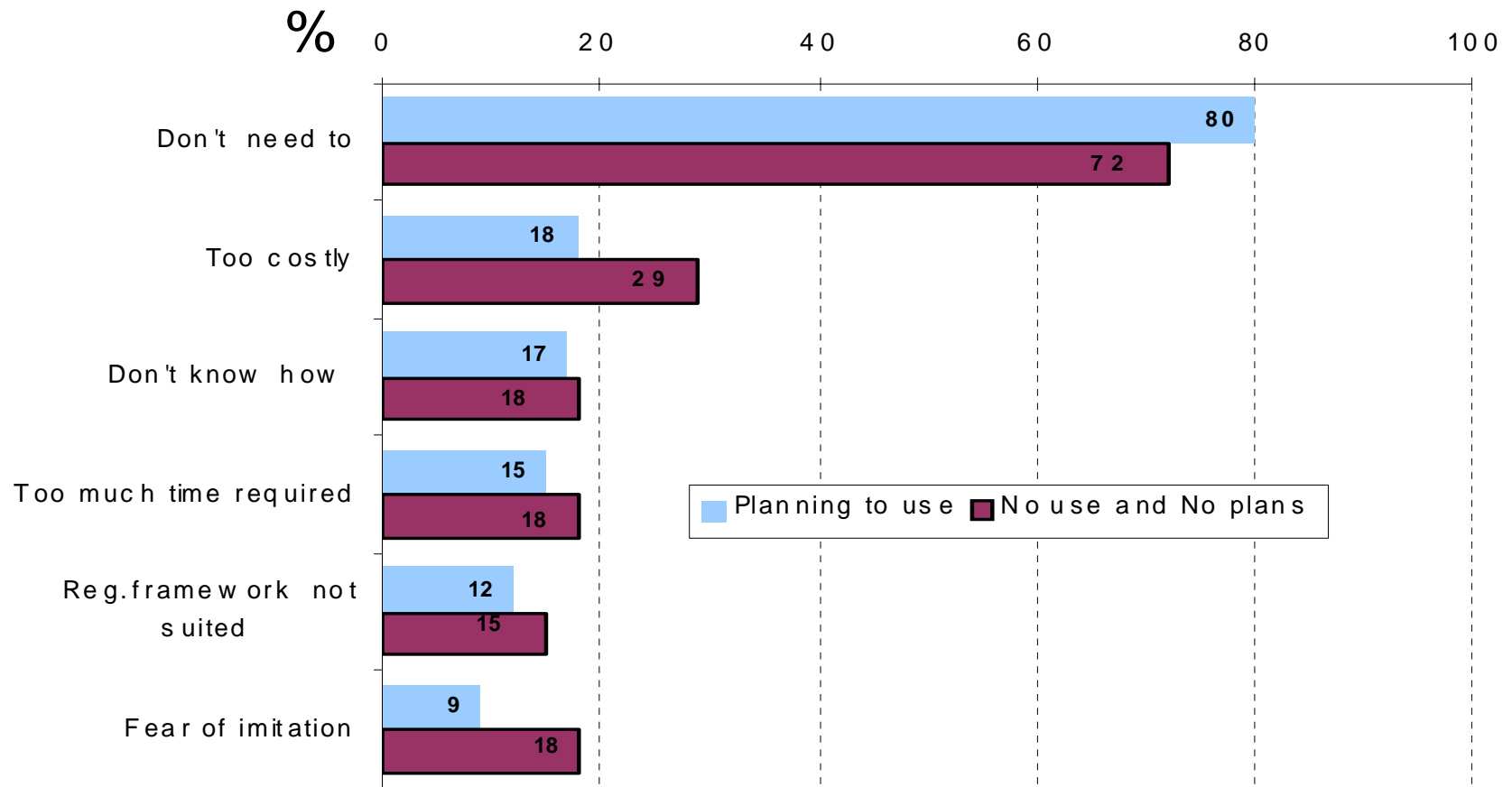
The majority of ICT SMEs spend less than 1% of Turnover for IPR



Base: Base: firms with protection, through at least one IPR. N=514

Source: e-Business W@tch Survey "IPRs in ICT SMEs", August September 2007

Non-Users of IPR: don't need them

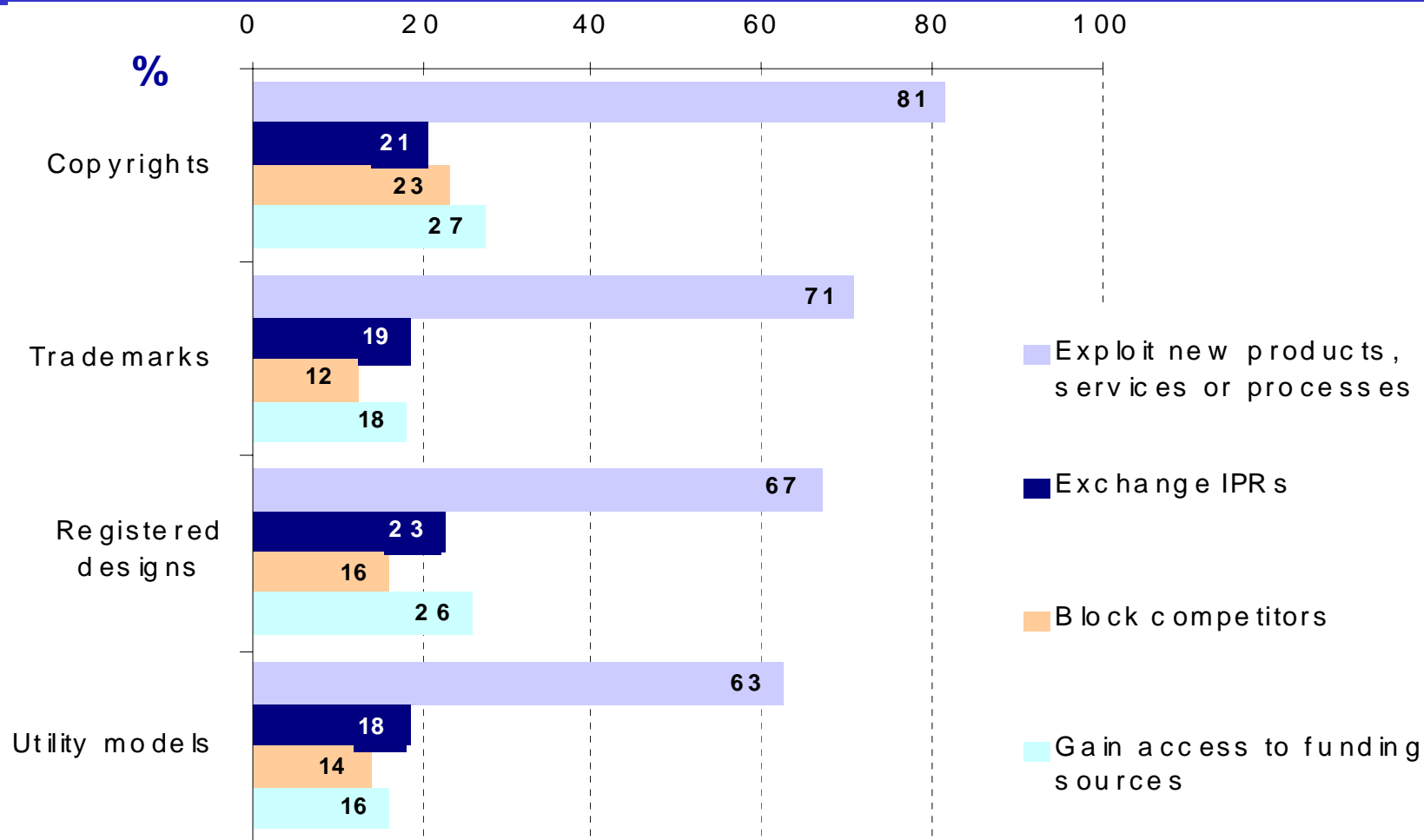


Multiple Answers.

Base: N=40 No use and NO plans + 22 Planning

Source: e-Business W@tch Survey "IPRs in ICT SMEs", August September 2007

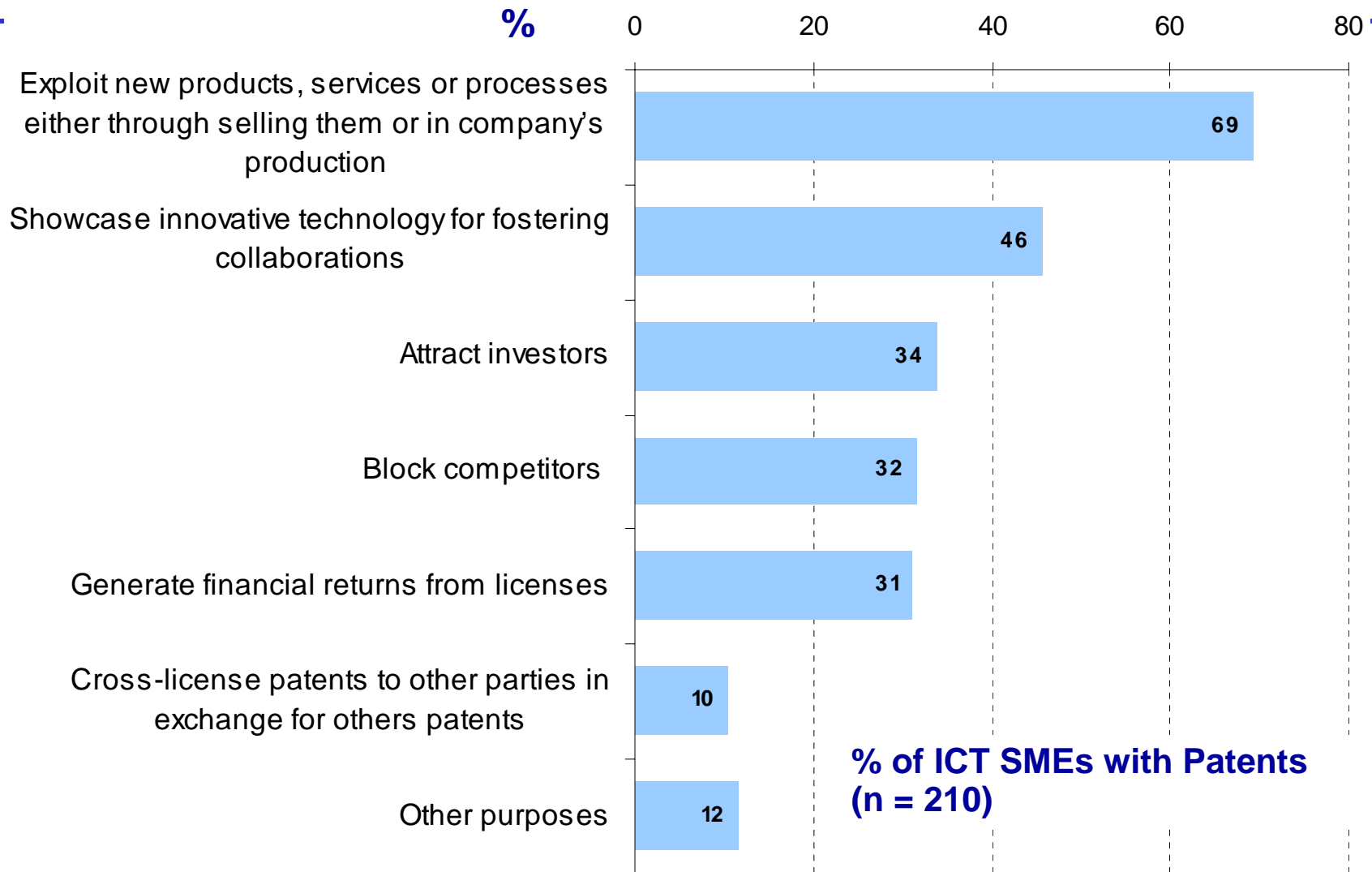
Main Goals of Formal IPR Use: to exploit innovation and to access funding



Base: firms which use copyrights (N=311); trademarks (N=251); registered design (N=125); utility models (N=95)

Source: e-Business W@tch Survey "IPRs in ICT SMEs", August September 2007

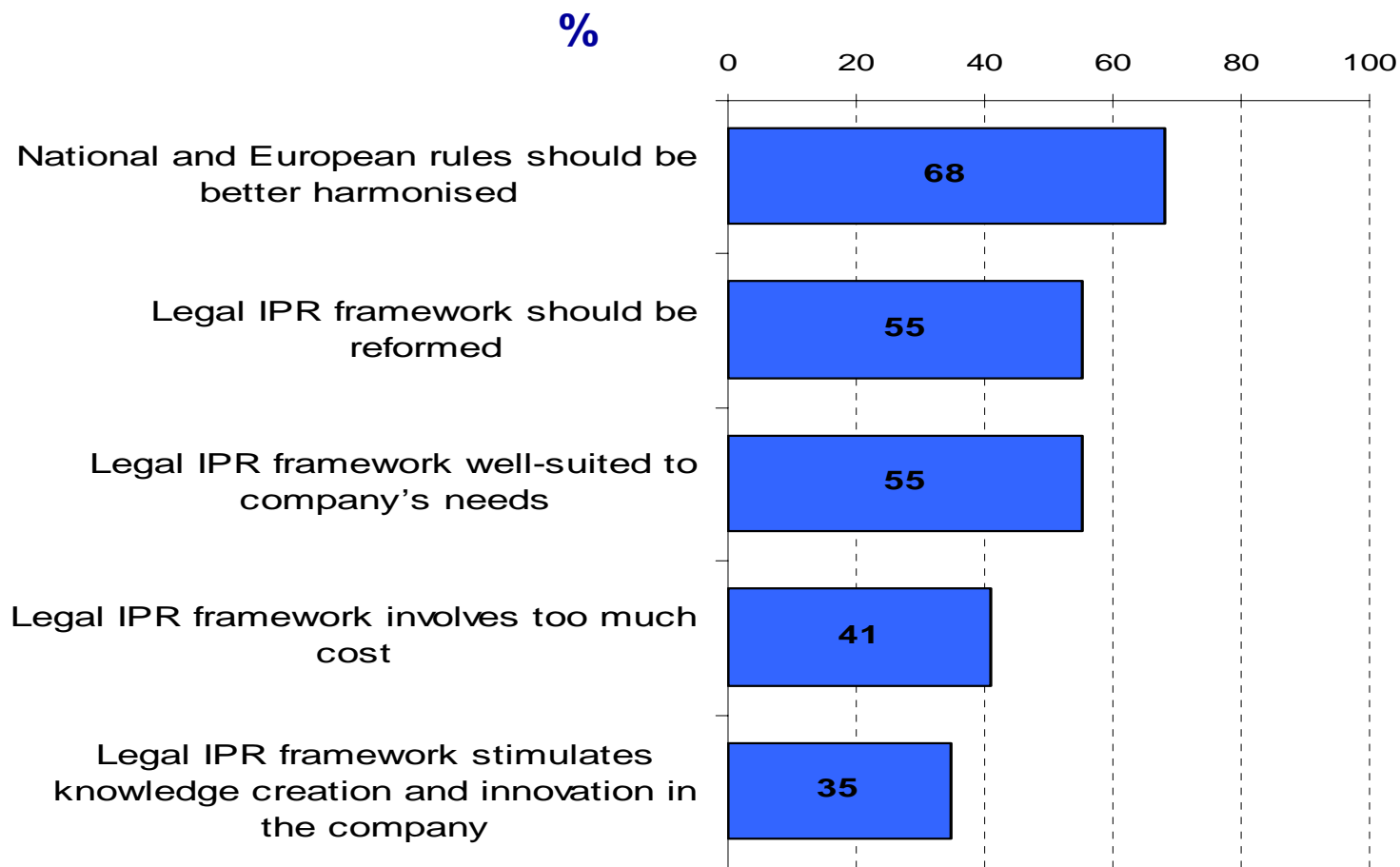
Main Goals of Patents Use





Opinions on the IPR Regulatory Framework

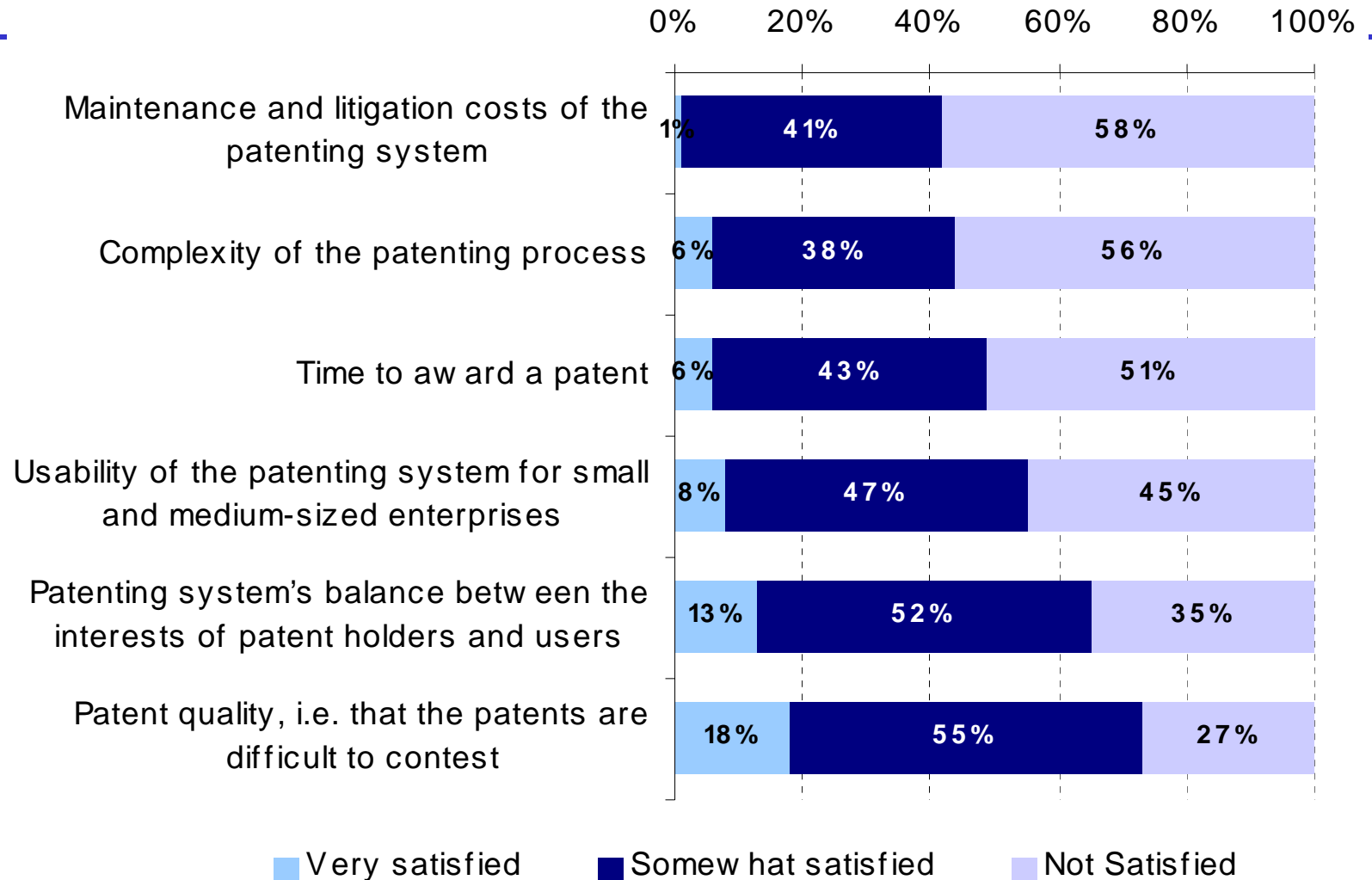
ICT SMEs are only mildly dissatisfied with the IPR Regulatory Framework



Base: firms with protection, through at least one IPR. N=621

Source: e-Business W@tch Survey "IPRs in ICT SMEs", August-September 2007

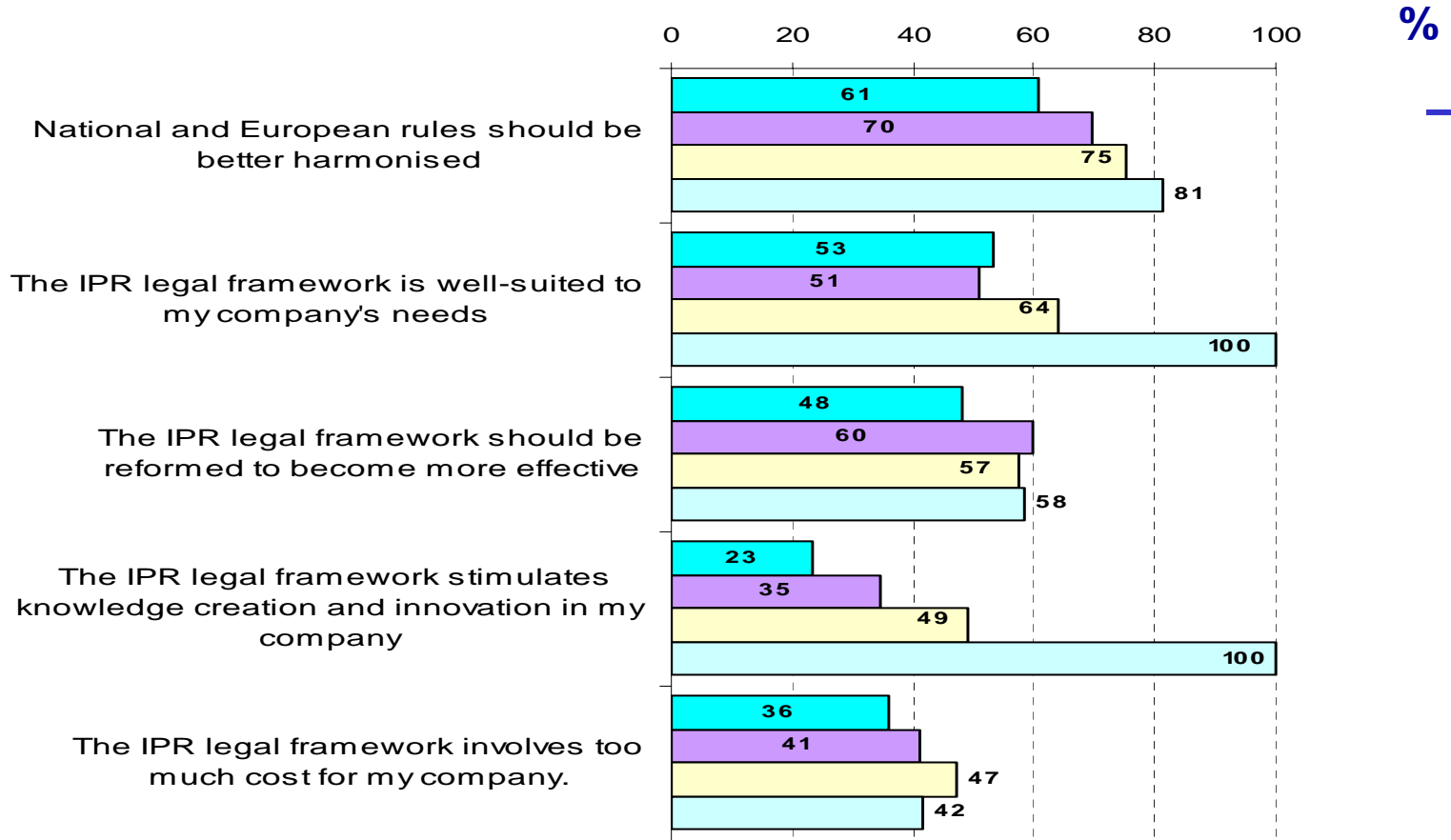
Satisfaction with the Patent System



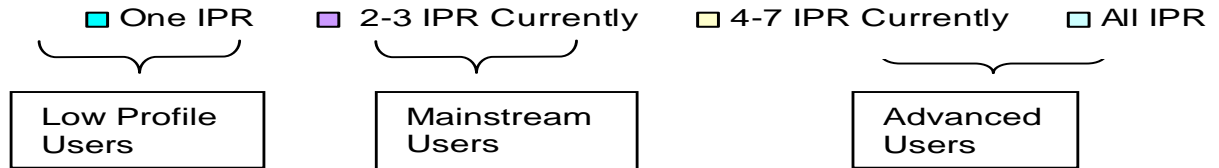
Source: e-Business W@tch Survey "IPRs in ICT SMEs", August-September 2007

% of ICT SMEs with Patents (n = 210)

Advanced Users are More Satisfied



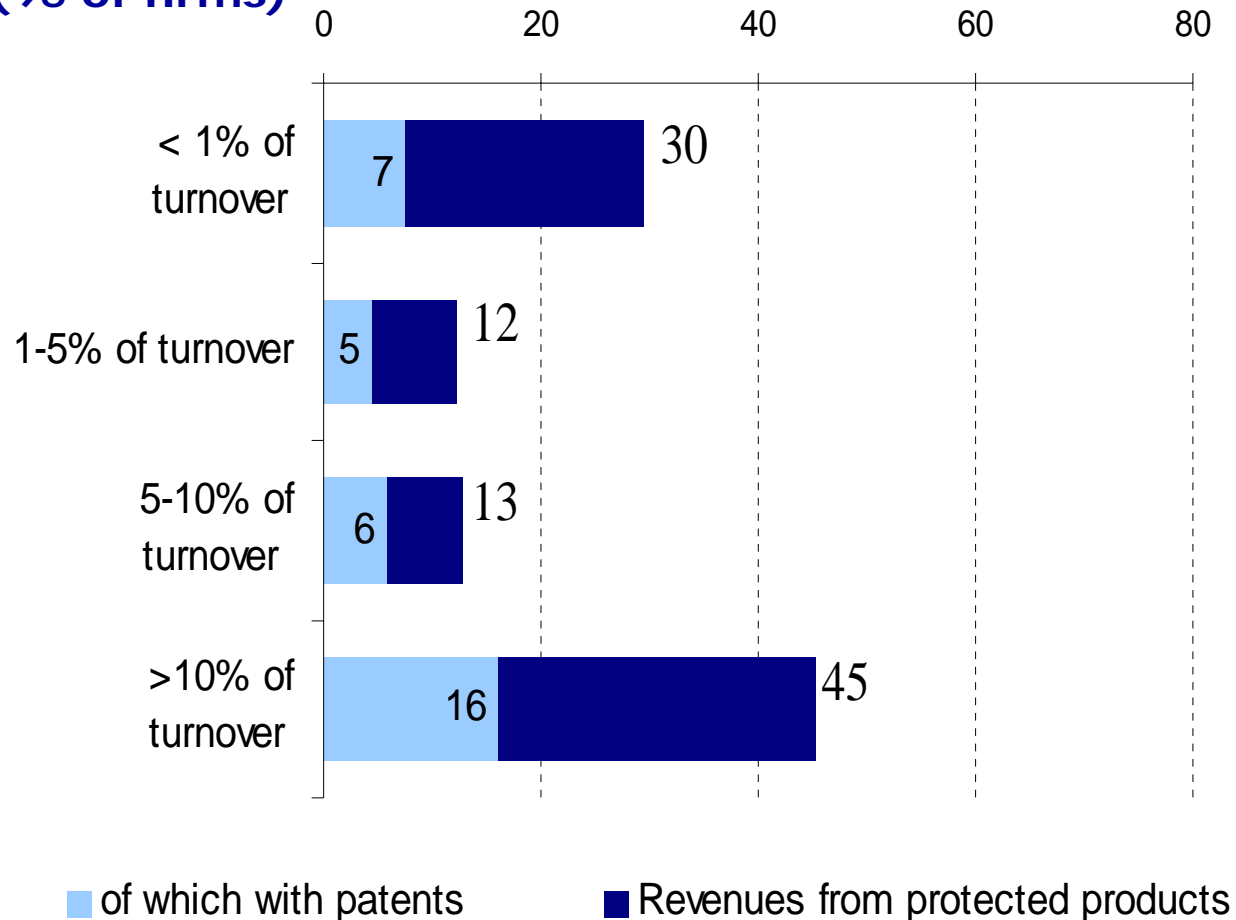
Base: ALL
N=683



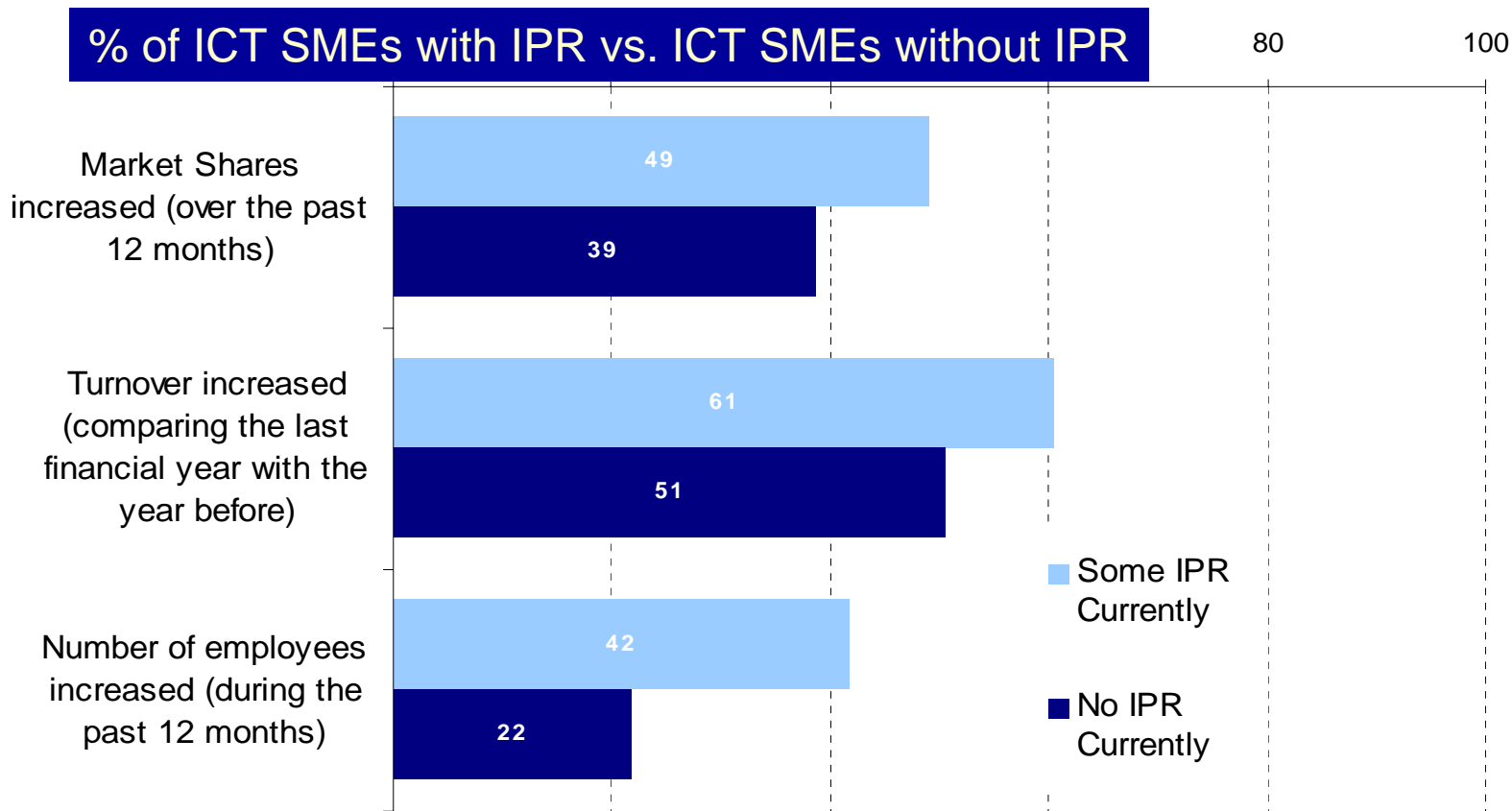
IPR and Business Performance

IP Protected Revenues are important for almost half of ICT SMEs

Revenues from protected products for all firms and those with patents (% of firms)



The Use of IPR is correlated with Market share, Turnover and Employment Growth



Base: ALL
N=683

Source: e-Business W@tch Survey "IPRs in ICT SMEs", August September 2007

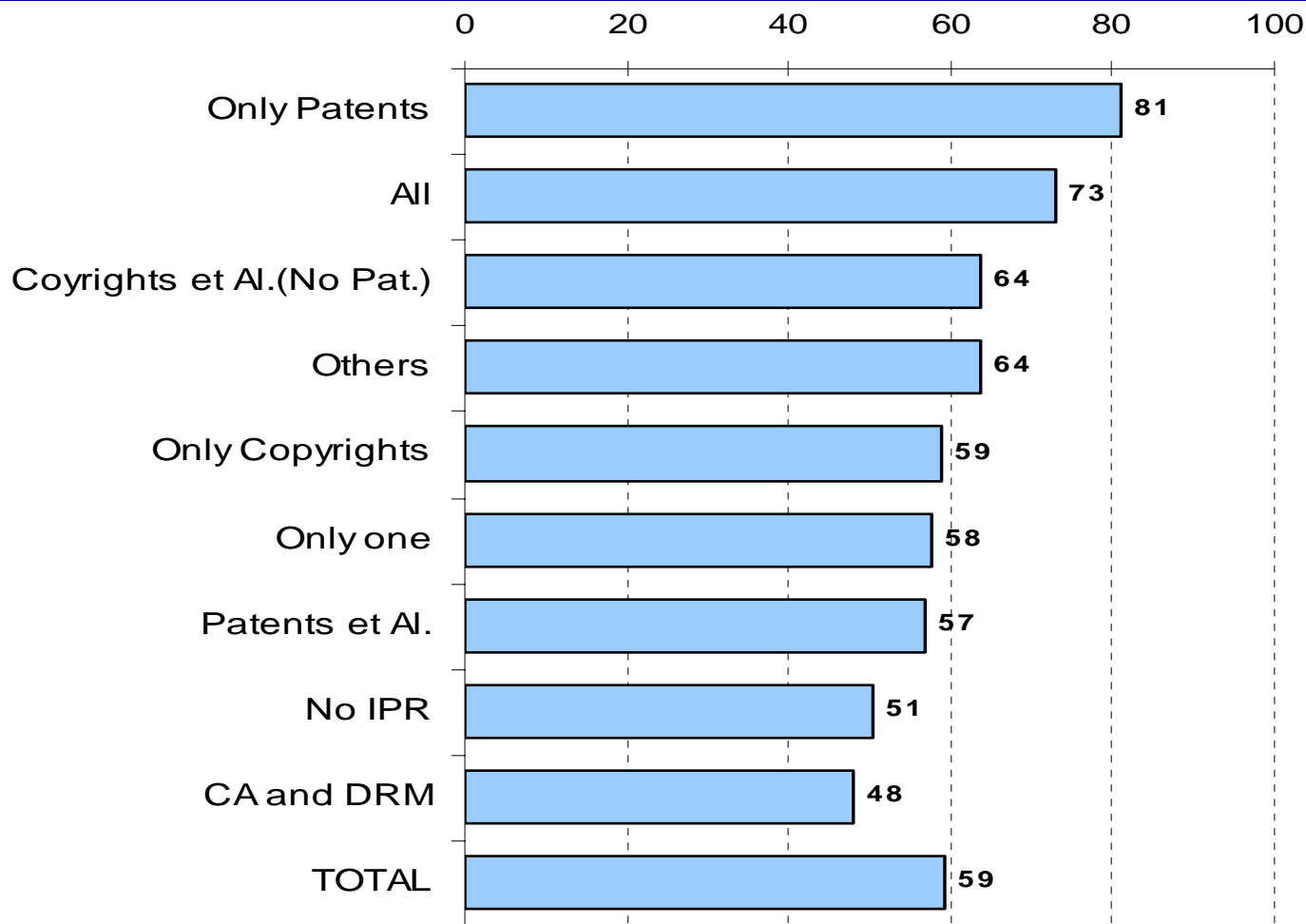
Advanced IPR Users are more likely to grow than Mainstream or Low Profile Users

ICT SMEs with Turnover Increase by size of IPR portfolio (% of ICT SMEs)



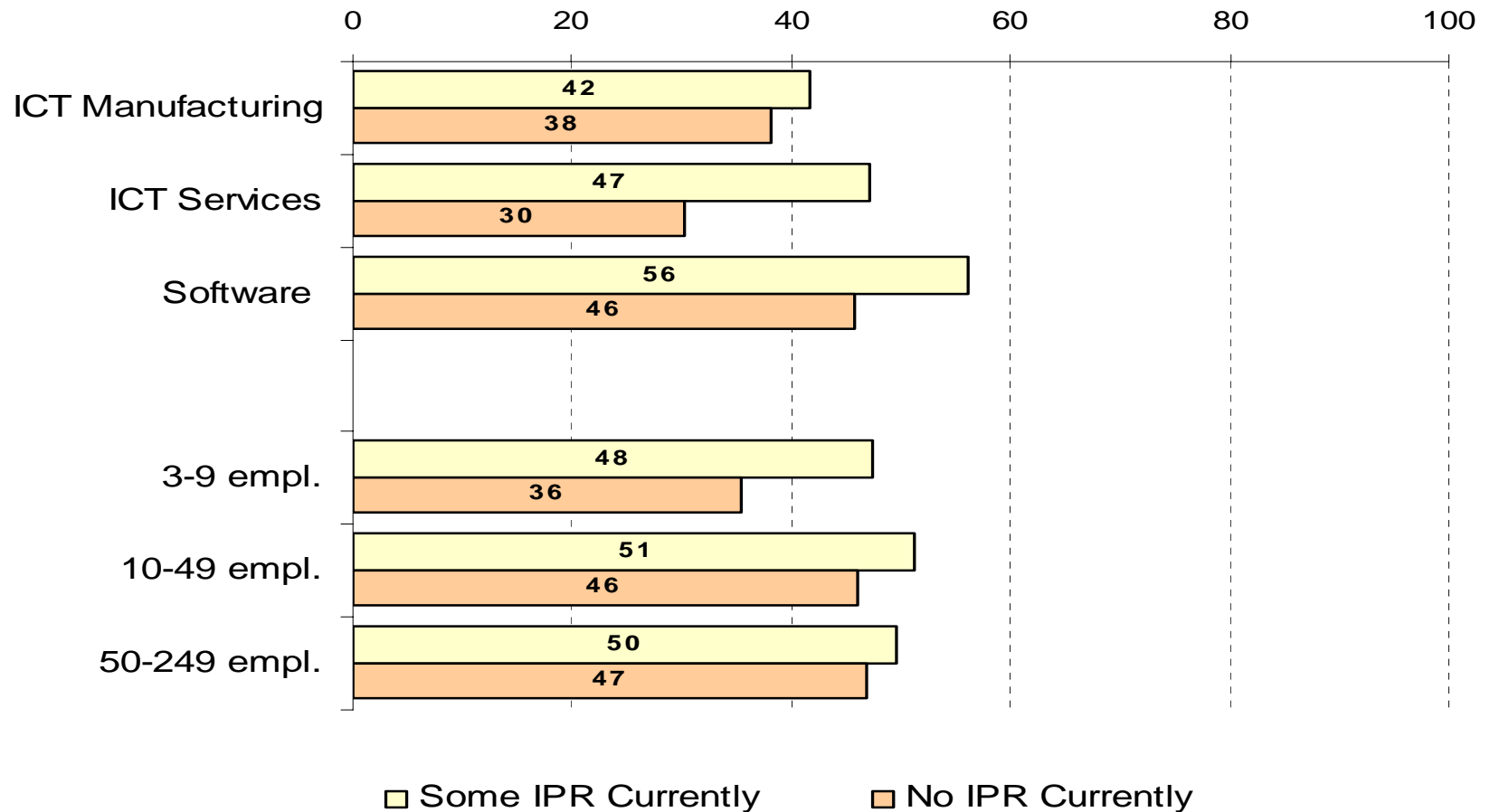
ICT SMEs with Patents and other Formal IPR are more likely to grow than Informal IPR users

ICT SMEs with Turnover Increase by type of IPR portfolio (% of ICT SMEs)



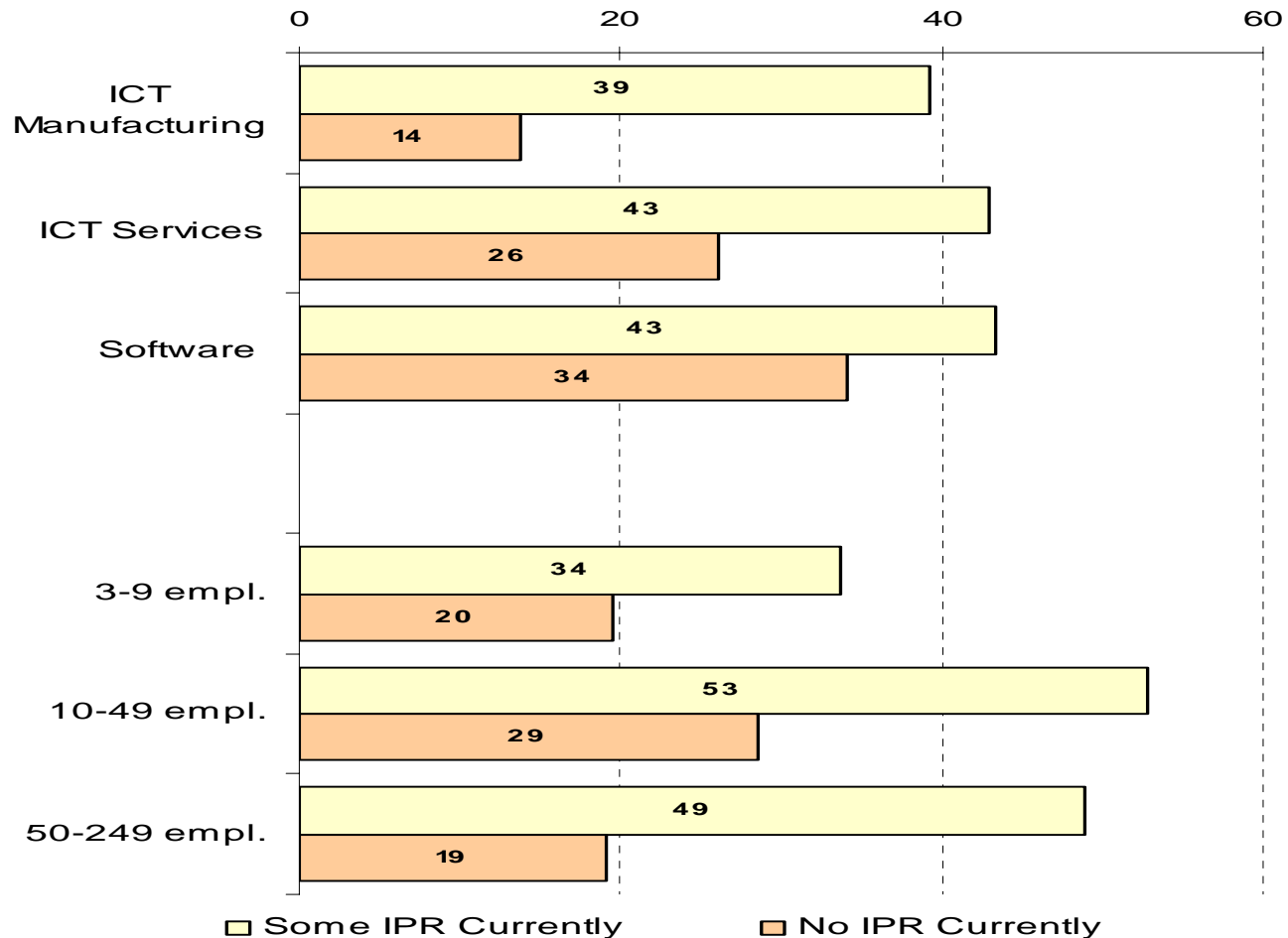
ICT SMEs with IPR are more likely to have a Market Share Increase than those without IPR in all sectors and size classes

ICT SMEs with Market Share Increase by sector and size (% of ICT SMEs)



ICT SMEs with IPR are more likely to have an Employment Increase than those without IPR

ICT SMEs with Employment Increase by sector and size (% of ICT SMEs)



Impact of IPR on Competitiveness: Case Studies and Business Models

The 9 Case Studies show the relevance of IPR for the emerging business models

IPR-based Start-Up	IP-based NTBF	Open Innovation/OSS	Innovation based on cooperation
Sensitive Objects	Array Technologies	Fluendo	Eurotech
	Comsys	IMatix	Net Insights
	DXO Labs		Vierling

IPR-Based Start-Ups

- They are often University or Research Centres spin-offs, using patents as core assets to attract venture capital and take off
- All revenues come from IP-protected products
- Sensitive Objects: bringing to the market a breakthrough technology in man-machine interfaces, organizing production, applying for patents in main international markets
- IPR impact on revenues is indirect

IP-Based New Technology Firms (pure IP-Players)

- They gather all their revenues from licenses and royalties of IP and use IPR broadly
- Array Technology-Denmark, Comsys-Israel and DxO Labs-France fall in this typology, focusing on design and development activities, outsourcing production, trading IPR
- These firms are inherently exposed to high risks, because of the need to keep investing in R&D and remain one step ahead of the competition in technological innovation.

Cooperative Innovation Firms

- These firms depend on IPR as a competitive advantage and gain part of their revenues from IP-protected products and services; tend to outsource production
- IPR allow these ICT SMEs to increase sales and market share in competitive global markets.
- Three of our case studies fall in this typology: Eurotech, Net Insights and Vierling
- Evolution of the traditional “specialised SME sub-supplier” role, adapted to the greater need for fast technological innovation and higher R&D intensity

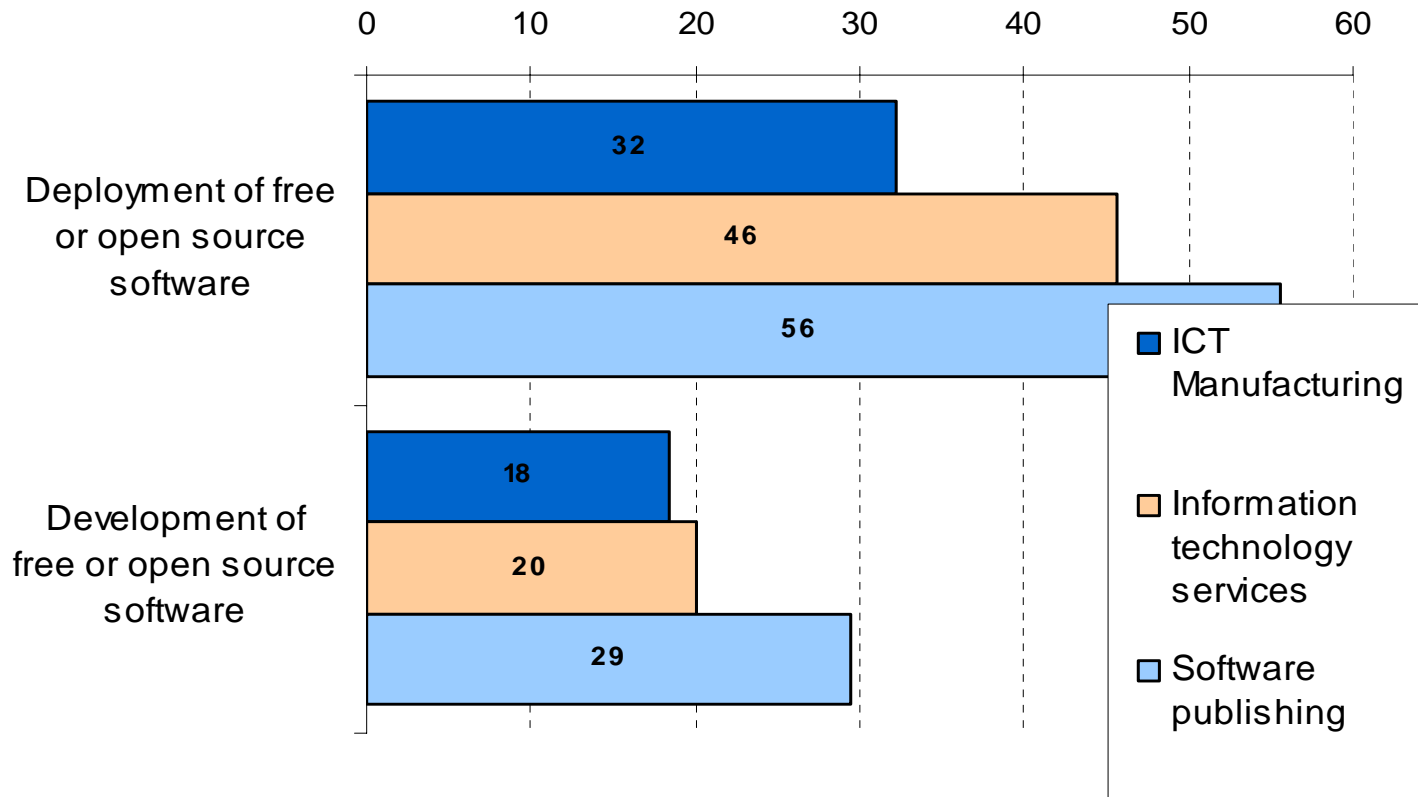
Evidence of IPR contribution to ICT SMEs competitiveness when used:

- To attract investment capital and to access finance
- To protect original knowledge and research investments when entering new and international markets
- To build a portfolio of patents for exchange in cross-licensing agreements
- To protect original knowledge when cooperating in supply chains, business alliances and other networks
- To improve the company image and competitive positioning.

Open Source Software, Standardization and Interoperability Issues

Open Source Software is widespread in the ICT industry....

% of ICT SMEs in the Sample, by sector

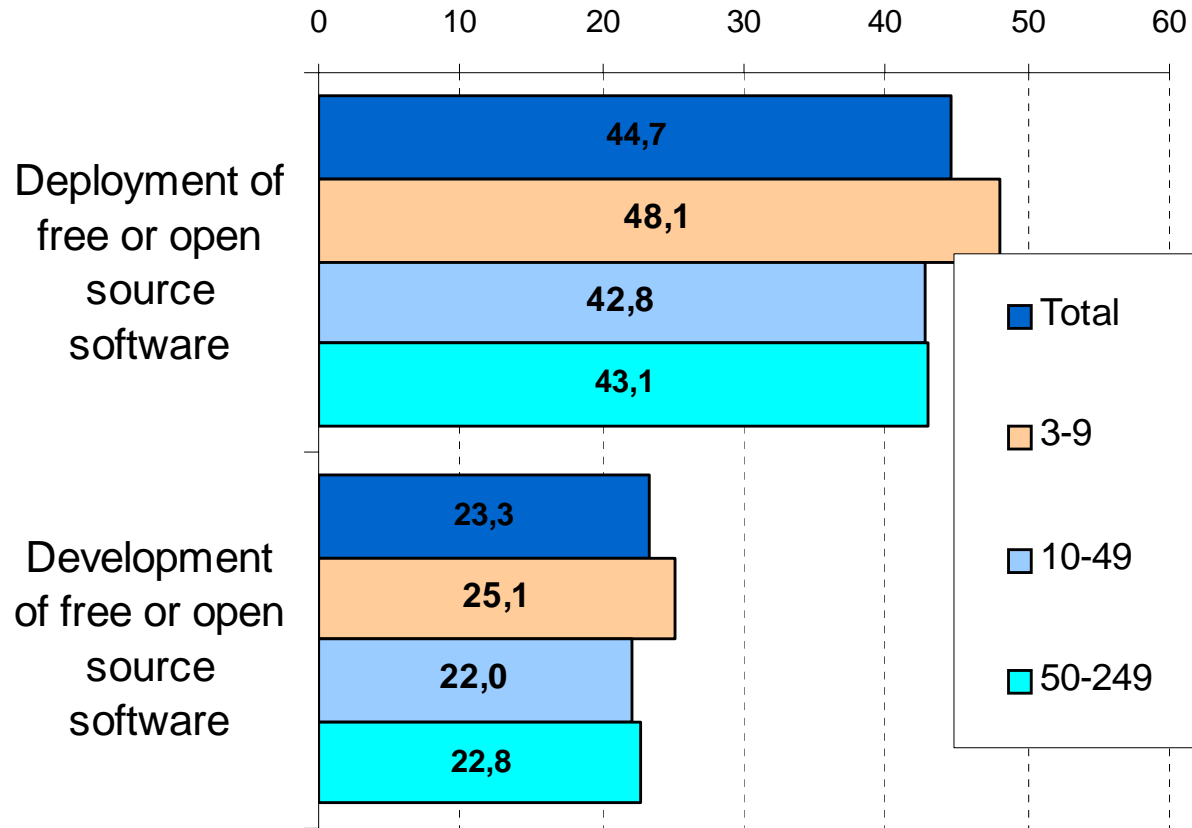


Base: ALL
N=683

Source: e-Business W@tch Survey "IPRs in ICT SMEs", August September 2007

... especially in smaller ICT SMEs

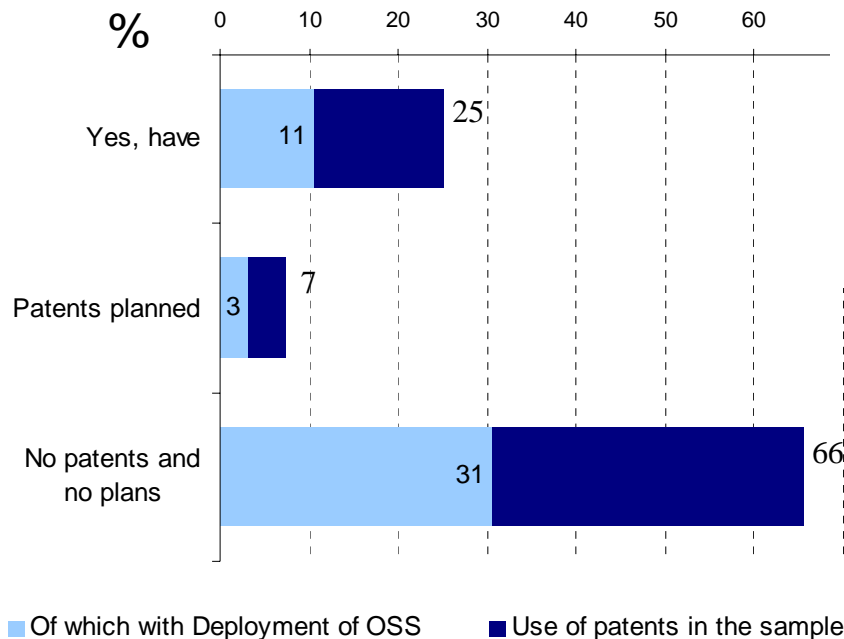
% of ICT SMEs in the Sample, by size



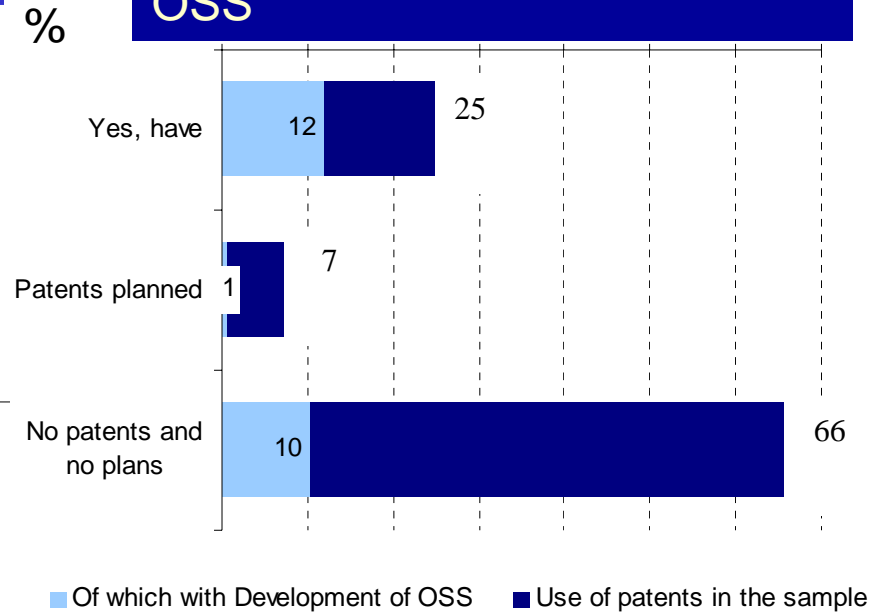
Base: ALL
N=683

Many ICT SMEs with Patents use also OSS

Patents and deployment of OSS



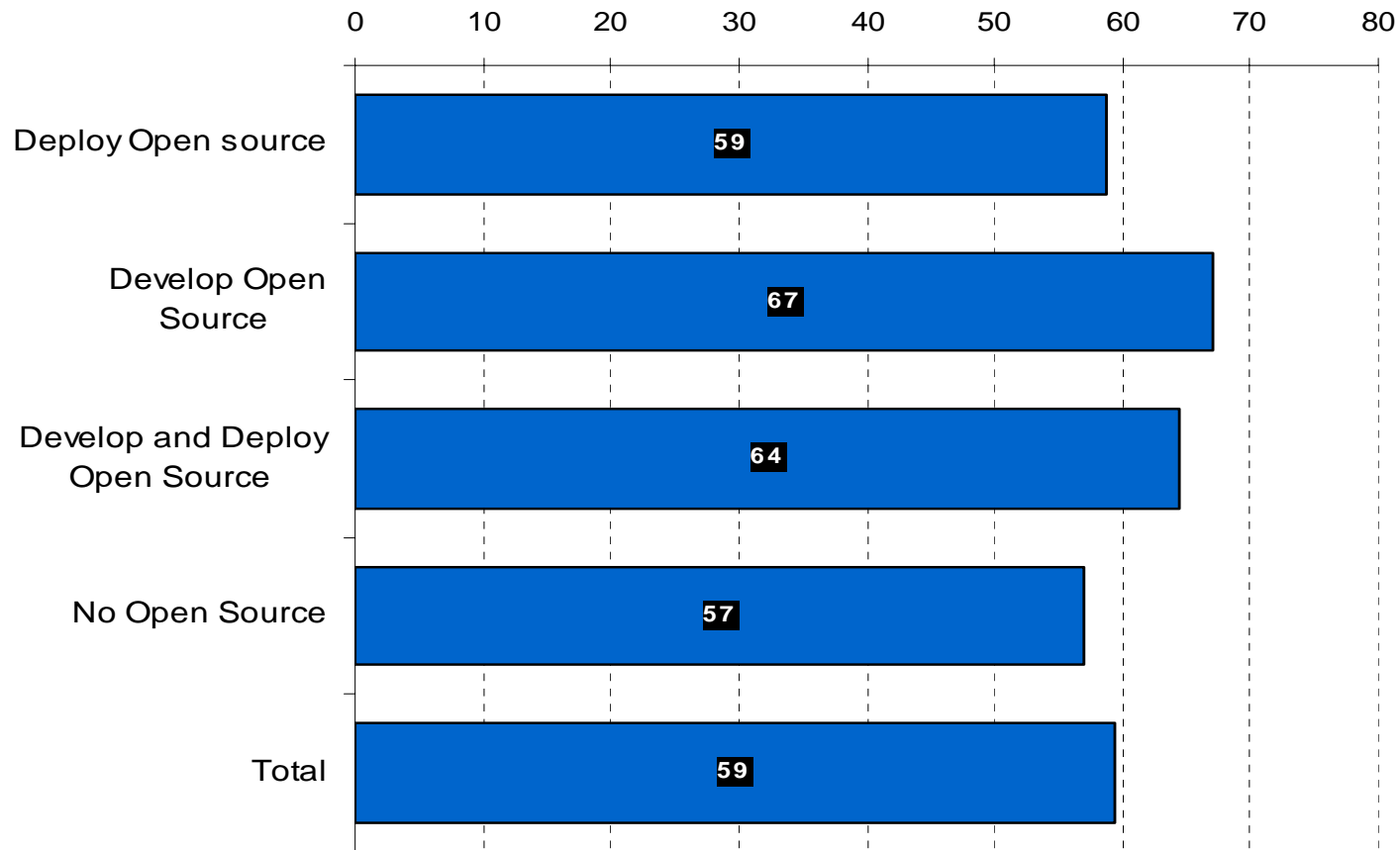
Patents and development of OSS



Base: (N=683) and firms deploying OSS (N=305) or developing OSS (N=159)

ICT SMEs developing OSS are more likely to grow

% of ICT SMEs with Turnover Increase, by type of OSS activity



Open Innovation: Open Source Software Business Models

- **OSS firms gain their revenues from a combination of licensing and services, so their revenues depend on IP-protected products**
- **IPR management is an issue also for these firms, because the licensing and copyright regime requires specific knowledge and skills**
- **Our case studies are small innovative firms considering software patents a weapon used by their larger competitors and a way to block innovation in their market (esp. a threat for open standards).**

IPR, Standardization and Interoperability - I

- **ICT SMEs live in a global digital “ecosystem” where innovation is a must, but is built upon extensive interaction and networking**
- **This environment is characterized by built-in conflicts, where IPR may and are used as weapons as well as tools**
- **In the software arena, the sequential nature of innovation and the need to build interoperable systems conflict with the monopolistic protection granted by patents.**

IPR, Standardization and Interoperability - II

- Even excluding “pure” supporters of the FLOSS movement, who contest patents in principle, several ICT SMEs agree that patents are often the tool of choice by established players to restrain competition
- The potential of abuse of patents by “patent trolls” is also worrying
- This market requires a delicate balancing act among the interests of all competitors.

Study Main Conclusions

- **ICT SMEs need the full range of IPR to respond to their main challenges**
- **The Adoption of IPR is increasing, but only a minority are Advanced Users**
- **ICT SMEs Use IPR for Competitive Advantage and Innovation**
- **The Use of IPR is correlated with Business performance**
- **IPR impact on Competitiveness is relevant, but depends on the business model**
- **The IPR system needs to adapt to evolving European ICT SMEs needs, particularly the patent system**

POLICY RECOMMENDATIONS

Policy Implications and Recommendations - I

- **Promote greater practical knowledge of the full range of IPR among ICT SMEs**
- **Analyse the implications for the IPR system of the IP-based Business Models and Innovation Networks**
- **Promote greater harmonization between Innovation policies, IPR policies, SME policies**

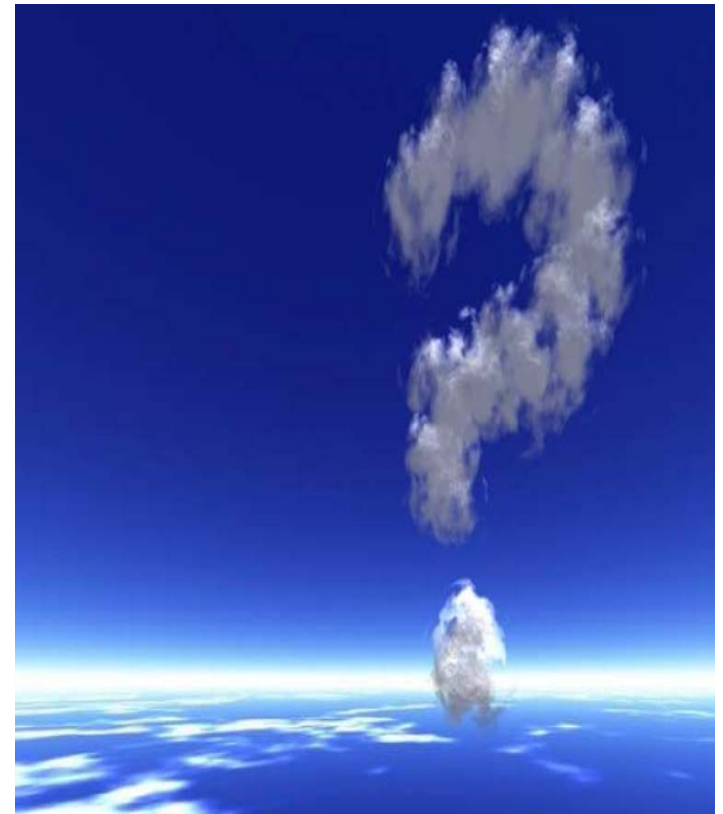
Policy Implications and Recommendations - II

- **Improve the Suitability of the IPR System to ICT SMEs Needs**
- **Enhance the utilization of patents**
- **Review ICT SMEs competitive issues in the software patents and standardisation-interoperability areas**

For more Information...

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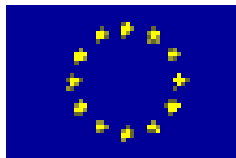


More information



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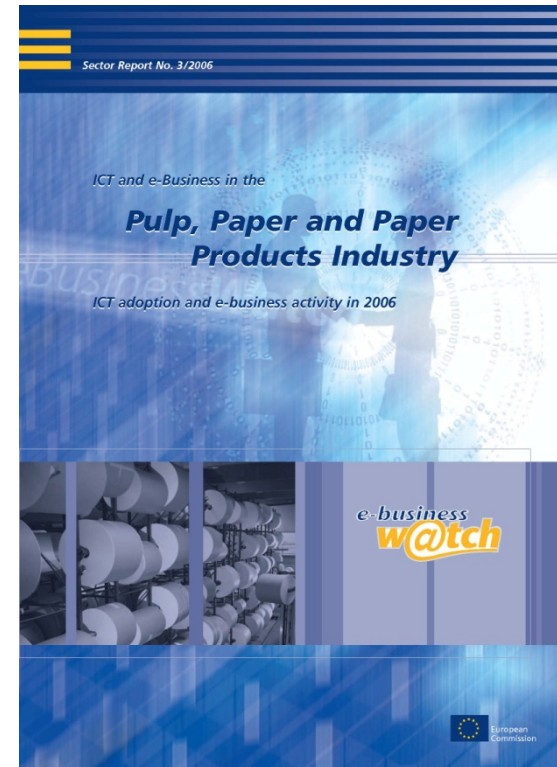


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