

# The effectiveness of patent exceptions

World Intellectual Property Organization  
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## Presentation outline

- I. Economic effects and trends
- II. Economics of patent exceptions
- III. Example Switzerland
- IV. Challenges (national capacities)



# **I. Economic Effects and Trends**

# The "social contract" implicit in the patent system

Reveal  
invention



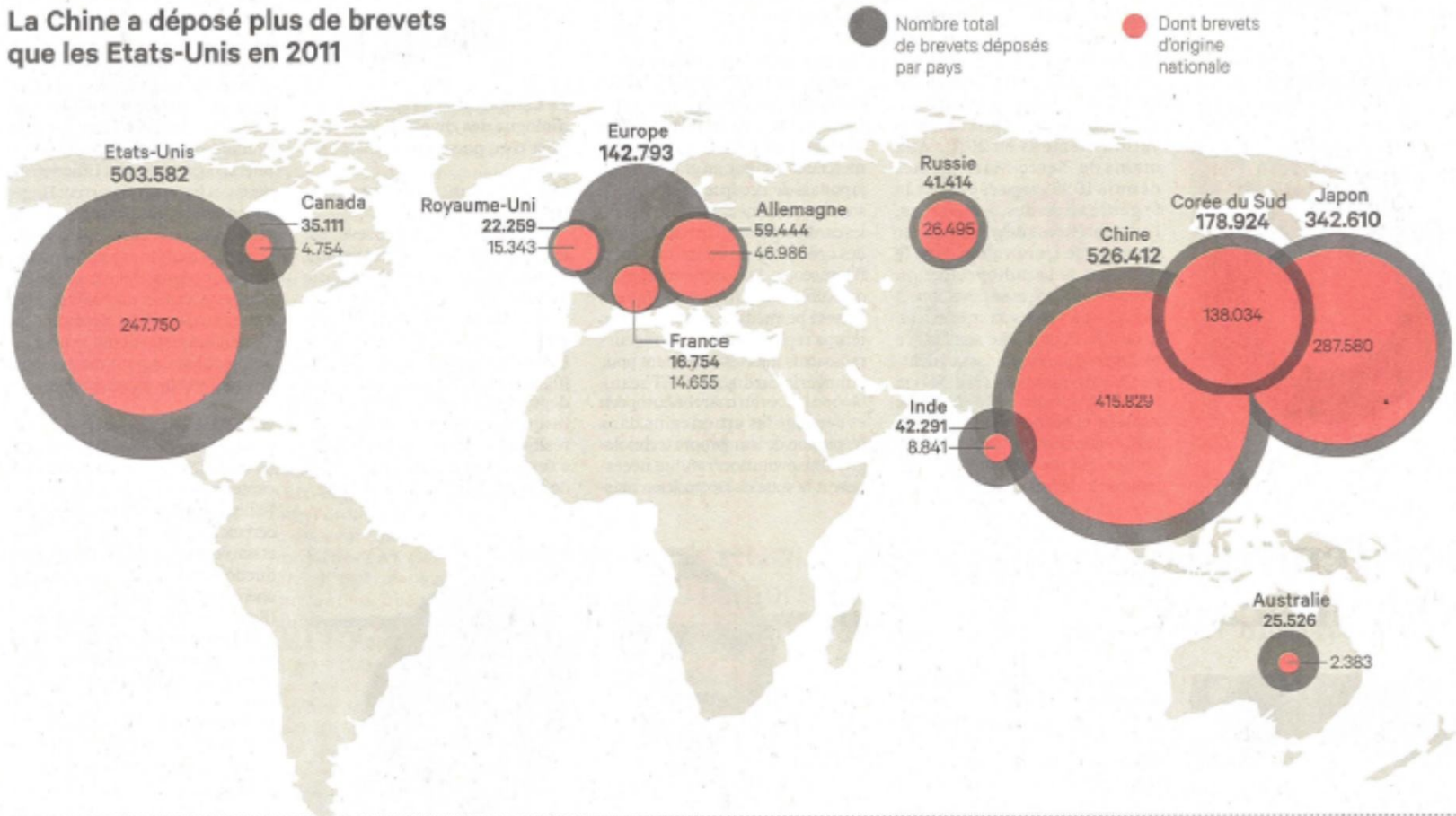
Get  
exclusivity



... so that others can learn from it  
and improve upon it!

# Patent Filings World Wide (Les Echos 11 avril 2013)

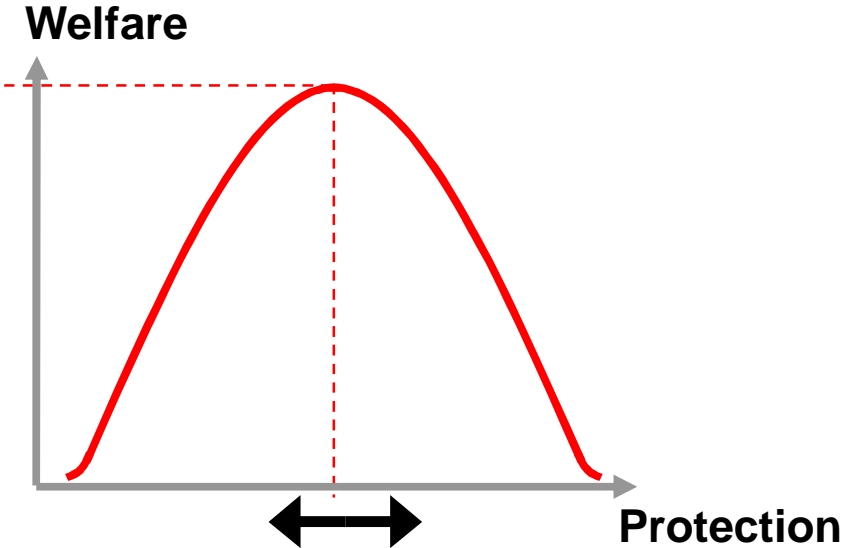
La Chine a déposé plus de brevets que les Etats-Unis en 2011



# Challenges for the patent system

- open, collaborative innovation asks for
  - easy access to patent system
  - timely, simple procedures
  - high presumption of validity of granted patents
- new business models focus on
  - branding
  - customer relation
  - first-mover-advantage
  - lock-in
  - combinations of open and proprietary models
- new technologies/innovation processes might demand
  - alternative forms of protection (license of right, shorter/longer patent terms, *sui generis* systems)
  - enlarged public domain: e.g. for basic research tools, interoperability standards

# Patents as a regulatory measure



Problem area? →

Too much protection?

Not enough protection?

→ Feasible measures

## **II. Economics of Patent Exceptions**



# **Need for patent exemptions because of:**

- **Limitation of upstream inventions?**
- **„Anti-commons“**
- **Patent thickets**
- **Royalty stacking**
- **Abusive monopoly position**
- **...**

# Findings OECD 2006

- No evidence of widespread problem in accessing patented inventions for research
- Existing concerns in Pharma, Biotech and in countries with high levels of litigation
- Limited information available on research use of patented inventions in OECD countries
- Scientific research unlikely to take place in patent-free zones
- Multidisciplinary research potentially increases litigation over research uses
- Uncertainty and international differences as regards scope of research exemptions increases litigation risk and may limit benefit from exemptions
- Balance between incentives for initial and follow-on inventors is greatly facilitated by granting 'high quality' patents

# Economic Analysis of Research Use Exemption

## Pros

- Facilitates follow-up research/inventions
- Improves inventing around
- Generates knowledge externalities
- Promotes innovation by enhancing return from new innovation (Nagaoka, Aoki, 2007)
- Positive effect on overall R&D activities (Heger, Jensen et. Al 2013)

## Cons

- Reduces return from old innovation
- Reduces incentive to (first) innovate
- Discourages efficient ex-ante contracting
- Reduces propensity to patent (Heger, Jensen et al. 2013) and may impede technological progress

# III. Example Switzerland

## Research and Patenting in Biotechnology: A survey in Switzerland

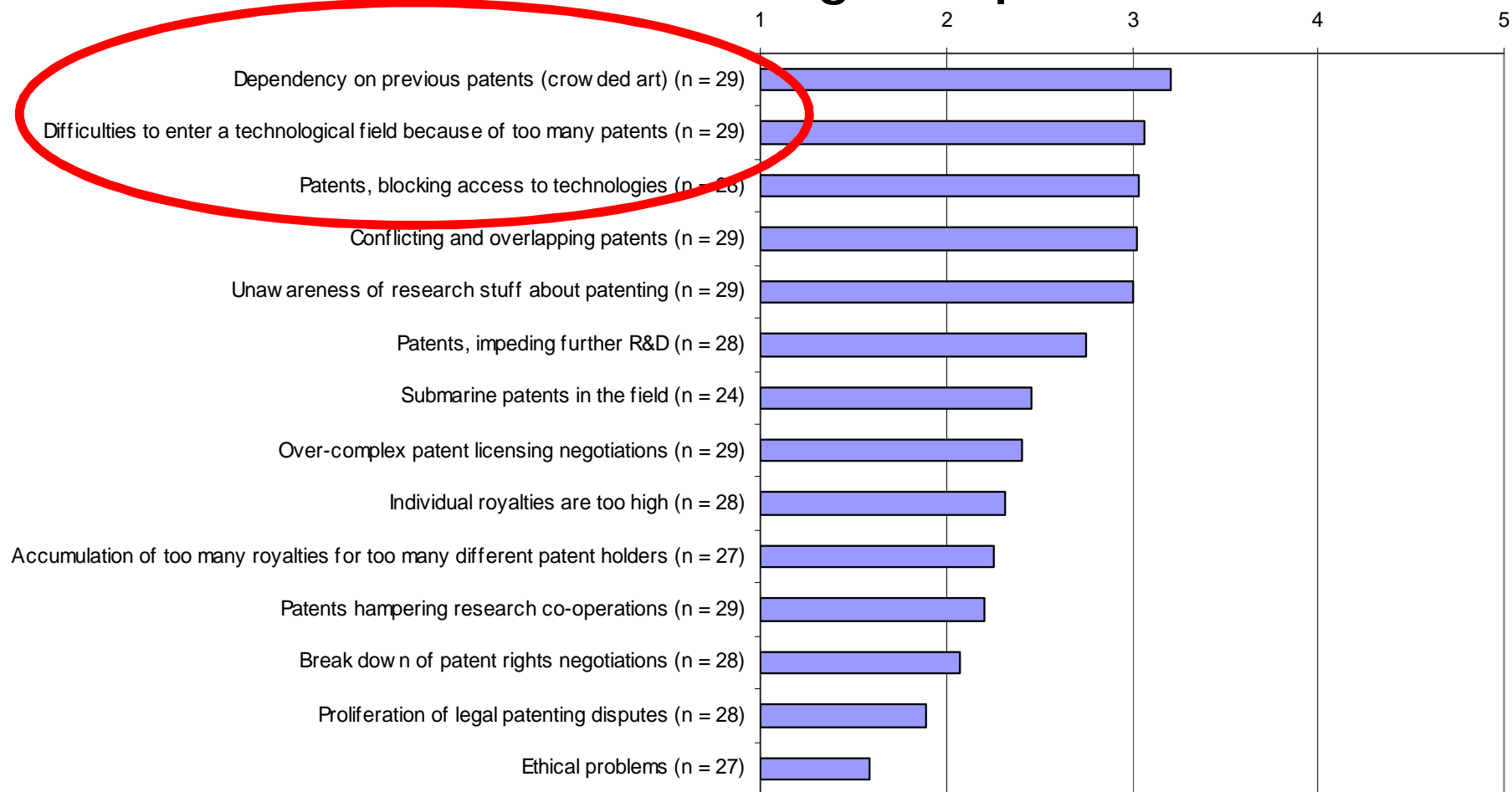
<http://www.who.int/intellectualproperty/events/Bern2.pdf>

### Summary Articles:

Thumm, N. (2005) 'Patents for genetic inventions: a tool to promote technological advance or a limitation to upstream inventions', *Technovation, The International Journal of Technological Innovation and Entrepreneurship*, Vol 25/12 pp. 1410-1417

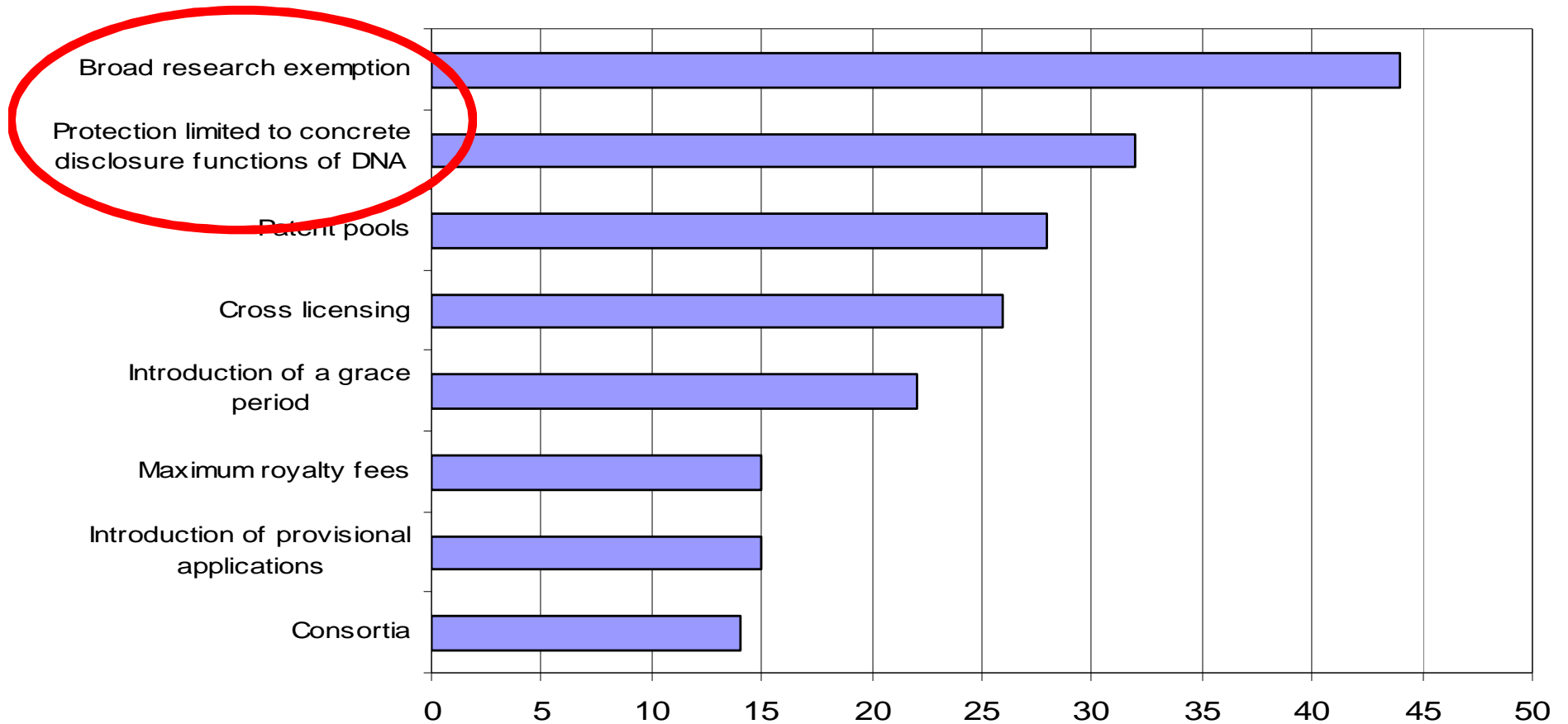
Thumm, N. 'A Statutory research exemption for Patents' in: *Healthy IPRs, a forward look at pharmaceutical intellectual property*, Stockholm Network (2007)

# Problems with gene patents



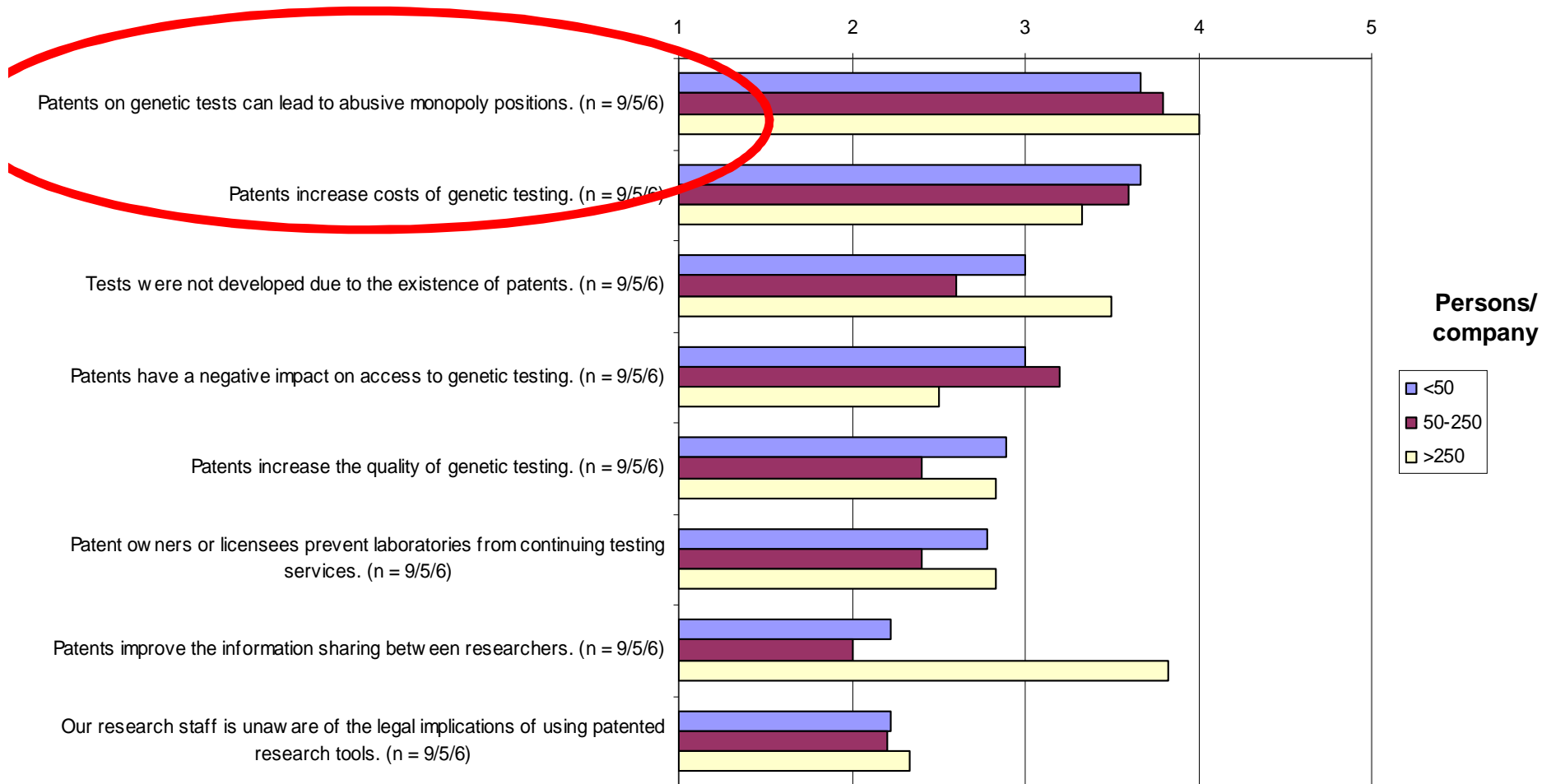
CH Survey: 8.2 Extent of Experience of Problems with DNA Patents, Fig. 34 (1=never, 5=very often)

# Gene patents: Proposed remedies



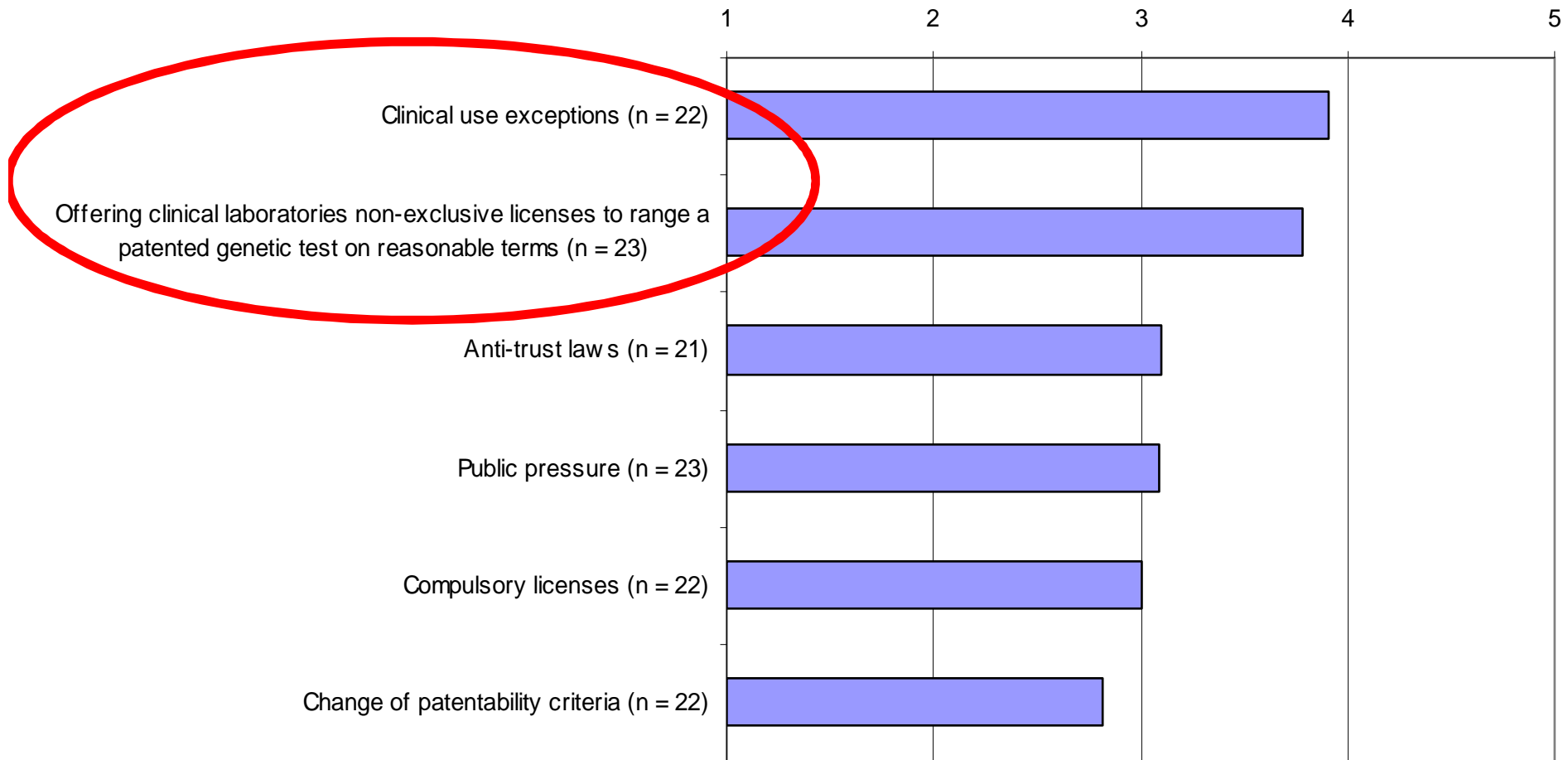
CH Survey: 8.2 Remedies, Fig. 35 (named as many times as effectively to ...)

# Problems with patents on genetic tests



CH Survey: 9.2 Genetic testing, Fig. 42 (1=very low, 5=very often)

# Patents on genetic tests: Proposed remedies



CH Survey: 9.2 Genetic testing, p. 60 (1=very low, 5=very often)



# Summary

- **Patents do matter in biotechnology!**
  - **Theoretical concerns are real!**
  - **But no break-down nor systematic abuse of the patent system**
  - **Problems with Patents on genetic tests**
  - **Possible Remedies:**
    - **broad research exemption**
    - **Limitation of the scope of protection (specific disclosed functions) for DNA patents**
    - **Single license, compulsory licensing**
- 
- **Specific targeted solutions**
  - **Combination of tools**

# Swiss Federal Act on Patents for Inventions (2012)

## **Art. 8c1**

### IV. Nucleotide sequences

The protection conferred by a claim to a nucleotide sequence that is derived from a naturally occurring sequence or partial sequence of a gene is limited to the sequence segments that perform the function specifically described in the patent.

## **Art. 91**

### G. Exceptions to effects of the patent

#### I. In general

1 The effects of the patent do not extend to:

a.

acts undertaken within the private sphere for non-commercial purposes;

b.

acts undertaken for research or experimental purposes in order to obtain knowledge about the subject-matter of the invention including its uses; in particular, any scientific research concerning the subject-matter of the invention is permitted;

c.

acts necessary for obtaining marketing authorisation for a medicinal product in Switzerland or in countries with equivalent medicinal product control;

d.

the use of the invention for teaching purposes at educational institutions;

e.

the use of biological material for the purpose of the production or the discovery and development of a plant variety;

f.

biological material that is obtained in the field of agriculture due to chance or is technically unavoidable.

## **IV. Challenges (National Capacities)**

# What could regulators and Patent Offices do?

## **Identify the problem** (e.g. patent thickets)

- patent thickets not a distinct problem themselves (EPO 2013)
- rather is it low quality patents that entail a social cost
- mostly occur in technological areas with significant market potential

## **Reduce complexity (raise legal certainty)**

- improvements of IT systems generally
- Cooperative Patent Classification (CPC)
- EPO Google on machine translations (e.g. EN to Chinese)

## **Harmonize and reduce costs**

- avoid forum shopping
- avoid conflicting judgements

# What could regulators and public institutions do?

## Patent quality:

'A high quality patent (a) satisfies the legal patentability requirements at a given patent office, (b) it has been granted, and (c) is likely to withstand invalidity proceedings in court or before an administrative body' (EPO 2013)

## Improve by:

- prior art search and disclosure
- abstracts/titles
- non-patent literature
- ownership re-assignments
- translations
- reporting of prior art by applicants (prior art repository)
- opposition and re-examination
- international harmonization and cooperation
- code of conduct
- ...

**THANK YOU FOR YOUR ATTENTION**

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