



# OECD Triadic Patent Families

*OECD methodology: an overview*

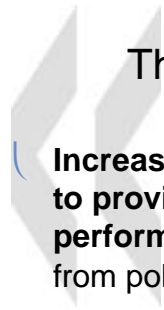
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**WIPO – OECD WORKSHOP ON STATISTICS IN THE PATENT FIELD**  
Geneva, September 18 and 19, 2003



OECD Triadic Patent Families



## The OECD and Patents Statistics

**Increasing demand for patent statistics  
to provide a measure of technology  
performance across countries:**  
from policy makers, analysts, researchers.

**Develop a statistical infrastructure for patents  
(databases and methodologies) :**

- high quality indicators
- with an improved international comparability

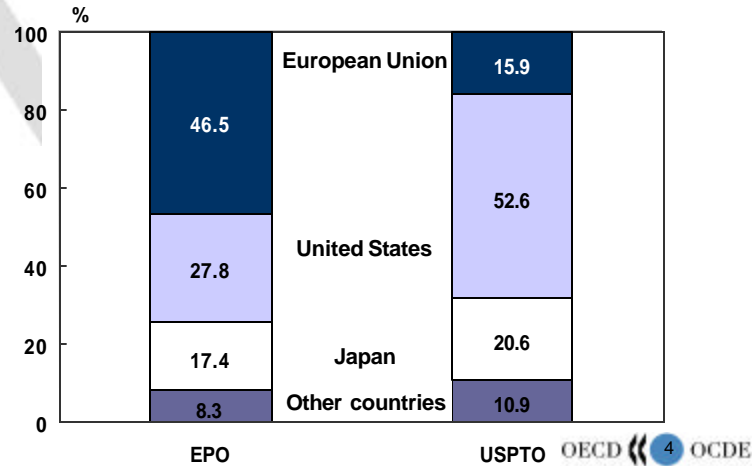


## Patents Statistics

- Most frequently published patent statistics refer to counts of patents applications to a single PTO
- ↳ **Weaknesses in providing internationally comparable indicators of technology performance:**
  - Home advantage bias
  - No filters on patents' values

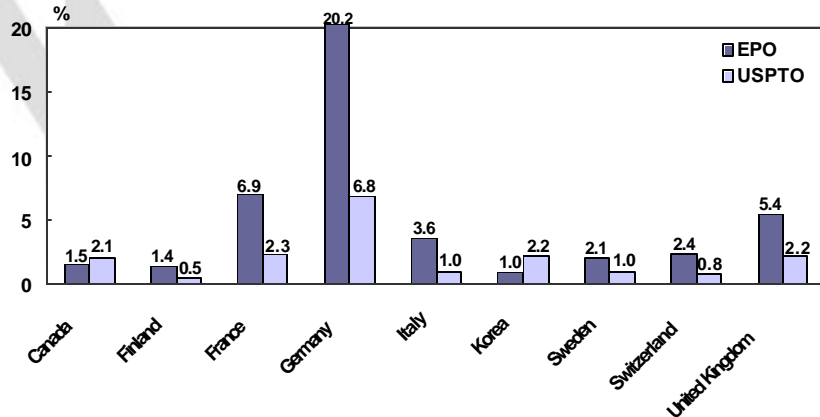
## Patents Indicators based on PTOs

Patent applications to the EPO / Patent grants at the USPTO  
Country shares - residence of the inventors, priority year 1999



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## Patent Families Indicators

- A patent family is defined as a set of patents - taken in various countries - that protect the same invention
- ( **Patents are filed at different patent offices:**
  - No more **home advantage**,  
*international comparability of indicators is improved*
  - **High value** patents selected,  
costs-benefits to file for protection in several PTOs

## Patent Family: country coverage

- OECD definition of patent families focus on the triad **US – Japan – Europe:**

### Coverage of patent applications in Europe?

- Filings at the **EPO**:  
*More than 80% of patent applications and grants designate at least Germany, France and the United Kingdom altogether.*
- Filings at **national PTOs in Europe**:  
*Priorities at any European PTO (eg FR) extended to applications to JPO & USPTO but not to any other PTO in Europe included in the families.*

## Patent Family: country coverage

- 3 alternative definitions tested:
  - **USPTO + JPO + EPO**  
*resulting indicators show more balanced country shares: bias of regular patent indicators suppressed (home advantage).*
  - **USPTO + JPO + (EPO or Germany and France and UK)**  
*no significant changes compared to definition (1), especially in the later years where less than 2% of total patent families are added by DE-FR-UK condition*
  - **USPTO + JPO + (EPO or Germany or France or UK)**  
*introduction of country specificities: +15% difference with definition (1) for Germany, 30% more families for Japan.*

### Definition (1) covers almost all of the patent families in the triad US-Japan-Europe

## Patent Family: protect a same invention

- OECD patent families are built by tracking priority applications that have led to subsequent filings at USPTO, EPO and JPO
- Depending on the PTO or on the applicant's strategy:
  - a single priority can lead to several patents in a same office;
  - a single patent can be based on several priority applications.

Average	Number of priorities per patent			Number of patents with same priority		
	1991	1994	1997	1991	1994	1997
<b>USPTO</b>	1.8	1.7	1.5	1.3	1.3	1.2
<b>EPO</b>	1.5	1.7	1.8	1.1	1.1	1.1
<b>JPO</b>	1.1	1.1	1.2	1.0	1.0	1.0

## Patent Family: protect a same invention

U1-{P1,P2}  
 U2-{P2,P3}  
 J1-{P1}  
 J2-{P2}  
 J3-{P3}  
 E1-{P1,P2}  
 E2-{P2}  
 E3-{P3}

a) Direct link only (3 families):

P1-[U1,J1,E1]  
 P2-[U1,U2,J2,E1,E2]  
 P3-[U2,J3,E3]

b) Direct or Indirect links (1 family):

{P1,P2,P3}-[U1,U2,J1,J2,J3,E1,E2,E3]

- **Most frequent combinations of triad patents in families -1998:**

- 1USPTO & 1EPO & 1JPO : 78 % of (a) -- 73 % (b)
- 2USPTO & 1EPO & 1JPO : 13 % of (a) -- 12 % (b)
- 1USPTO & 1EPO & 2JPO : 1 % of (a) -- 5 % (b)
- 2USPTO & 2EPO & 2JPO : 2 % of (a) -- 3 % (b)

- **Average number of triad patents in families (a) and (b) - 1998**

1.1 EPO patent, 1.3 USPTO patent, 1.1 JPO patent

## Patent Family: protect a same invention

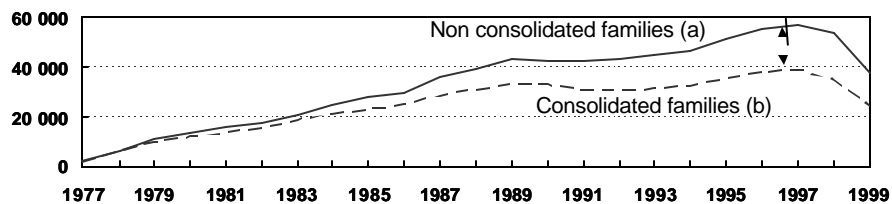
- **Consolidate families** - (*include indirect links*): neutralise patenting behaviour influenced by rules and regulations of a given PTO

Share of countries in triadic patent families, 1997		
	(a) <i>Non consolidated</i>	(b) <i>Consolidated</i>
Germany	14.7 %	13.2 %
Japan	28.2 %	26.6 %
United Kingdom	4.7 %	3.7 %
United States	30.2 %	35.2 %
European union	34.3 %	31.4 %

**OECD Patent family** : set of patents taken in various countries that share one or more priorities

## Processing Triadic Patent Families

- List all priority applications;
- Identify priorities with at least one subsequent patent at the EPO, USPTO and JPO;
- Regroup priorities (*consolidation*) when
  - more than one priority lead to one EPO patent application;
  - more than one priority lead to one USPTO grant;
  - more than one priority lead to one JPO application.

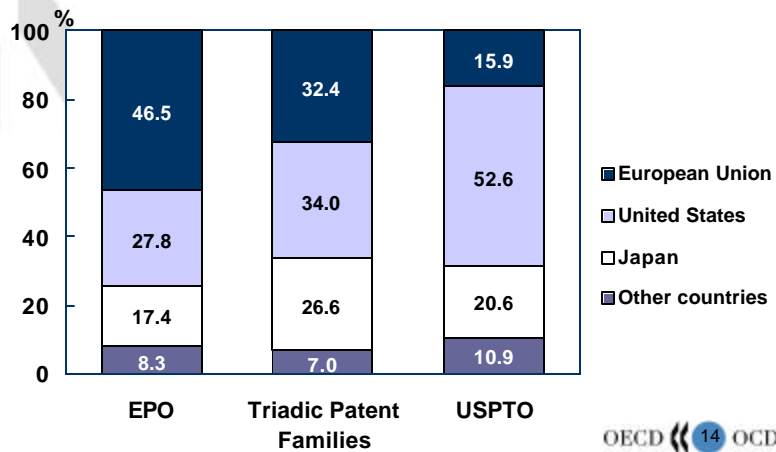


## OECD Triadic Patent Families

- The consolidation process considers any linkage between patents:
    - reduced volume of patent families,
    - national specificity suppressed
- OECD Triadic patent families, after consolidation, provide an **improved measure** of the innovative performance and technological change at an **international level**.

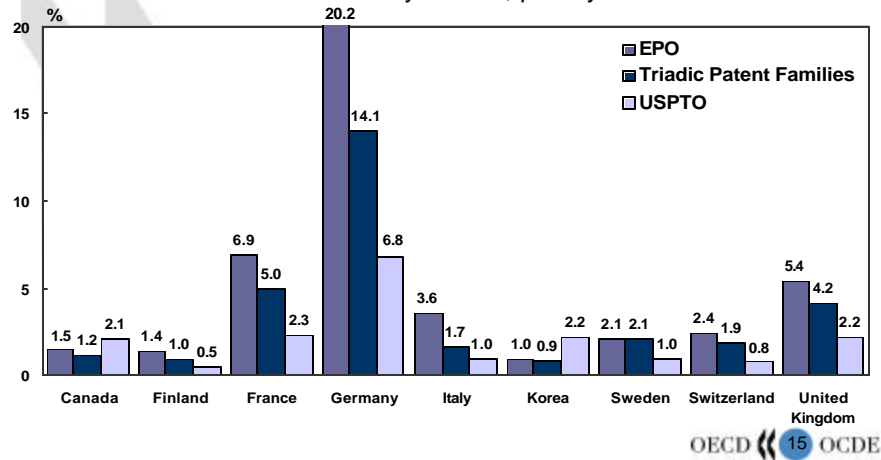
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## Conclusion

The OECD Triadic Patent Families are defined as a set of patents taken at the EPO, JPO and USPTO that share one or more priorities.

- Provide an improved internationally comparable indicator for OECD requirements (measuring innovative performance of countries).

**Remaining weaknesses:**

- **Asymmetric information** in patents for the triad : EPO and JPO applications but USPTO grants (*USPTO applications published as of 2001*)
- **Timeliness:** according to the earliest priority date, data almost complete up to 1997, nowcasts conducted on series up to 1999