R&D Cooperation & Intellectual Property
Some Basic Considerations

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EU-Project ATTRACT Workshop

"**EU Breakthrough Technology Square**"

at

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Session "**General Venturing and Private Investments**" on 20 April 2023

Setting the Frame of this Presentation

- There are several forms of registered and unregistered **Intellectual Property Rights (IPR)** *
  - Patents: protect technical inventions
  - Utility models: protect technical inventions
  - Designs: protect aesthetic (outer) appearances
  - Trademarks: protect designations/brands
  - Copyright: protects work of art, but also software
  - Confidential know-how
  - …

- This presentation focus on the protection of technical innovations and inventions by patents, utility models, copyright on software and confidential (technical) know-how

* Patents, utility models, designs and trademarks sometimes also collectively referred to as "**Industrial Property Rights**"

Basic Principles of Business

Business is based on (fair) competition & profit

Copying is one important element in competition; it is not only allowed but also wanted in order to serve the needs of the market and of society in an optimal way unless it is forbidden by law

Innovation is another important element in competition; it creates new products & new services and is an important prerequisite for sustainable economical growth and societal wealth

Knowledge is a prerequisite for innovation
- Reduction of knowledge to practice (”**know-how**”) creates said new & innovative products & services which in turn might be based on concrete inventions
- Technical **inventions** which are new, based on an inventive step & susceptible of industrial application can be protected by **patents*** and utility models

Patents and utility models are negative monopolies which stimulate & foster innovation
- They encourage innovators & investors to invest in R&D
- They force 3rd parties to develop alternative (better) solutions (”work arounds”)

* US patentability requirements: novelty, non-obviousness & usefulness; no patentability restrictions regarding technical character of inventions

Global Patent Protection

- **Paris Convention for the Protection of Industrial Property (1883):**
  - **Equal Rights for Foreigners:** legal and natural persons which are either nationals of or domiciled in a Member State enjoy in all other Member States the same advantages regarding the protection of industrial property their national laws grant to their nationals – The Paris Convention is applicable in 176 Member States (not Taiwan)
  - **Priority Right**: in order to enjoy protection of industrial property in the Member States it is sufficient to file an application in one of the Member States and claim the official filing date of said application as effective filing date of applications filed subsequently in other Member States – provided these subsequent filings are done within 12 months (patents & utility models) and 6 months (designs and trademarks) from the official date of the first application
- **Different ways to achieve global patent protection**
  - **National Patents**: to be filed directly at the national patent offices of the different countries
  - **Regional Patents**: to be filed directly at regional patent offices granting centrally a patent for the participating countries
    - The European Patent Office grants European patents for 39 Member States of the European Patent Convention, one Extension State & 4 Validation States
    - The European Patent Office grants European patents with unitary effect ("Unitary patents") for Switzerland and Liechtenstein and - as of 1 June 2023 - for currently 17 of 25 EU-Member States which participate in an Enhanced Collaboration within the EU based on two EU-Regulations No. 1257/2012 & 1260/2012 and have ratified the Agreement of a Unified Patent Court
    - The Eurasian Patent Office grants Eurasian patents for 8 Member States (of the former Sovjet Union) of the Eurasian Patent Convention (not Ukraine)
  - **International Patent Application ("PCT-Application")**: to be filed directly in one patent office of 157 Member States of the Patent Cooperation Treaty – In the initial international phase of 30 months after the filing or priority date an international search regarding relevant prior art and a written (preliminary) opinion on patentability based on the results of the search will be provided and at the end of that phase the applicant has to decide if he wants to continue this PCT-application in the subsequent national/regional phase before the national or regional patent offices of the Member States and if yes, in which of these 157 Member States

International Patent Application (PCT-Application)

PCT NEWSLETTER (wipo.int)

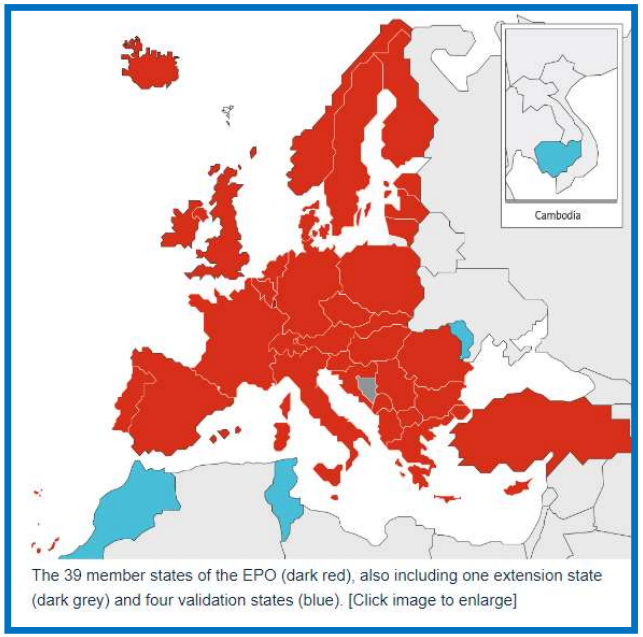
AE United Arab Emirates
AG Antigua and Barbuda
AL Albania (EP)
AM Armenia (EA)
AO Angola
AT Austria (EP)
AU Australia
AZ Azerbaijan (EA)
BA Bosnia and Herzegovina[1]
BB Barbados
BE Belgium (EP)[2]
BF Burkina Faso (OA)[2]
BG Bulgaria (EP)
BH Bahrain
BJ Benin (OA)[2]
BN Brunei Darussalam
BR Brazil
BW Botswana (AP)
BY Belarus (EA)
BZ Belize
CA Canada
CF Central African Republic (OA)[2]
CG Congo (OA)[2]
CH Switzerland (EP)
CI Côte d'Ivoire (OA)[2]
CL Chile
CM Cameroon (OA)[2]
CN China
CO Colombia
CR Costa Rica
CU Cuba
CV Cabo Verde
CY Cyprus (EP)[2]
CZ Czechia (EP)
DE Germany (EP)
DJ Djibouti
DK Denmark (EP)
DM Dominica
DO Dominican Republic
DZ Algeria
EC Ecuador
EE Estonia (EP)
EG Egypt
ES Spain (EP)
FI Finland (EP)
FR France (EP)[2]
GA Gabon (OA)[2]
GB United Kingdom (EP)
GD Grenada
GE Georgia
GH Ghana (AP)
GM Gambia (AP)
GN Guinea (OA)[2]
GQ Equatorial Guinea (OA)[2]
GR Greece (EP)[2]
GT Guatemala
GW Guinea-Bissau (OA)[2]
HN Honduras
HR Croatia (EP)
HU Hungary (EP)
ID Indonesia
IE Ireland (EP)[2]
IL Israel
IN India
IQ Iraq
IR Iran (Islamic Republic of)
IS Iceland (EP)
IT Italy (EP)[3]
JM Jamaica
JO Jordan
JP Japan
KE Kenya (AP)
KG Kyrgyzstan (EA)
KH Cambodia[4]
KM Comoros (OA)[2]
KN Saint Kitts and Nevis
KP Democratic People's Republic of Korea
KR Republic of Korea
KW Kuwait
KZ Kazakhstan (EA)
LA Lao People's Democratic Republic
LC Saint Lucia
LI Liechtenstein (EP)
LK Sri Lanka
LR Liberia (AP)
LS Lesotho (AP)
LT Lithuania (EP)[2]
LU Luxembourg (EP)
LV Latvia (EP)[2]
LY Libya
MA Morocco[4]
MC Monaco (EP)[2]
MD Republic of Moldova[4]
ME Montenegro (EP)[2,5]
MG Madagascar
MK North Macedonia (EP)
ML Mali (OA)[2]
MN Mongolia
MR Mauritania (OA)[2]
MT Malta (EP)[2]
MU Mauritius
MW Malawi (AP)
MX Mexico
MY Malaysia
MZ Mozambique (AP)
NA Namibia (AP)
NE Niger (OA)[2]
NG Nigeria
NI Nicaragua
NL Netherlands (EP)[2]
NO Norway (EP)
NZ New Zealand
OM Oman
PA Panama
PE Peru
PG Papua New Guinea
PH Philippines
PL Poland (EP)
PT Portugal (EP)
QA Qatar
RO Romania (EP)
RS Serbia (EP)
RU Russian Federation (EA)
RW Rwanda (AP)
SA Saudi Arabia
SC Seychelles
SD Sudan (AP)
SE Sweden (EP)
SG Singapore
SI Slovenia (EP)[2]
SK Slovakia (EP)
SL Sierra Leone (AP)
SM San Marino (EP)[2]
SN Senegal (OA)[2]
ST Sao Tome and Principe (AP)
SV El Salvador
SY Syrian Arab Republic
SZ Eswatini (AP)[2]
TD Chad (OA)[2]
TG Togo (OA)[2]
TH Thailand
TJ Tajikistan (EA)
TM Turkmenistan (EA)
TN Tunisia[4]
TR Turkey (EP)
TT Trinidad and Tobago
TZ United Republic of Tanzania (AP)
UA Ukraine
UG Uganda (AP)
US United States of America
UZ Uzbekistan
VC Saint Vincent and the Grenadines
VN Viet Nam
WS Samoa
ZA South Africa
ZM Zambia (AP)
ZW Zimbabwe (AP)

1 Extension of European patent possible.
2 May only be designated for a regional patent (the "national route" via the PCT has been closed).
3 Italy may be designated for a national patent only in international applications filed on or after 1 July 2020.
4 Validation of European patent possible.
5 For international applications filed before 1 October 2022, only an extension of a European patent is possible (there is no national phase before the Intellectual Property Office of Montenegro). International applications filed on or after 1 October 2022 will include the designation of Montenegro for a European Patent.

Where a State can be designated for a regional patent, the two-letter code for the regional patent concerned is indicated in parentheses (AP = ARIPO patent, EA = Eurasian patent, EP = European patent, OA = OAPI patent).

PCT NEWSLETTER (wipo.int)

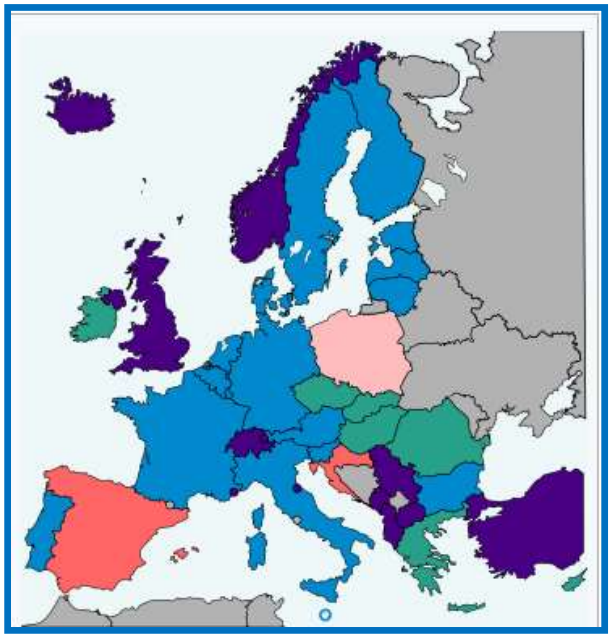
European Patent Convention (EPC), Unified Patent Court Agreement (UPCA) & European Patents with Unitary Effect (UPS)



The 39 member states of the EPO (dark red), also including one extension state (dark grey) and four validation states (blue). [Click image to enlarge]

EPC geographical coverage

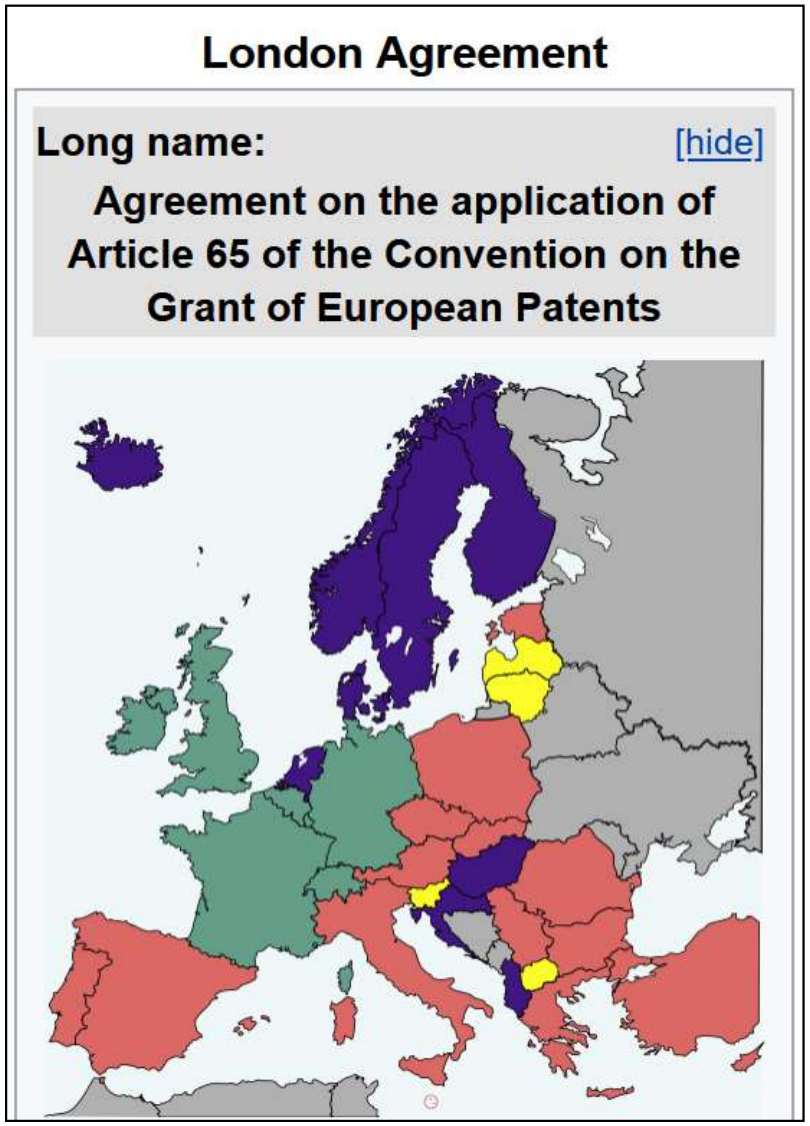
https://www.epo.org/about-us/foundation.html



UPCA & UPS geographical coverage

The Unified Patent Court | Unified Patent Court (unified-patent-court.org)

London Agreement (LA)



London Agreement (2000) - Wikipedia)

Parties not requiring translation

Parties requiring translation of the claims in the official language of the State under consideration

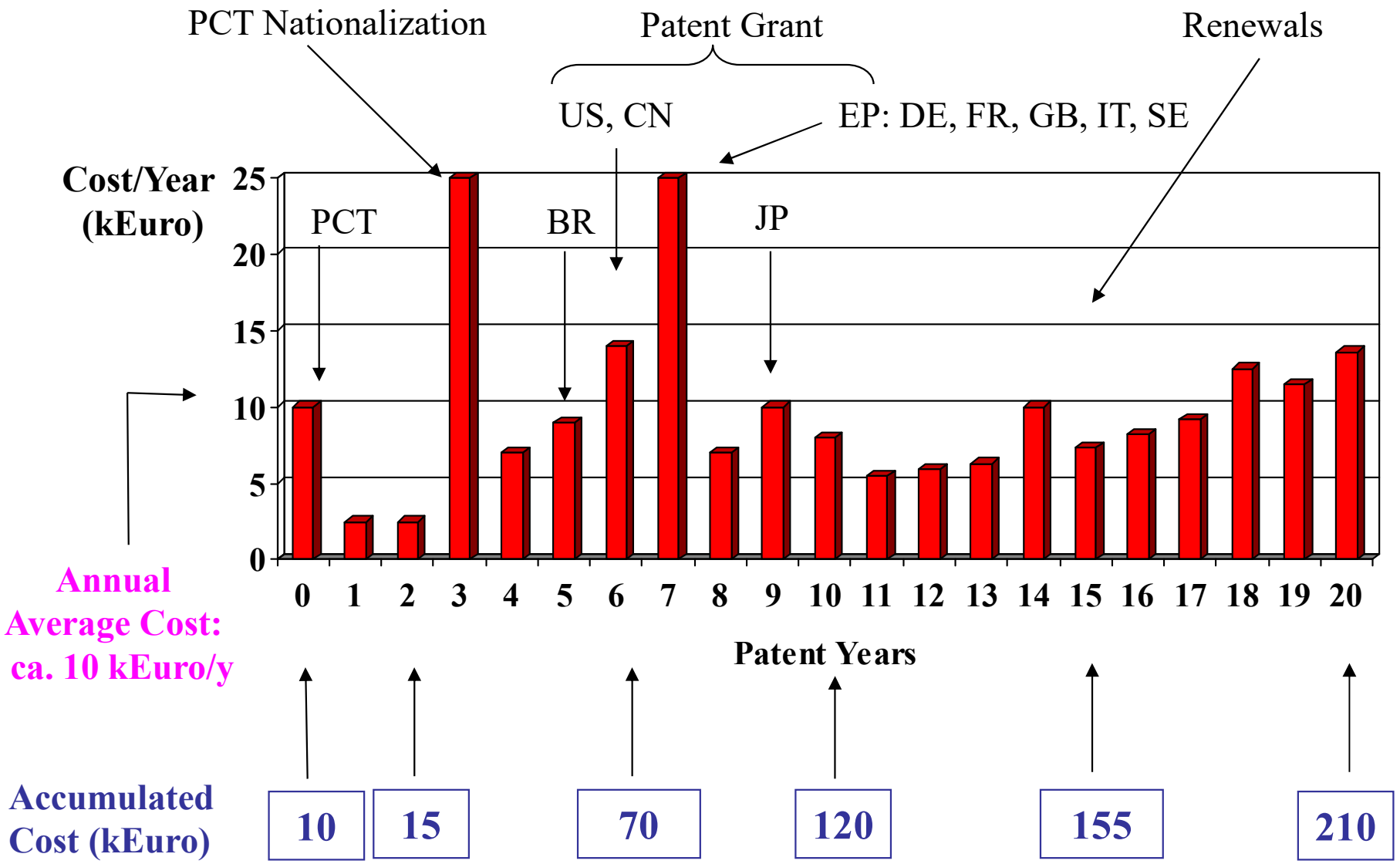
Parties requiring the description in English, and the claims in the official language of the State under consideration

European Patent Convention parties, which are not parties to the Agreement

Signed	17 October 2000
Location	London, United Kingdom
Effective	1 May 2008
Condition	ratification by eight states (including Germany, France and the United Kingdom)
Signatories	10
Parties	22
Depositary	Government of the Federal Republic of Germany
Citations	https://www.epo.org/law-practice/legal-texts/london-agreement/status.html
Languages	English, French and German

London Agreement (2000) - Wikipedia

Patent Protection Cost (PCT First Filing)

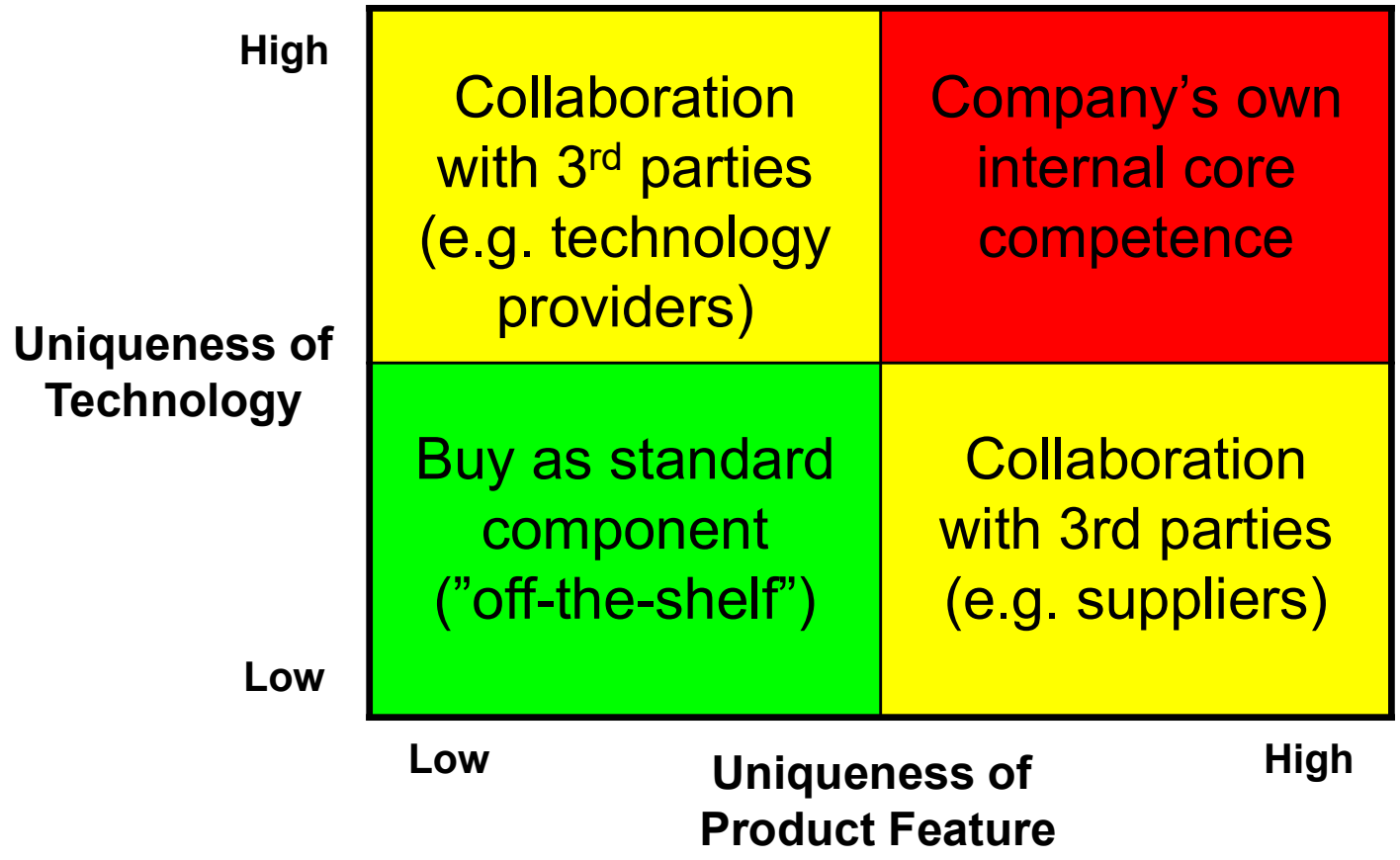


The Roles of Patents

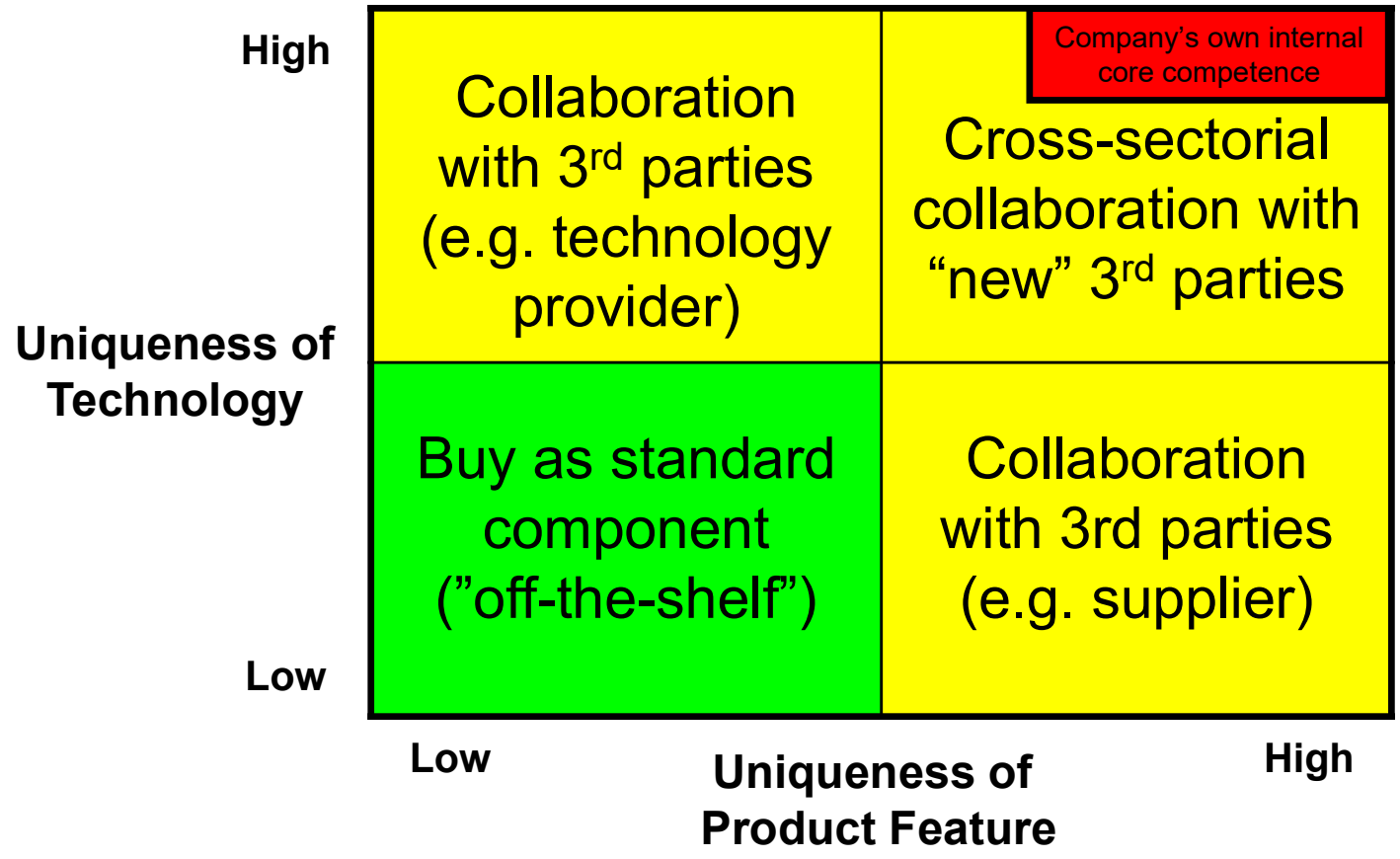
- ***The original "classical" role of a patent - as defined by law***:
  A Patent is a **negative monopoly right**
  - which the society grants to the patent holder in return for the disclosure of the invention forming the base for said monopoly right to the public
  - which is limited in time and geographical coverage and
  - which gives the patent holder the right to forbid any third party to commercially use the subject matter protected by that monopoly right

- ***Further roles of patents - as developed in practice:***
  Patents are **effective & multi-facetted business tools** for setting up an appropriate business model for the commercial exploitation of an innovation in a specific business environment; they are
  - a strong **currency** to get access to complementary technologies controlled and/or patent protected by third parties (cross licenses)
  - a strong tool to increase the attractiveness of a technology or product concept for third parties
  - a strategic asset for co-operations, M&A, JV, and strategic alliances
  - an efficient tool for securing exclusivity on the market of brand-identifying features or other competitive advantages of products & services
  - an official certificate of the innovator's technological competence & leadership
  - an efficient tool for blocking competitors and controlling suppliers in their activities
  - a strategic asset increasing the innovator's value for shareholders, investors, banks & rating companies
  - a strategic tool in connection with international standards ("SEP" – Standard-Essential-Patents)
  - a prerequisite for an active licensing policy
  - ...

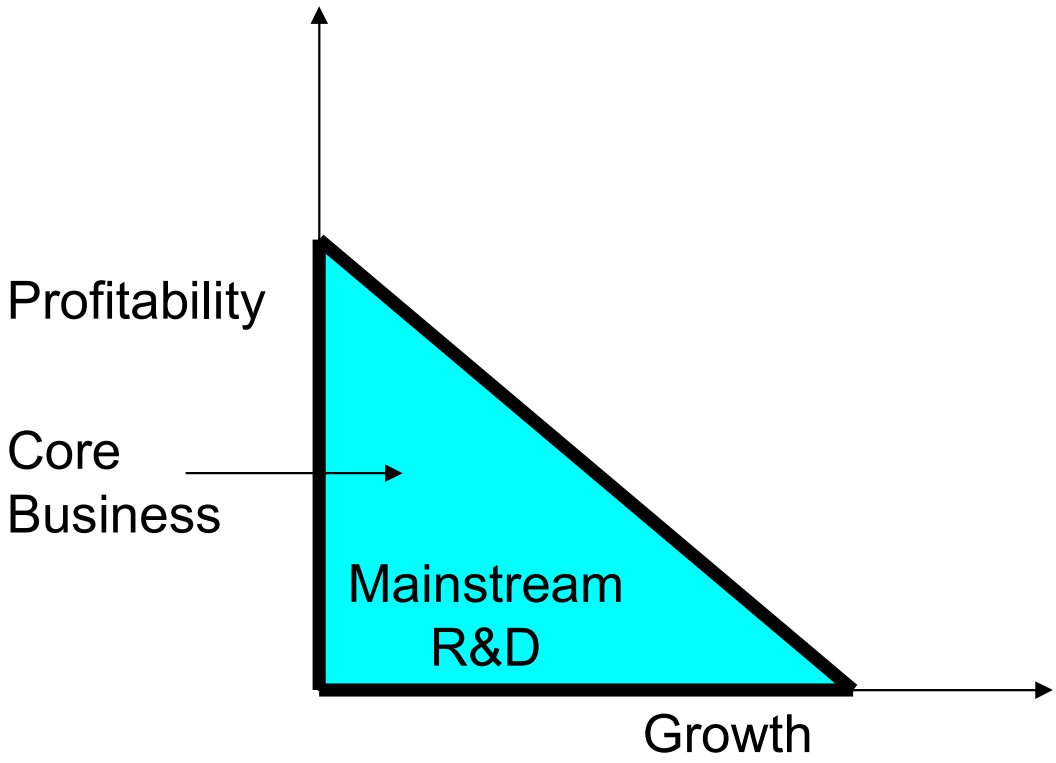
Make, Collaborate or Buy Strategy of Companies in the “Good Old Time”



Make, Collaborate or Buy Strategy of Companies in the Time of the "New Normal"



Profitability & Growth



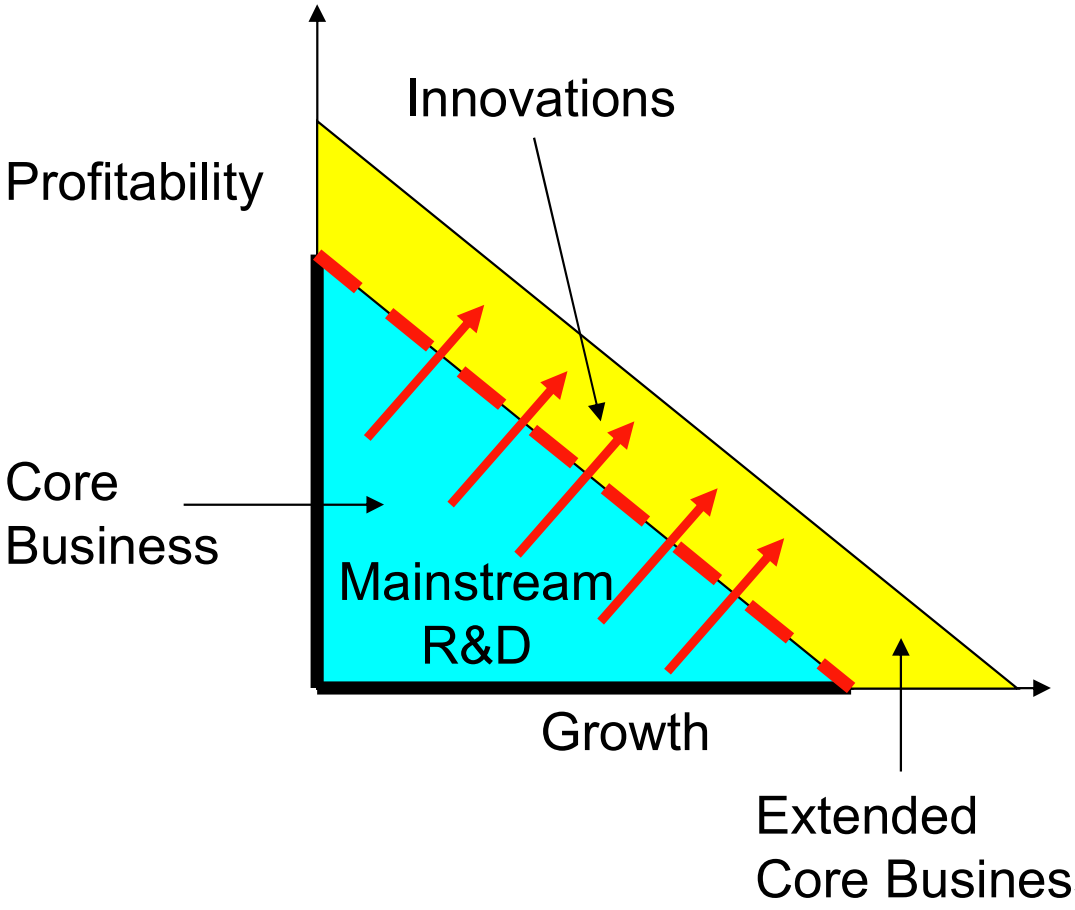
Caught in the Box

The company does mainstream R&D within the core business as any other actor in that business

It files patent applications focused on details/components of existing products

It creates (i) profitability within the core business at the expense of growth or (ii) growth at the expense of profitability, but creates usually only little profitable growth (if any)

Profitability & Growth



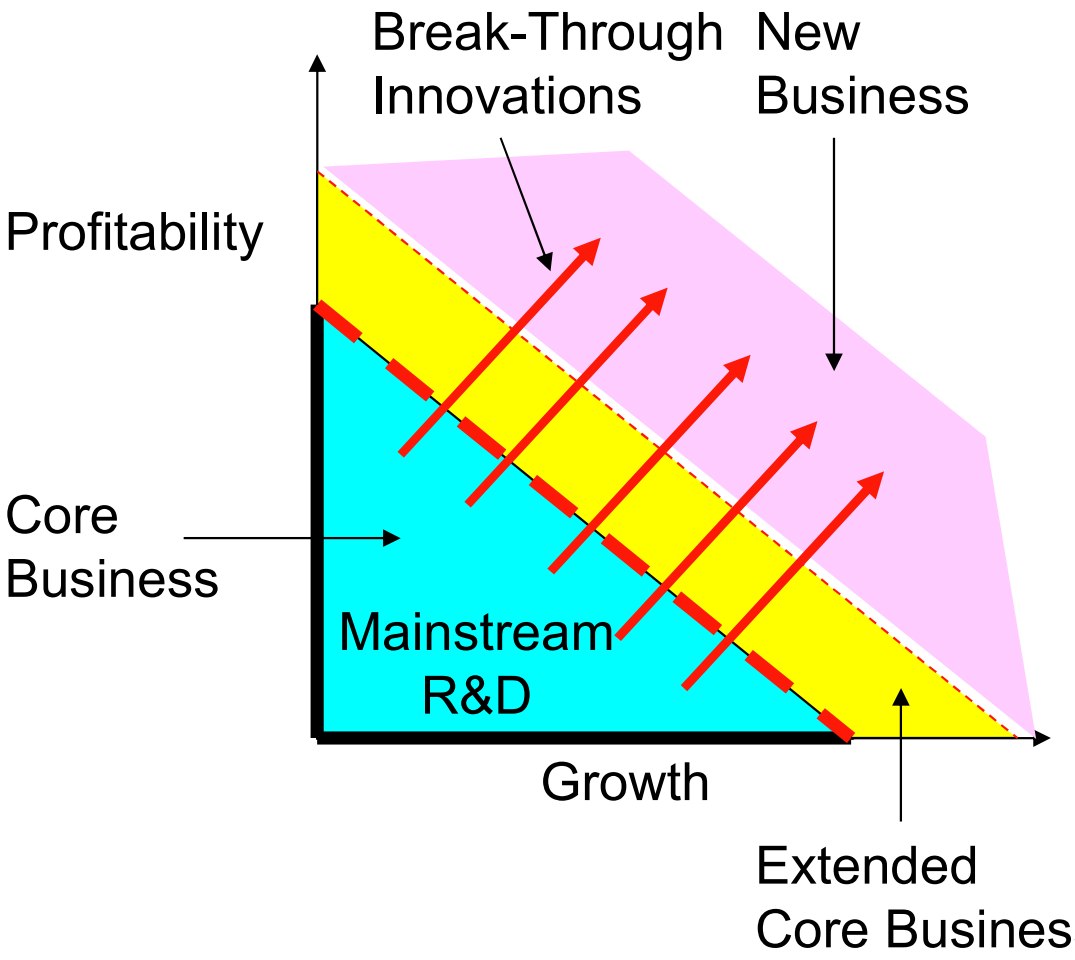
Breaking down the Walls

The company creates innovations related to core business

It files patent applications focused on concepts of next generation products, systems, technologies & new materials

It expands the core business to adjacent fields and creates profitable growth in the expansion area

Profitable Growth !



Thinking outside the Box

The company creates break-through innovations focusing on customer needs (total customer solutions) and connecting core business with other businesses

It files patent applications focused on strategic new product and service concepts and emerging technologies

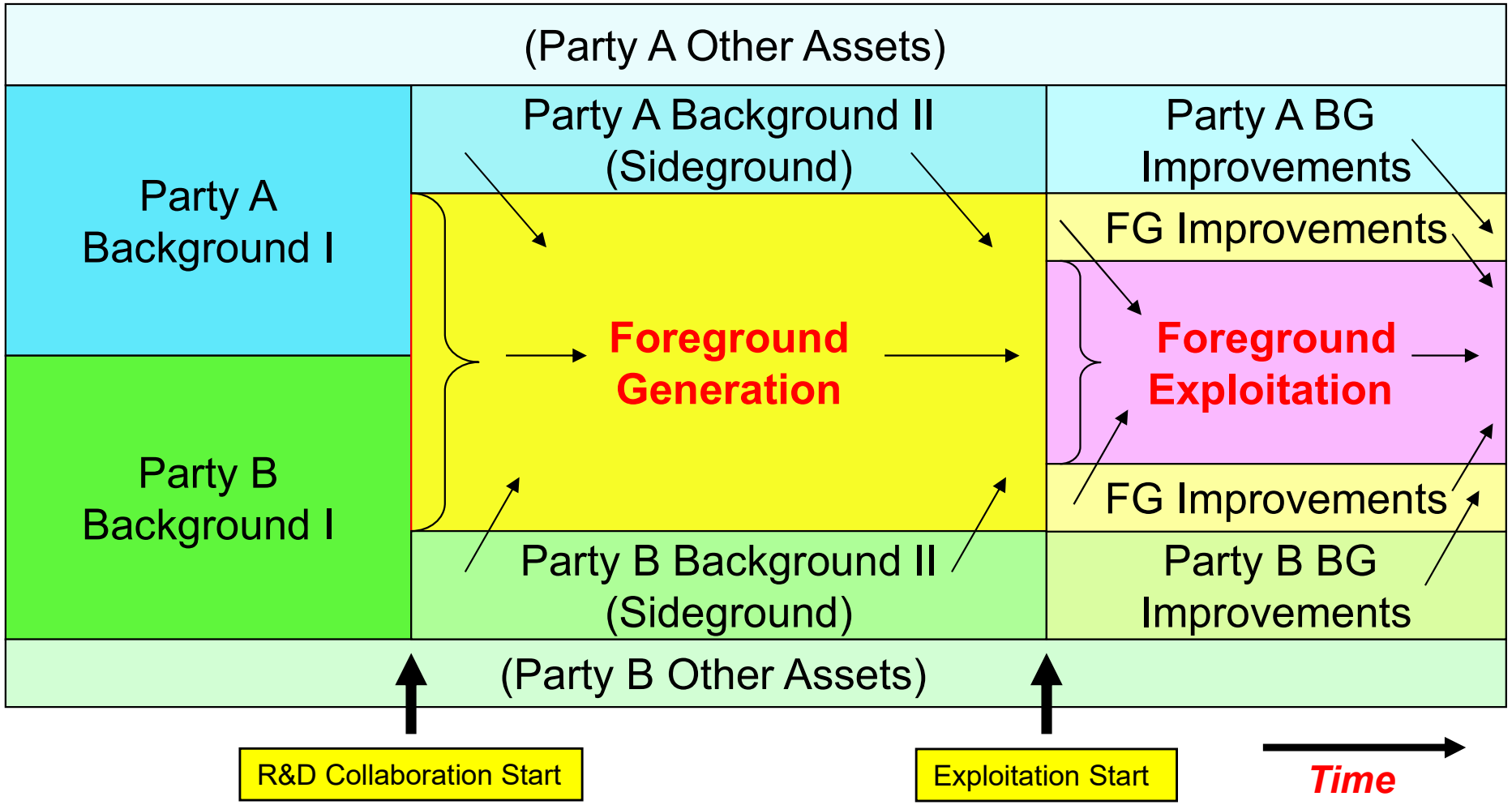
It creates considerable profitable growth in new businesses

Definition Business Model

- **Business Model** - is the outline of all transactions needed to make a profitable business *
- **Type 1: Unilateral Business model** - is the outline of all transactions *of a party* needed to make *its* business profitable *and/or to create benefits of similar nature for it*
  - Patentholder who wants exclusivity for its patented idea
  - Patentholder who wants to exploit its patented idea by granting patent licenses
    - Exclusive license (patentholder retains no own right to use its patent)
    - Sole license (patentholder retains own right to use its patent)
    - Non-exclusive licenses to an unlimited number of licensees
  - Doing everything inhouse under strict confidentiality
  - Reducing collaborations with external 3rd parties
  - …
- **Type 2: Mutual Business model** - is the outline of all transactions *between independent parties* needed to make *their* businesses profitable *and/or to create benefits of similar nature for them*
  - Cross licenses on patents & confidential know-how
  - Patent & know-how pools
  - R&D-collaborations
  - Open Source communities
  - …

* Taken from: **Günter Gromeier**: Business Models for Software Components in the Automotive Industry (ERTS 2004 Congress, Toulouse)

The Core Structure of R&D Collaborations
Foreground & Background



Business Model & Contract Management
Considerations before the Start of Collaboration

- Confidentiality
- Documentation & protection of your ideas, inventions & confidential know-how that might be relevant for the collaboration
- Intentions of the collaboration parties
- (Technical) scope of the planned collaboration project
- Suitable mutual business model
- Exit/divorce/disputes
- **Applicable law** (*multinational* R&D!)
- Contractual main bullet points

Business Model & Contract Management
General Collaboration Contract Structure

- Split of the collaboration into various consecutive phases with corresponding agreements & exit/divorce plans
- *Before* the start of substantive discussions & negotiations regarding a potential collaboration: **Non-Disclosure Agreement** (”NDA”)
- *Optional*: **Frame Agreement** (umbrella contract) covering the general aspects, objectives, goals and intentions of the collaboration
- *Specific* agreements for the various collaboration phases, as for instance:
  - Phase 1: Non-Disclosure Agreement
  - Phase 2: Feasibility Study Agreement
  - Phase 3: Prototype Development Agreement
  - Phase 4: Product Development Agreement
  - Phase 5: Product Industrialisation Agreement
  - Phase 6: Serial Production & Exploitation Agreement
  - ...

Business Model & Contract Management
Major Contract Modules

- Parties
- Preamble (intentions of the parties)
- Objectives & scope (project description)
- R&D collaboration plan
  - Organisation, structure, milestones, ...
- Contributions
  - Financial contributions
  - Personnel
  - Other contributions
- Confidentiality
- Foreground (FG) & Background (BG)
  - Ownership
  - Access rights (licenses)
  - Excluded assets & other limitations
  - Handling & financing of FG & BG IP (patents, utility models, designs, ...)
- Exploitation plan
  - Use by the parties of the collaboration
  - Licensing to third parties
  - Enforcement against third party infringers
  - Allocation of profits & other benefits
- Exit/divorce plan (premature termination)
- Warranties & liabilities
- Applicable law & dispute regulation

The Core Structure of R&D Collaboration
Foreground & Background

- **Foreground** (”FG”): Knowledge generated *within* the frame of a collaboration between parties
- **Background** (”BG”): Knowledge generated *outside* the frame of the collaboration, but *necessary* for the generation, use & exploitation of Foreground
  - Background I: generated *before* the collaboration start
  - Background II (”Sideground” or ”SG”): generated *during* the development phase, but *independent* of the collaboration
- **Improvement**: further development/enhancement of FG & BG *after* the end of the development phase of the collaboration
- **Other Assets**: Knowledge *not necessary* for the generation and exploitation of Foreground
- **Knowledge:** confidential know-how, copyrights (software), demonstrators, prototypes, test results, data bases, inventions, patents, patent applications, designs, design applications, etc.
  - **Demonstrators, prototypes and other tactile/visible realisations** and results comprising Foreground & Background of one, some or all collaboration parties – often in a severable form
  - **Software programs** comprising Foreground & Background of one, some or all collaboration parties – often in an amalgamated & non-severable form
  - **Patents, patent applications and other IP** owned or controlled by one, some or all collaboration parties – often dependent on each other
  - **Data bases, test results and other collections of information** of one, some or all collaboration parties – often in an amalgamated & non-severable form

Business Model & Contract Management
Foreground & Background

- **Ownership**
  - Foreground
  - Background I & Background II (Sideground)
  - Improvements
  - Special provisions for demonstrators, prototypes, …
  - Special provisions for software programs, data bases, …
  - Limitations & other encumbrances regarding Ownership
    - Remuneration for patentable inventions of employees
- **Access Rights (licenses)**
  - Foreground
  - Background I & Background II (Sideground)
  - Improvements
  - Special provisions for demonstrators, prototypes, …
  - Special provisions for software programs, data bases, …
  - Limitations in Access Rights
    - Necessary 3rd party consents
    - Legitimate own interest
    - Right to grant sublicenses, have made rights, access rights for affiliates and associated companies …
- **Exclusions from Background & further limitations**
- **Handling & financing of FG & BG IP** (patents, utility models, designs, ...)
- ....

Summary

The word "BEFORE" is in R&D collaboration a magic key word ....

- Prepare yourself well before you start to talk to your potential collaboration partner
- Before starting the discussion with the collaboration partner secure your knowledge by documenting & officially depositing your confidential know-how and by protecting your ideas about the subject-matter of the planned collaboration with patents and other suitable IP in order to have this knowledge defined as your Background in the planned collaboration.
- Before starting the discussion with the collaboration partner, conclude a Non-Disclosure Agreement with him
- Discuss with the partner what you together with him want to achieve with this collaboration and develop together a suitable business model before starting the collaboration
- Based on this business model negotiate and conclude a R&D collaboration contract before you start the collaboration; if it turns out during the collaboration that its focus or subject-matter has to be changed, mirror this with undue delay in corresponding amendment(s) to the R&D collaboration contract
- If not already contained in the R&D collaboration, start in good time before the end of the collaboration project to negotiate the details of a subsequent collaboration with the partner in the commercialisation & exploitation phase (supply contract, distribution contract, ...), if the R&D collaboration generated the expected results and corresponding products or services should be launched on the market

Thank you for your attention

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