

INNOVATION STRATEGY IN R&D PROJECTS: A STEP BY STEP GUIDE

AVAILABLE AT:

<http://health2market.eu/results/step-by-step-guide>

APPENDIX 1: INDICATIVE TEMPLATE FOR PATENT ANALYSIS

DISCLAIMER: Health-2-Market project has been financed by the European Commission under the grant agreement N° 305532. This document reflects only the view of the author(s) and the European Commission cannot be held responsible for any use which may be made of the information contained herein. This document is provided for informational purpose only and “as is”, with no guarantees or warranties whatsoever, including any warranty of merchantability, non-infringement, fitness for any particular purpose, or any other warranty with respect to any information, result, proposal, specification or sample contained or referred to herein. Any liability, including liability for infringement of any proprietary rights, regarding the use of this document or any information contained herein is disclaimed. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by or in connection with this document. This document is subject to change without notice. Copyright 2015 by Health-2-Market consortium.

Why should I patent my innovation?

PATENTS

A patent is a set of exclusive rights granted by a sovereign state to an inventor or assignee for a limited period of time in exchange for detailed public disclosure of an invention. Patents confer the right to prevent third parties from making, using or selling the innovation without their owners' consent. If you do not protect your intellectual property, others will be able to use your innovation and potentially profit from it.

WHY SHOULD I PATENT MY INNOVATION?



Whether it is a scientific discovery, new process, product design, invention or apparatus, your innovation may be intellectual property (IP) that has economic value. Intellectual property can include the innovations and other creative expressions of your ideas that you created. Therefore, you can and should pursue legal protection of your inventions by filing a patent.

Patents can be extremely powerful business tools and are necessary for any commercialization endeavor. Patents normally have a lifetime of 20 years and during this time the intellectual property is the sole property of the owner.

How can I identify and protect my IP?

To figure out whether your new invention, product or process is unique and qualifies for patent protection, begin by asking yourself these simple questions:

- ✓ Is it novel or unique?
- ✓ Is it non-obvious?
- ✓ Is it industrially applicable?

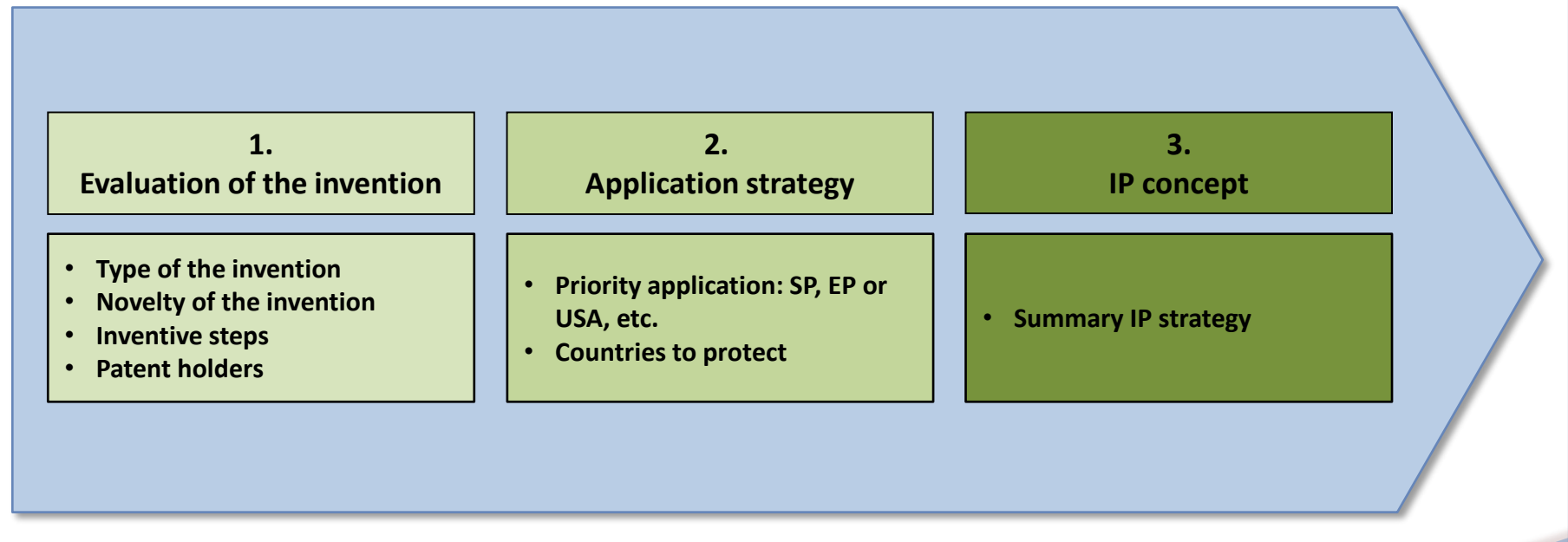
If your initial answer to all three questions is yes, there is a good chance that your invention is patentable. The next step is to evaluate your assumptions by conducting a patent search and comparing your results to the state of the art.

Approach for the patent analysis

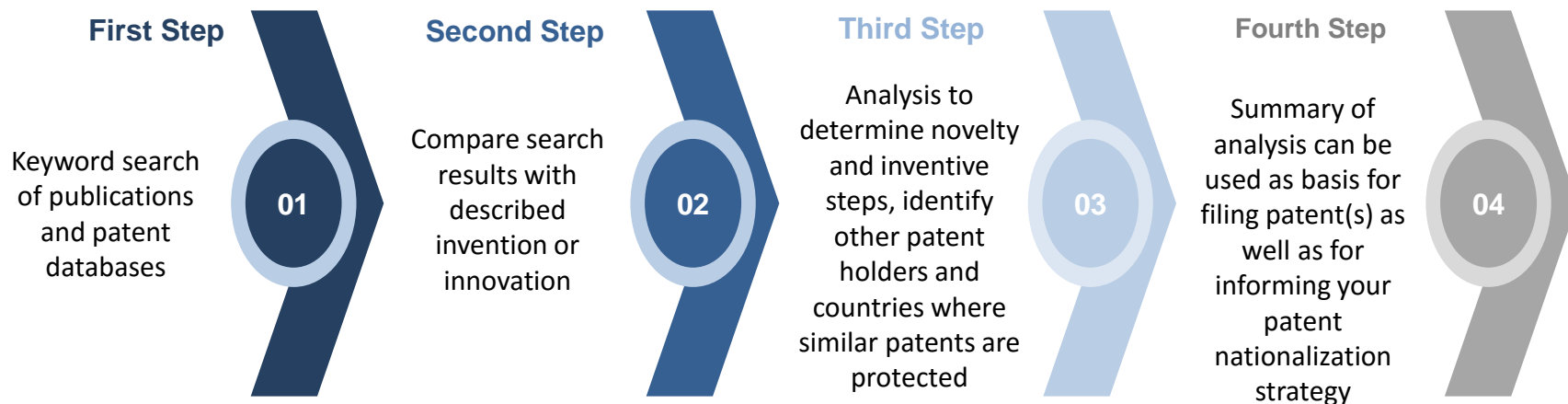
AIM

Examination of the patentability of _____

APPROACH



IP Protection Process Overview



Evaluation of the invention

First Step: Keyword Search

Keyword Search

Search in patent databases and publications for key words related to your innovation.

Documentation and keywords may have been prepared for other uses that can be valuable in patent search and analysis. For example, journal articles, papers and theses, invention disclosures, grant applications, and research notes could all be useful.

Where to search for patent analysis:

- ✓ USPTO databases – patft.uspto.gov/
- ✓ Google Patents – www.google.com/patents
- ✓ Espacenet – ep.espacenet.com/
- ✓ Patentscope.wipo – <https://patentscope.wipo.int>
- ✓ Pubmed – <http://www.ncbi.nlm.nih.gov/pubmed>
- ✓ World Intellectual Property Organization - <http://www.wipo.int/patentscope/search/en>
- ✓ Or another search engine

Evaluation of the invention

First Step: Keyword Search Results

COMPILE AND TABULATE SEARCH RESULTS

You can compile your search results in a tabulated spreadsheet. Most patent search databases will allow you to export your search results. We recommend to export such information as:

- title of patent,
- publication number,
- publication date,
- priority date,
- inventor,
- applicant,
- patent type,
- and protected country or countries.

This will not only organize your search results for future reference but more importantly, compare and analyse your patent search results.

Evaluation of the invention

First Step: Keyword Search

SEMANTICAL SIMILAR PATENTS

Title	Publication number	Pub date	Inventor	Applicant	IPC	Priorization date
PSORIASIS DIAGNOSTICS AND THERAPEUTICS	WO2004046380 (A1)	2004-06-03	CORK MICHAEL J [GB] WARD SIMON J [GB] TAZI-AHNINI RACHID [GB]	MOLECULAR SKINCARE LTD [GB] CORK MICHAEL J [GB] WARD SIMON J [GB] TAZI-AHNINI RACHID [GB]	C12Q1/6883 A61K39/0008 A61K39/092 C07K16/18	20031119
Raman assay-based High Throughput multiplex drug screening apparatus	KR20120132668 (A)	2012-12-07				20120529
TECHNIQUES FOR PURPOSING A NEW COMPOUND AND FOR REPURPOSING A DRUG	WO2009027843 (A2) ; WO2009027843 (A3)	2009-03-05	ZOREF TALI EILAM [IL] AGUR ZVIA [IL]	OPTIMATA LTD [IL] ZOREF TALI EILAM [IL] AGUR ZVIA [IL]	G06F19/704 G06F19/3437 G06F19/383	20080519
CANCER DIAGNOSTICS, THERAPEUTICS, AND DRUG DISCOVERY ASSOCIATED WITH MACROPINOCYTOSIS	US2014057905 (A1)	2014-02-27	BAR-SAGI DAFNA [US] COMMISSO COSIMO [US] SOYDANER-AZELOGLU RENGIN G [US]	BAR-SAGI DAFNA [US] COMMISSO COSIMO [US] SOYDANER-AZELOGLU RENGIN G [US] UNIV NEW YORK [US]	A61K31/192 A61K31/352 A61K31/366 A61K31/407 A61K31/4178 A61K31/435 A61K31/4985	20120402
Method for assessing acute toxicity of medicament by using model animal zebrafish fries	CN103301479 (A)	2013-09-18	HE MINGFANG GAO XIAOPING SHE JINXIONG	UNIV NANJING	A61K49/00	20130507

Evaluation of the invention

First Step: Keyword Search

EXPLANATION OF INTERNATIONAL PATENT CLASSIFICATION (IPC)

The International Patent Classification (IPC) provides for a hierarchical system of language independent symbols for the classification of patents and utility models according to the different areas of technology to which they pertain.

IPC	Explanation of the IPC		
G01N33/50	Investigating or analysing biological material by chemical analysis		
G	01	N	33/50
Section – 1 st level G PHYSICS	Class – 2 nd level	Subclass – 3 rd level	Subgroup - lower level
Group			
<p>G01N33/50 Investigating or analysing biological material by chemical analysis Definition statement <i>This group covers:</i></p> <ul style="list-style-type: none"> • Chemical analysis of biological material, e.g blood (in vitro), urine. • Testing involving biospecific ligand binding methods. • Use of compounds or compositions for colorimetric, spectrophotometric or fluorometric investigation, e.g. use of reagent paper. • Immunological testing, including immunoassay or materials therefor. 			

Patent Classification

Patent attorneys provide expertise and strategic guidance on what the best IPC is to file under based on:

- Invention information
- Categories of subject matter
- Additional information

Source: WIPO, http://web2.wipo.int/ipc-ief/ief-projects/d009/d009-a21_eprp.pdf

Evaluation of the invention

Second Step: Compare Search Results

STRUCTURE OF ANALYSIS

Keyword search for publications and patents

Comparison with described invention

Analysis of novelty and inventive steps, countries, patent holders

Summary of analysis

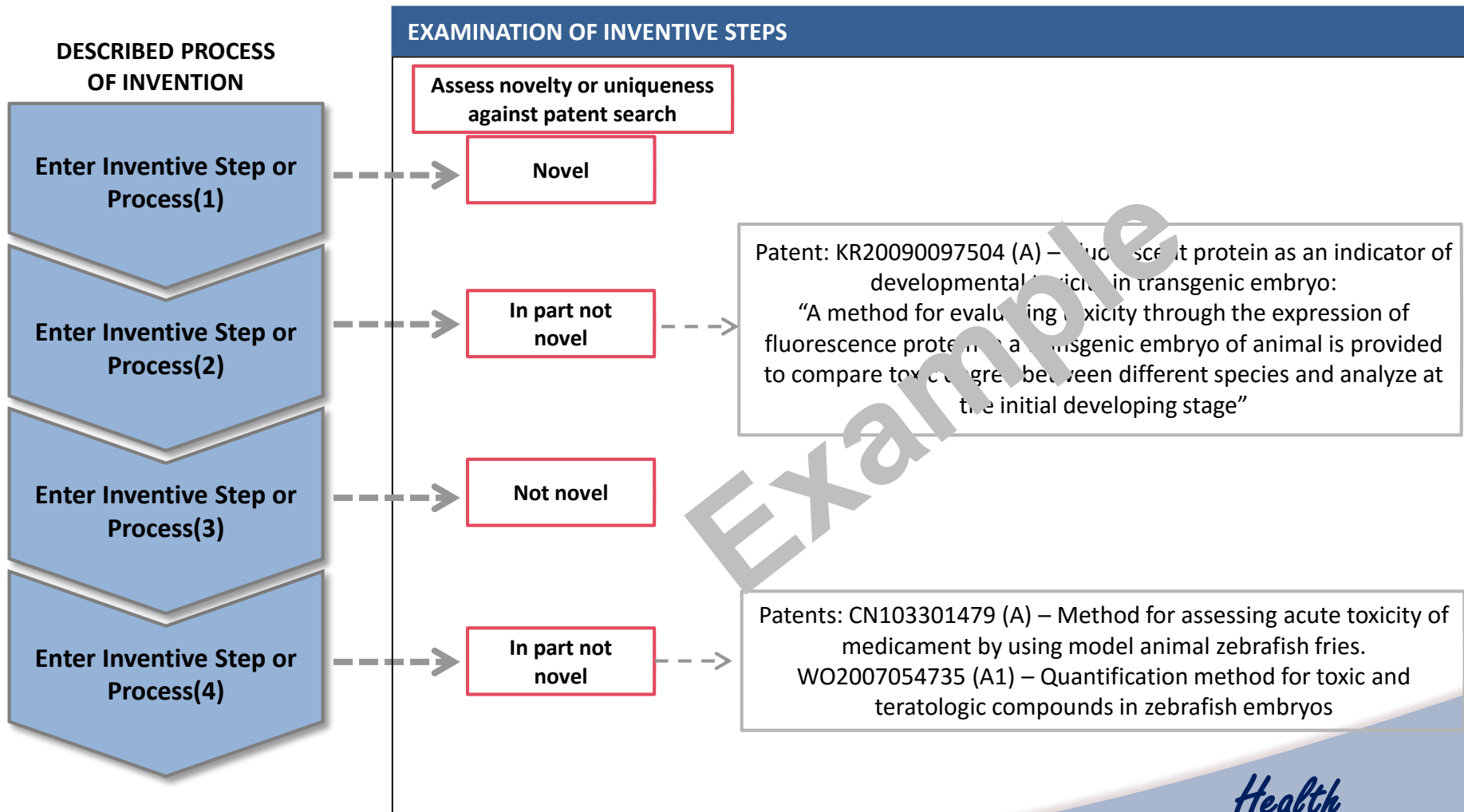
ASSUMPTIONS & BACKGROUND INFORMATION

- ✓ Used patent database/software: espacenet, patentscope.wipo
- ✓ Used publication database: pubmed
- ✓ Used keywords: _____
- ✓ Total number of analysed patents: _____

IPC	Explanation of the IPC	Frequency
G01N33/50	Investigating or analysing biological material by chemical analysis	28%
C12Q1/68	Involving nucleic acids	21%
C12N5/071	Vertebrate cells or tissues, e.g. human cells or tissues	21%
C12N5/10	Cells modified by introduction of foreign genetic material	15%
G01N33/15	Medicinal preparations	13%
A61K35/12	Materials from mammals or birds	11%
A61P17/02	For treating wounds, ulcers, burns, scars, keloids, or the like	11%
A61K38/00	Medicinal preparations containing peptides	9%
A61K38/18	Growth factors, growth related factors	9%
C12N15/18	Growth hormones	9%
C12N1/21	Modified by introduction of foreign genetic material	9%

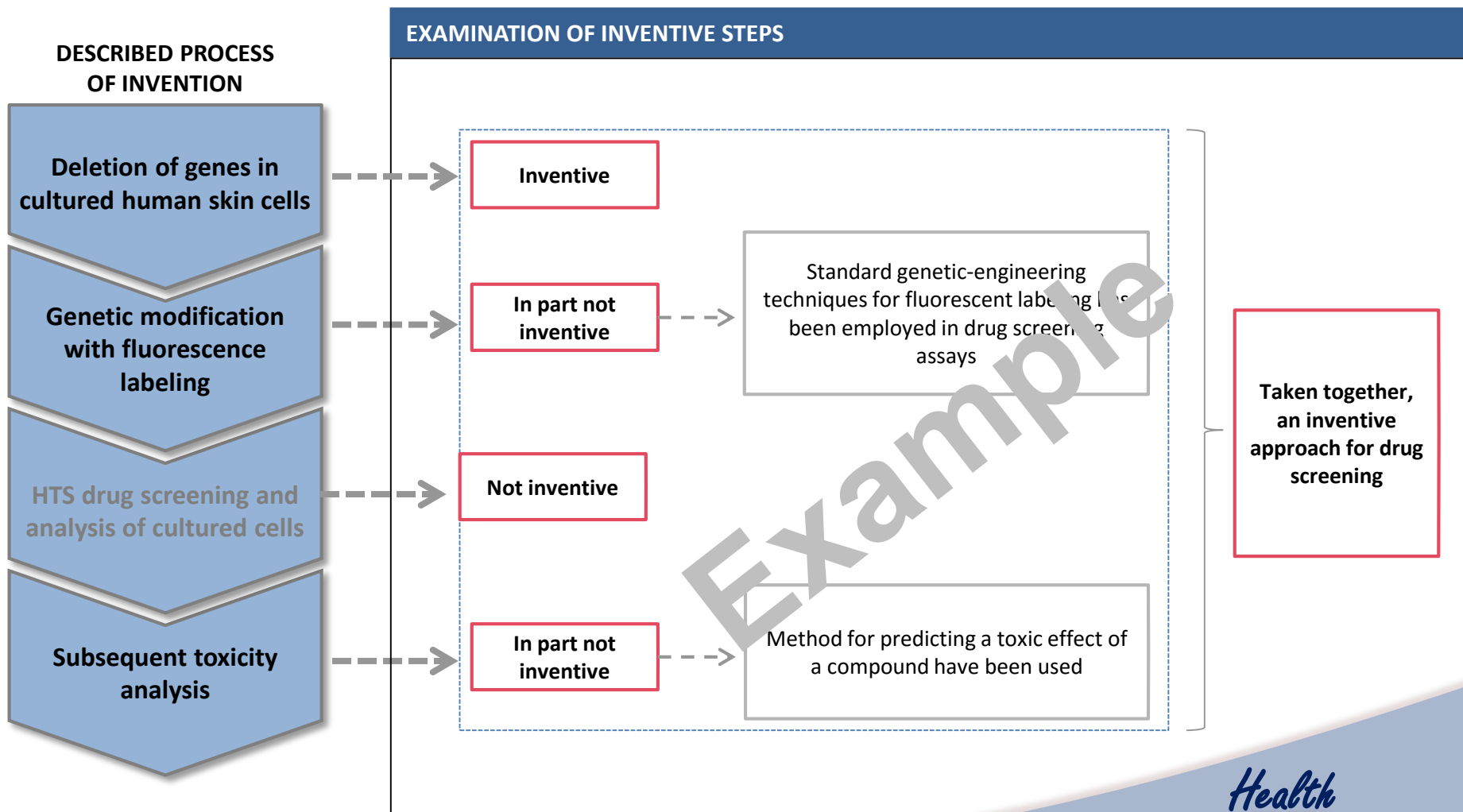
Evaluation of the invention

Second Step: Compare Search Results



Evaluation of the invention

Second Step: Compare Search Results



Evaluation of the invention

Third Step: Identify other patent holders

CORPORATIONS AND INSTITUTIONS WITH SIMILAR PATENTS

Patent holder	# Patents
UNIV NEW YORK [US]	5
PATENTS FILED BY INDIVIDUALS	5
BIOALTERNATIVES SAS [FR]	4
JAPAN SCIENCE & TECH AGENCY [JP]	4
UNIV ANGERS [FR]	4
UNIV POITIERS [FR]	4
STRATATECH CORP [US]	3
DEUTSCHES KREBSFORSCH [DE]	2
SEOUL NAT UNIV IND FOUNDATION [KR]	2
AMGEN INC [US]	1
AMOREPACIFIC CORP [KR]	1
ELFAMED INC [US]	1
ESOTERIX GENETIC LAB LLC [US]	1
HUMAN GENOME SCIENCES INC [US]*	1
MASSACHUSETTS INST TECHNOLOGY	1
MERCK [US]	1
MOLECULAR SKINCARE LTD [GB]**	1
OPTIMATA LTD [IL]	1
PUSAN NAT UNIV IND COOP FOUND [KR]	1
STRATECH CORP [US]	1
UNIV CALIFORNIA [US]	1
UNIV CHINA PHARMA [CN]	1

Patent holder	# Patents
UNIV EAST CHINA SCIENCE & TECH	1
UNIV NANJING	1
UNIV NEW YORK STATE RES FOUND [US]	1
UNIV NORTH TEXAS [US]	1
UNIV SEOUL INDUSTRY COOP FOUND [KR]	1
UNIV WAKE FOREST HEALTH [US]	1
UNIV ZHEJIANG	1
VASTOX Ltd[GB]***	1

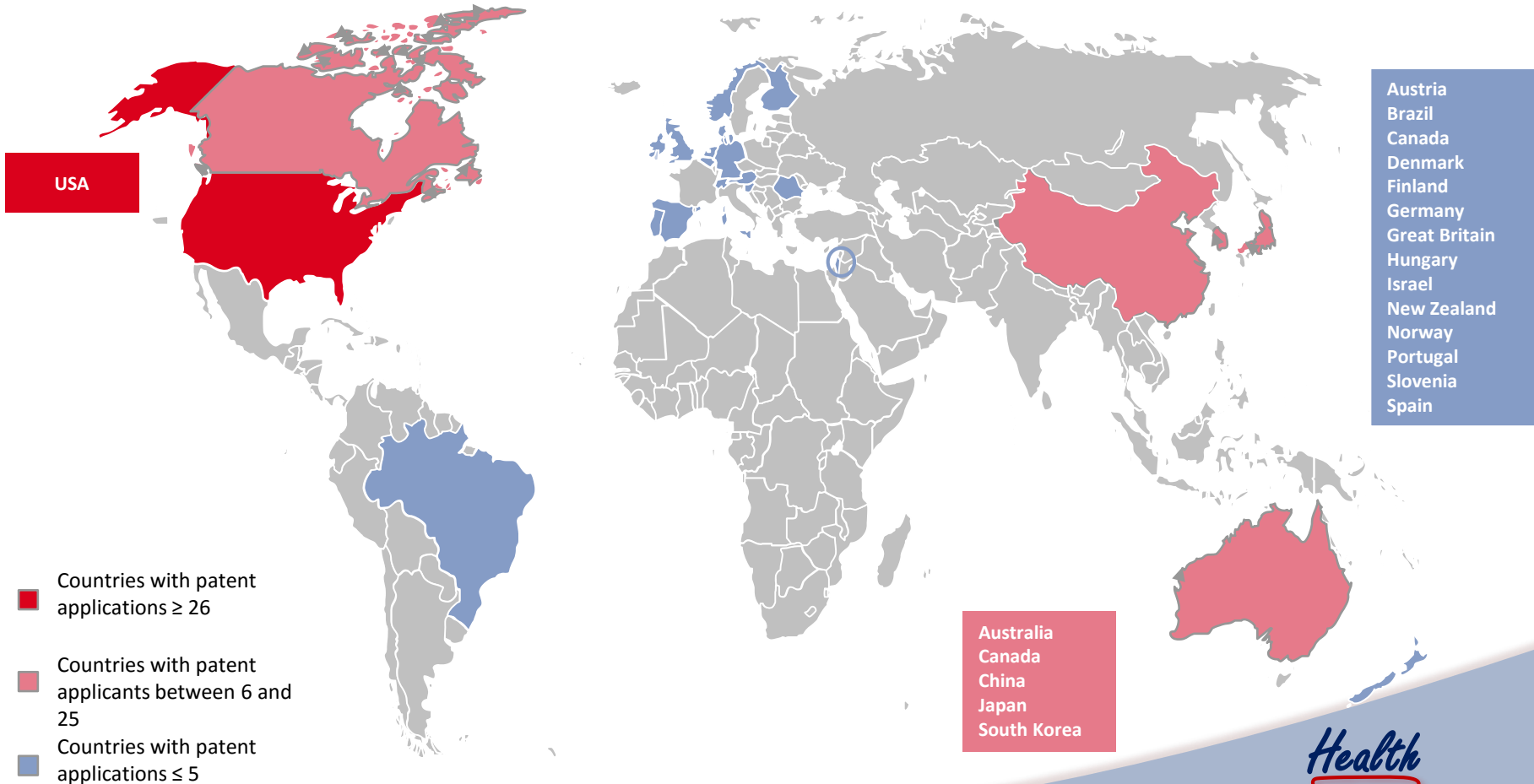
*now GlaxoSmithKline (GKS), **now York Pharma Plc, ***now Summit Plc

- 54 related patents, **most from universities/ single applicants**, may indicate an interesting field of invention for commercialization
- Indicates a field mostly driven by academic research
- Companies within the sector of drug development focusing on skin therapeutics (in blue) may be potential business clients or partners

Evaluation of the invention

Third Step: Identify countries where similar patents are protected

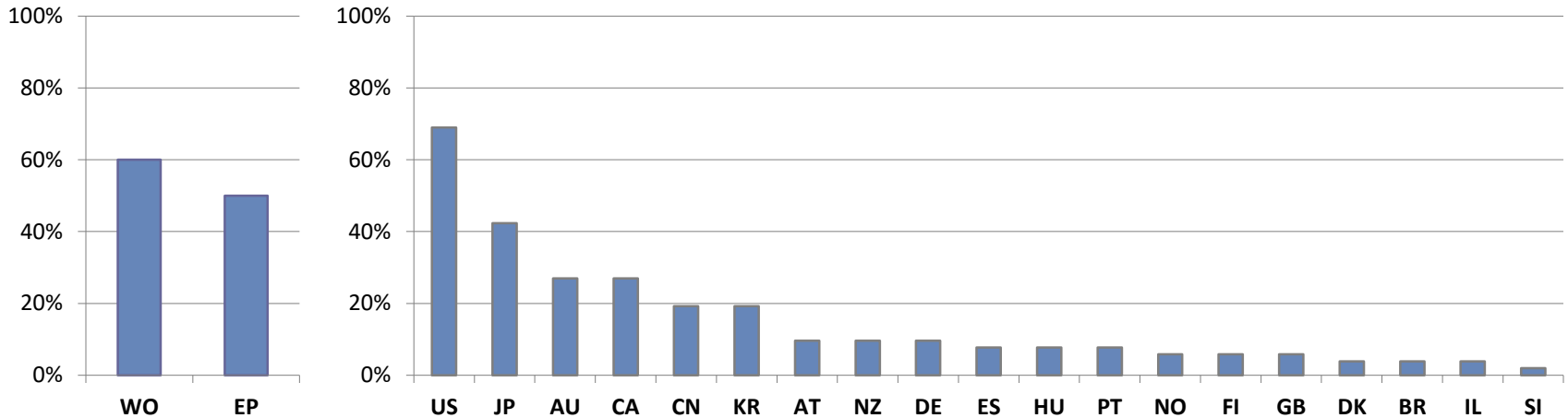
COUNTRIES IN WHICH SIMILAR PATENTS ARE REGISTERED



Evaluation of the invention

Fourth Step: Summary of analysis can be used as basis for filing patent(s) as well as informing your patent nationalization strategy

RESULT OF THE QUANTITATIVE ANALYSIS



Country	WO	EP	US	JP	AU	CA	CN	KR	AT	NZ	DE	ES	HU	PT	NO	FI	GB	DK	BR	IL	SI
absolute	31	26	36	22	14	14	10	10	5	5	5	4	4	4	3	3	3	2	2	2	1
relative	60%	50%	69%	42%	27%	27%	19%	19%	10%	10%	10%	8%	8%	8%	6%	6%	6%	4%	4%	4%	2%

- A worldwide patent was applied in 60% of all cases.
- The results for European patents show slightly lower numbers.

- As expected, by far, the US is the country where the most patents are registered.
- In the mid-range (between 6 and 25) patents are held by Japan, Australia, Canada, China, and South Korea.
- Countries with 5 similar patents or less include China, South Korea, Austria, New Zealand, Germany, Spain, Hungary, Portugal, Norway, Finland, Great Britain, Denmark, Brazil, Israel, and Slovenia.

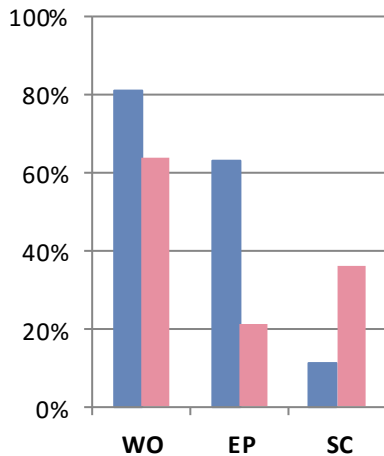
WO: Worldwide patent, is adequate to PCT patent; **EP:** European patent ; **Abbreviations:** Explanatory notes are attached in the appendix

Evaluation of the invention

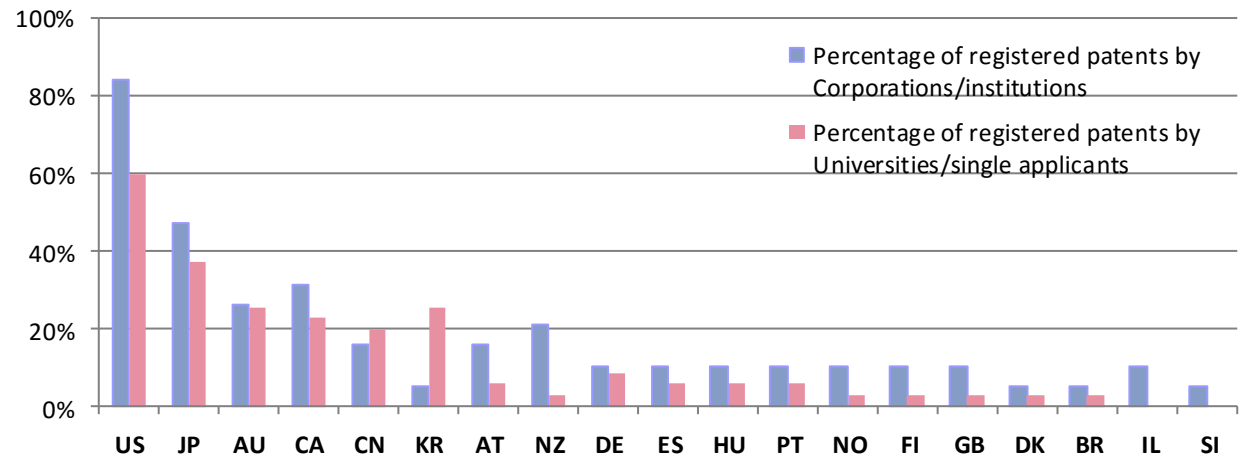
Fourth Step: Summary of analysis can be used as basis for filing patent(s) as well as informing your patent nationalization strategy

PERCENTAGE BREAKDOWN OF REGISTERED PATENTS

Percentage of registered patents by class



Percentage of registered patents by country and applicant type



- Worldwide and European patents were mainly registered by corporations and institutions.
- Single applicants and universities especially protected their patents in single countries.

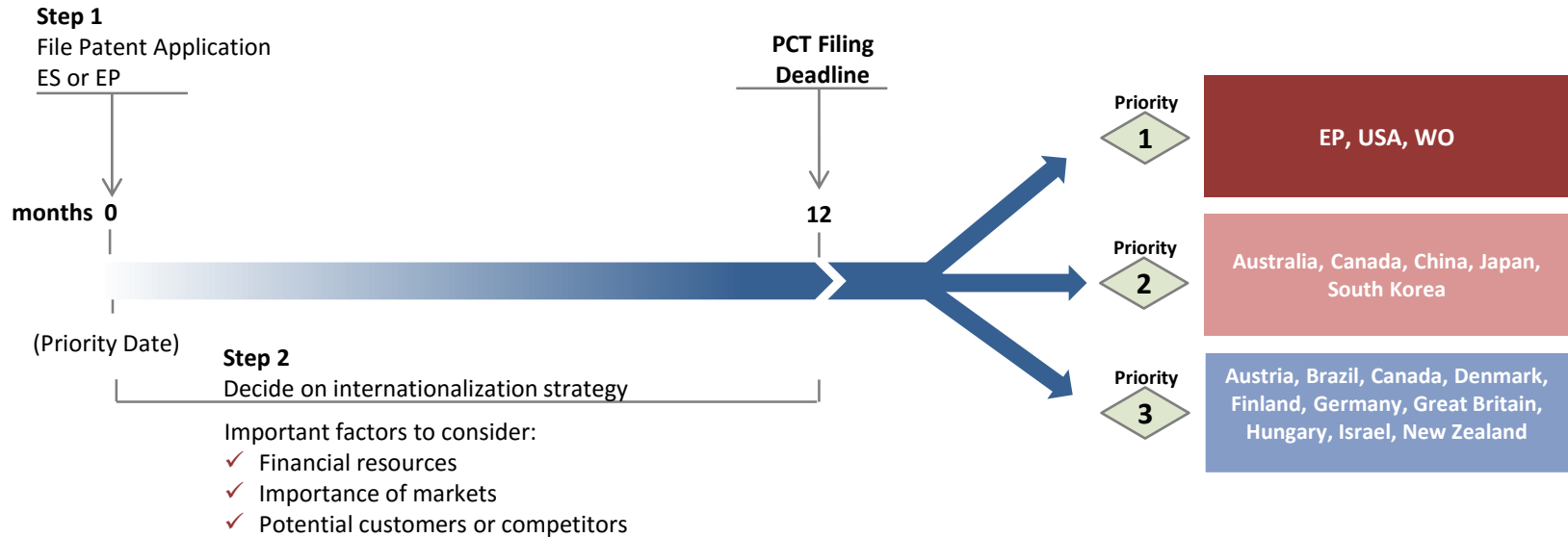
- With the exception of Israel (IL) and Slovenia (SI), both corporations/ institutions and universities/ single applicants registered patents within the respective country.
- The reason for this may be the number of patents filed by universities/ single applicants that apply in their home countries (research driven), whereas corporations/ institutions extend their application to prestige markets such as the USA and individual countries for their WO/ EP patents.
- South Korea is notable for percentage of registered patents by universities/ single applicants over corporations. Indicates active academic research involving keratinocytes, drug screening and toxicity assay development.

WO: Worldwide patent, is adequate to PCT patent; EP: European patent ; SC: Single country application ; **Abbreviations:** Explanatory notes are attached in the appendix

Evaluation of the invention

Fourth Step: Summary of analysis can be used as basis for filing patent(s) as well as informing your patent nationalization strategy

PATENT INTERNATIONALIZATION DECISION MAKING – CONVENTIONAL IP STRATEGY



Priority Date :

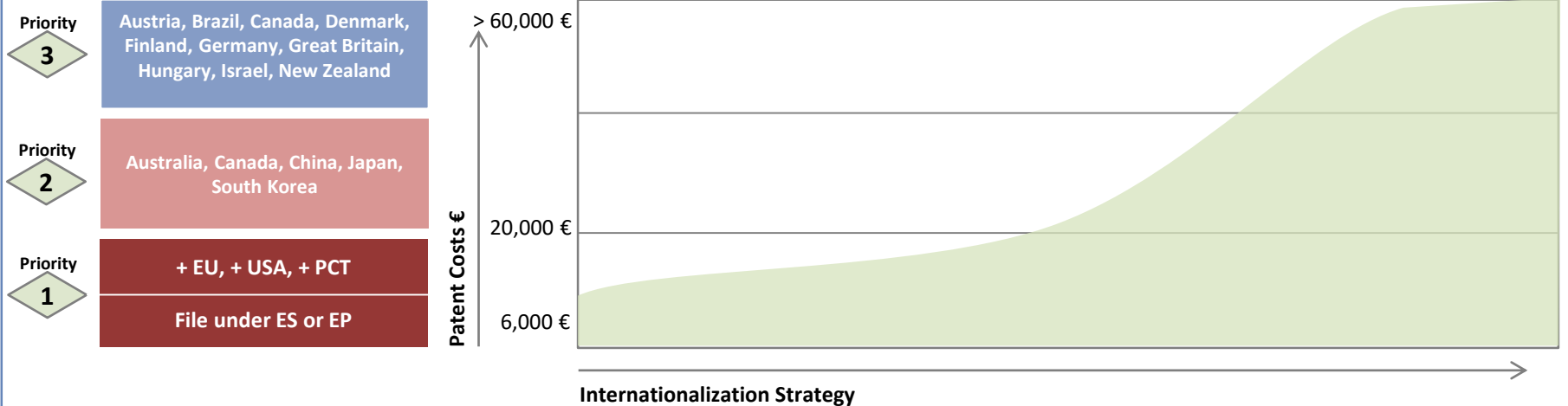
- The filing date of the patent application is considered the “priority date.” When applying for protection in other countries, the filing date of the first application is considered to have “priority” over other applications. The period of priority in which a claimant can apply for subsequent countries is usually 12 months (priority year).
- Once granted your invention will be protected in selected countries for a period of 17 – 20 years.

Source: WIPO, http://www.wipo.int/sme/en/faq/pat_faqs_q9.html

Evaluation of the invention

Fourth Step: Summary of analysis can be used as basis for filing patent(s) as well as informing your patent nationalization strategy

PATENT INTERNATIONALIZATION COSTS



Two starting options:

(1) Spanish Office of Patents and Trade Marks (OEPM)*

- Must be in Spanish, extra costs for translation
- Costs: 72€ filing fee + ca. 5000 € fee for Patent Attorney + translation costs + (optional) 250 € search fee
= ca. 5500 € + translation costs

(2) European Patent (EP)*

- Must be in English
- Costs: 200 € filing fee + 1165 € search fee + ca. 5000 € fee for Patent Attorney
= ca. 6500 €

* The total amount depends on the actual work load of the Patent Attorney and may exceed the mentioned amount

Renewal fees (EPO for pending patent application) are due from the end of the second year*:

- for the 3rd year 465 €
- for the 4th year 580 €
- for the 5th year 810 €
- for the 6th year 1,040 €
- for the 7th year 1,155 €
- for the 8th year 1,265 €
- for the 9th year 1,380 €
- for the 10th year + subsequent yrs. 1,560 €

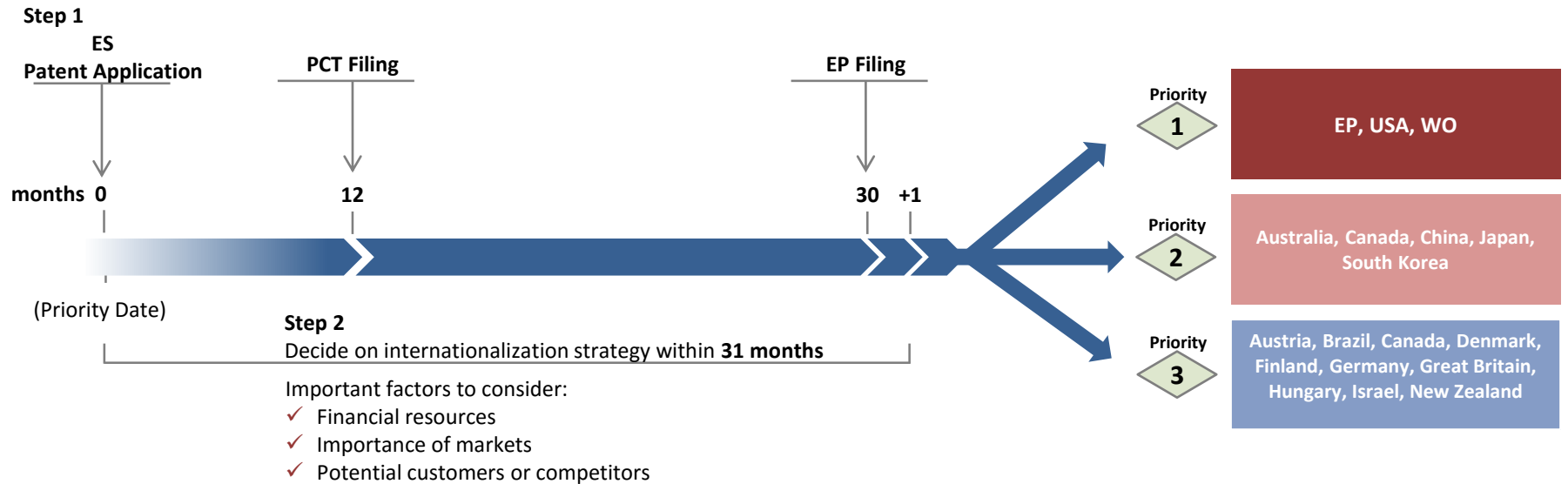
*much more costly for maintaining a granted European patent in a number of countries

Source: EPO, <http://www.epo.org/applying/forms-fees/fees.html>

Evaluation of the invention

Fourth Step: Summary of analysis can be used as basis for filing patent(s) as well as informing your patent nationalization strategy

PATENT INTERNATIONALIZATION STRATEGY & DECISION MAKING – LIMITED RESOURCES, MAXIMUM TIME



Here we outline a patent application strategy which allows a longer time frame to decide on internationalization and defer costs

- Compared to a conventional designation strategy (i.e. single country and/or EP, later followed by PCT), filing a PCT (world patent) during the first 12 month period allows a total of up to 30 months to determine countries for IP protection. This strategy takes advantage of the priority date and can defer costs.
- Filing an EP patent by month 30 even allows an extra month to designate the EU countries for which patent is to be extended.
- Once granted your invention will be protected in selected countries for a period of 17 – 20 years.

Source: WIPO, http://www.wipo.int/sme/en/faq/pat_faqs_q9.html

List of abbreviations

Abbreviation	Meaning
AT	Austria
AU	Australia
BR	Brazil
CA	Canada
CN	China
DE	Germany
DK	Denmark
EP	European Patent
EPO	European Patent Office
ES	Spain
FI	Finland
GB	Great Britain
HU	Hungary
IL	Israel
JP	Japan
KR	South-Korea
KR	South Korea
NO	Norway
NZ	New Zealand
PT	Portugal
SI	Slovenia
US	USA
WIPO	World Intellectual Property Organization
WO	Abbreviation for a PCT patent (valid worldwide)