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Eastern Partnership +

Innovation Strategies and Innovation Management

engage AG, September 7th, 2017
Peter Häfner

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Key Technology Ventures

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Innovation & Strategy

Commercialization Routes

Intellectual Property Strategies

Innovation Systems

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Our Mission: Creating Value from IP

- Founded in 2003 (holding company active in this field since 1991)
- Private commercial company
- Team of 20 university graduates of different fields
- Partners in public research in Germany:
  Universities > 15
  Research institutions > 15
- Identification and evaluation of more than 250 technologies per year
- Support of >300 patent applications and >100 license agreements
- Portfolio currently 14 spin-offs
- Associated seed fund for spin-offs

engage AG
Karlsruhe, Rostock, Leipzig, Berlin


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IP-Asset-Management

- Technology Screening
- Market Analyses
- Patenting
- Property Rights Strategies
- Licensing, Cooperations
- IP Portfolio Management

PVA MV

Grant Office

- Generating Project Ideas
- Setting Up Projects
- Tendering
- Project Management
- Financial Engineering
- Reporting

Spin-offs

- Generating Business Ideas
- Elaborating Business Model
- Structuring Financing
- Business Planning
- Launching Companies
- Ramp-up-Management

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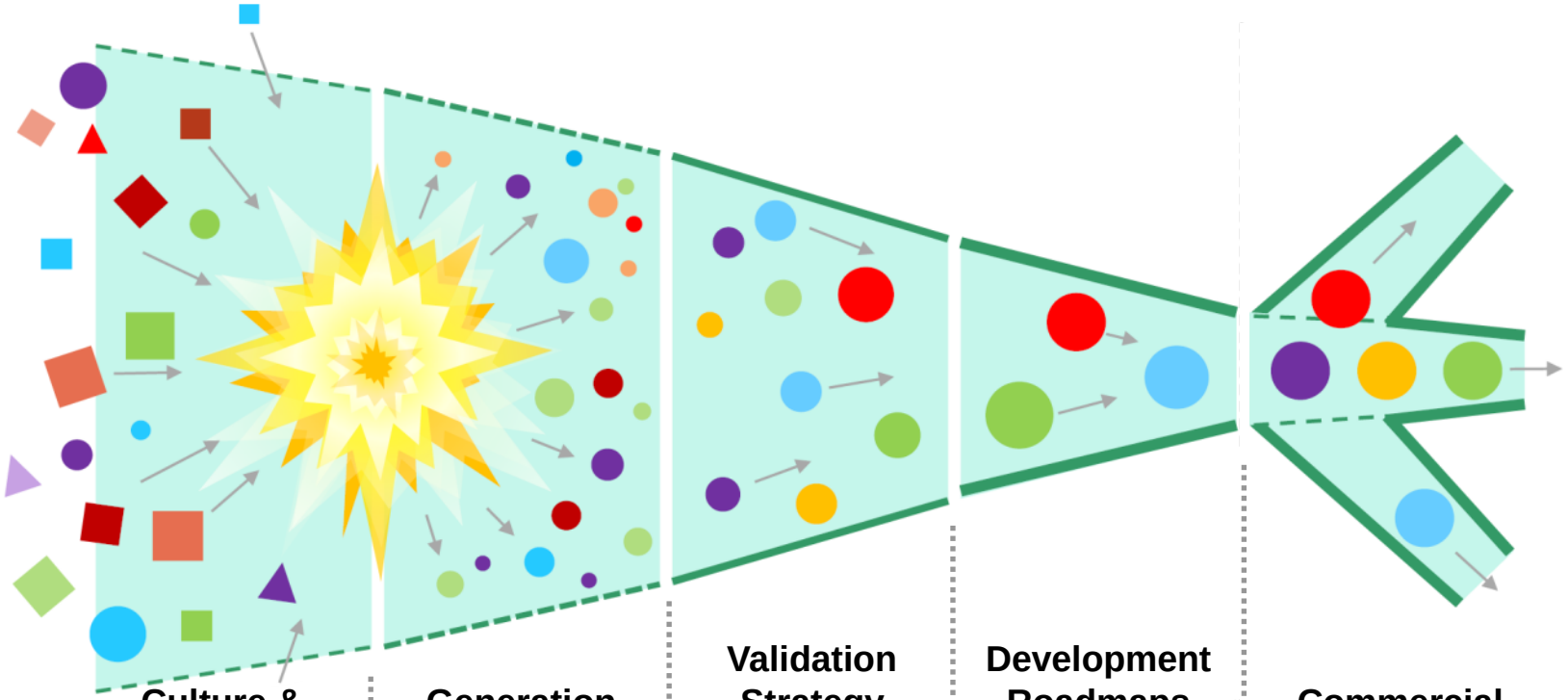
It‘s a Rocky Road to Success



Culture & Inspiration

- Workshops
- Information
- Organisational Culture

Generation of Ideas

- Screening
- Brainstorming
- Networks

Validation Strategy IP Protection

- Market Studies
- Development of Strategy
- Patenting

Development Roadmaps and Financials

- Technology-Roadmap
- Fundraising (public, private)

Commercial-ization

- Start-up
- Licensing / Sale
- Cooperation
- Contract R&D

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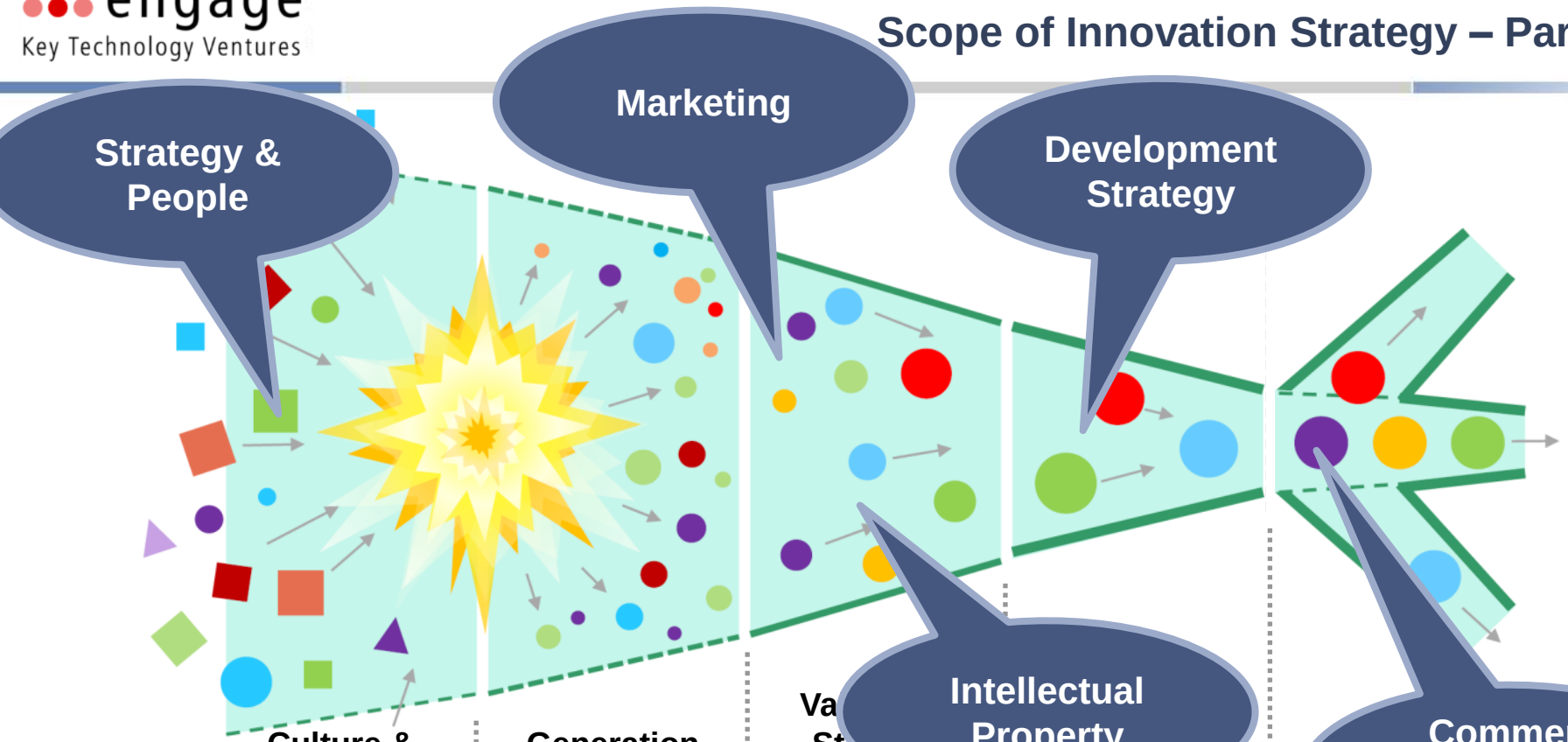
Scope of Innovation Strategy – Part 1



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Va… St… IP Protect…

- Market Studies
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- Patenting

…icials

- Technology-Roadmap
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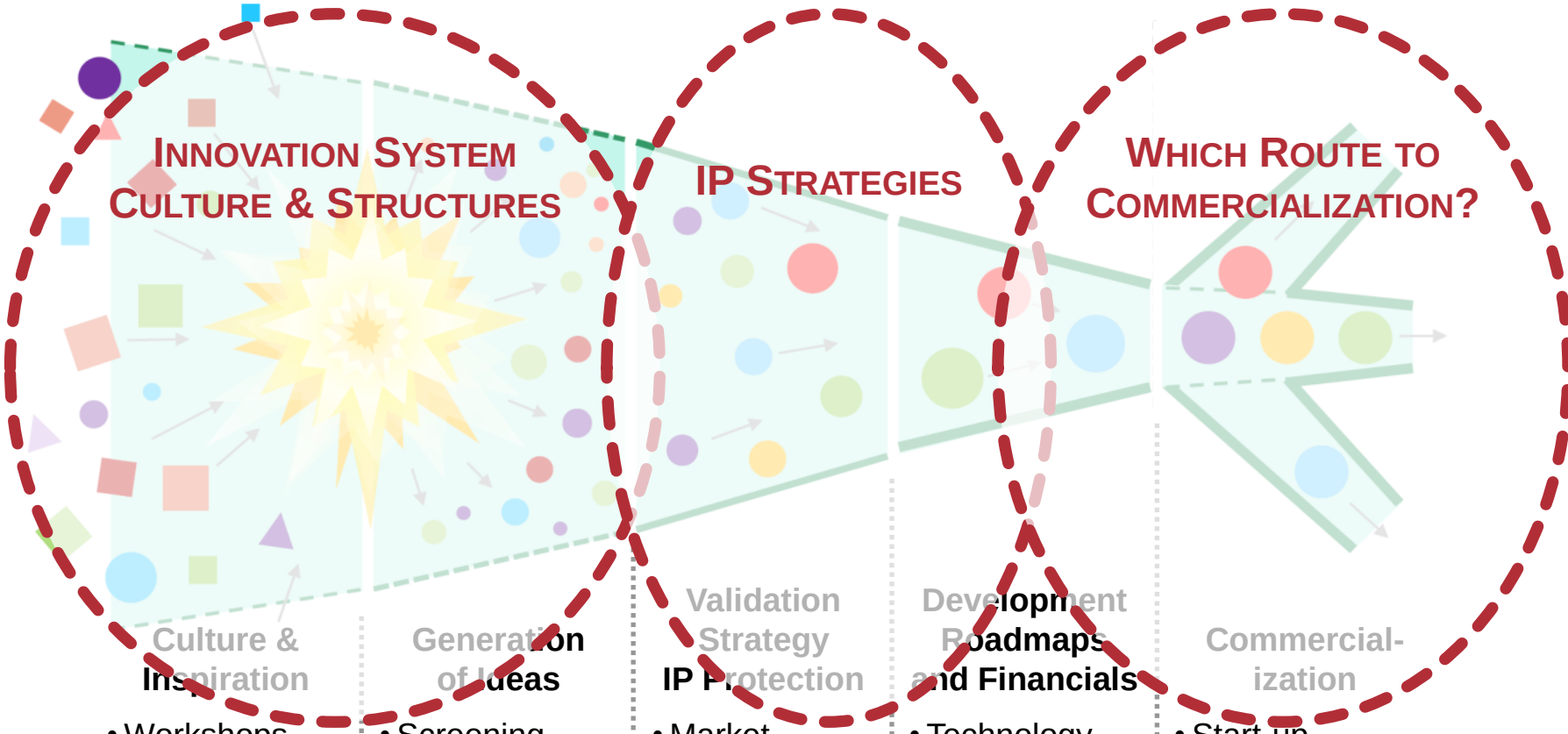
Scope of Innovation Strategy – Part 2



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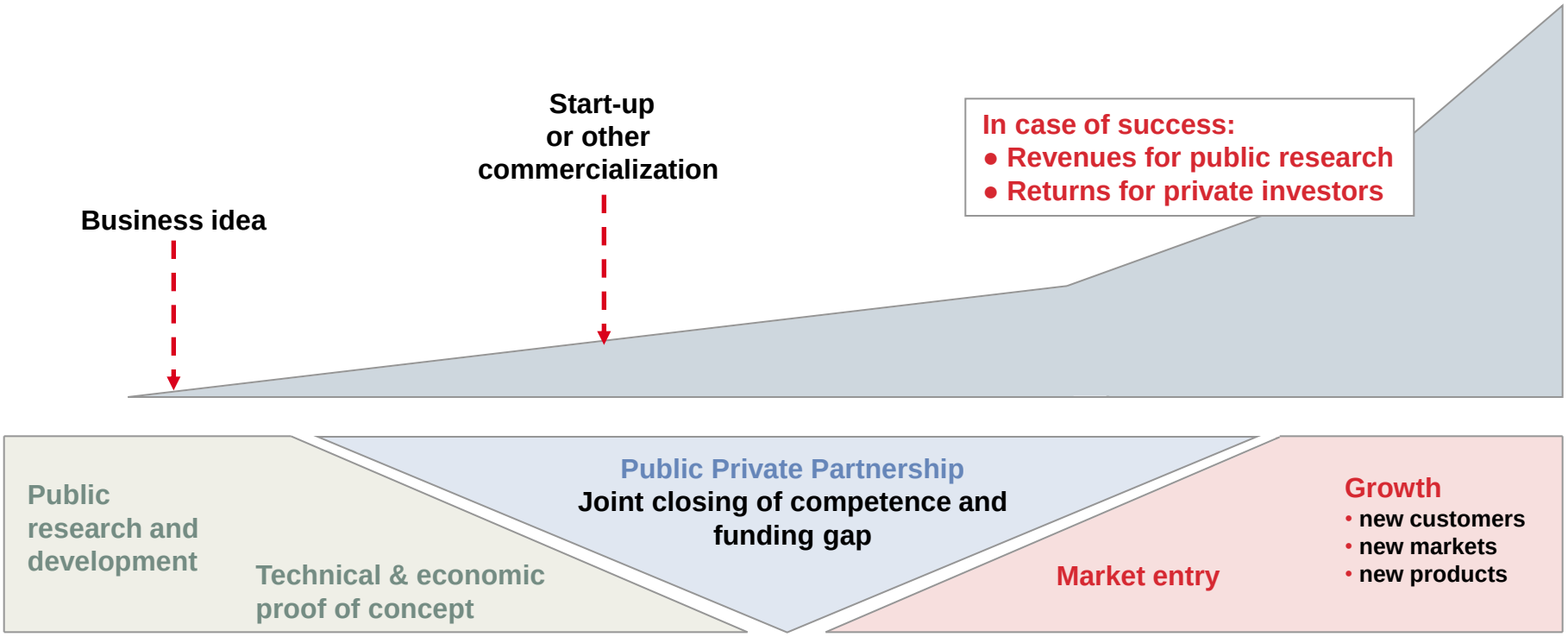
Challenges with Respect to Commercialization



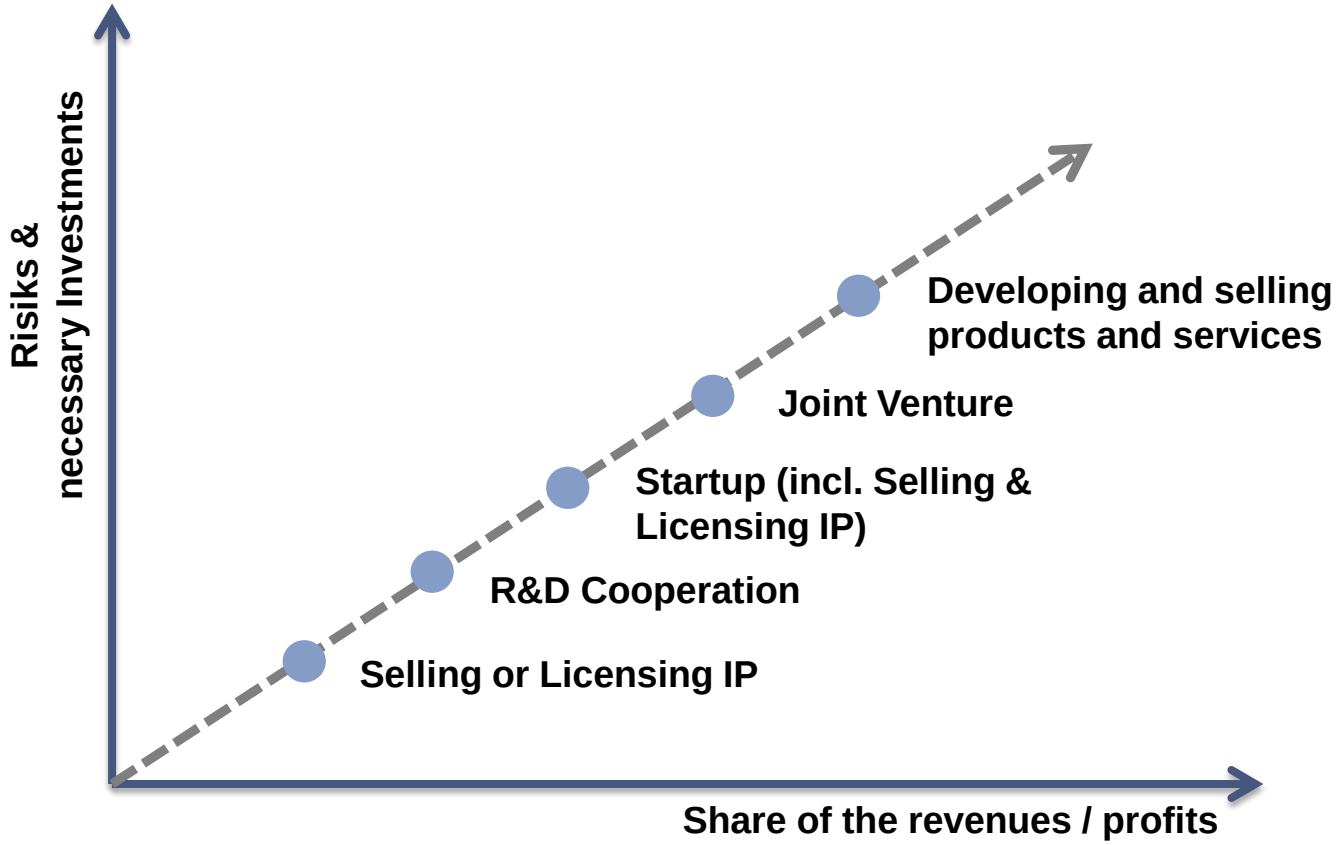
TechnologyScreening
Identification, evaluation and further development of business ideas relevant to the market

Start-up preparation
Market analysis, structuring, funding, team, business planning

Ramp-up Management
Sales, controlling, marketing, funding, organisation, human resources

Portfolio management
Ensuring of shareholder rights, follow-up funding, business transactions

Commercialization Routes – Opportunities and Risks



Which Commercialization Route to Take

Key Questions

- How much effort are you willing to contribute to commercialization activities?
- What are your competences and capacities to become engaged in commercialization activities?
- What internal and external support is available to you?
- How much risk are you willing to take?
- At what stage and what type of technology do you seek to commercialize?
- How much additional R&D is needed in terms of resources, capital, before being market ready?

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Selling or Licensing IP

Strengths	▪ You can focus on what you are good at – research ▪ You don't need much additional money for application oriented research ▪ Follow-up R&D might get you additional revenues (see next slide)	▪ IP from (public) research is typically very early ▪ Finding customers for this early know-how is not easy ▪ Money for making it more valuable is not available in research organizations	**Weaknesses**
Benefits	▪ Sales revenue or licensing fee ▪ Revenues are typically quite low, except maybe in medical fields ▪ Don't rely on upfront or fixed fees only (often very low), but negotiate about variable fees (based on income etc)	▪ You only rely on legal protection (mostly), which can be attacked	**Risks**

R&D Cooperation

Strengths	▪ You can focus on what you are good at – technology stuff ▪ Other topics (link to the market etc) are taken care of by others	▪ Difficult to find someone willing to contract you ▪ Research organization & structure makes it sometimes difficult to work with the industry (speed, focus, etc) → think of creating a specialized unit or entity	**Weaknesses**
Benefits	▪ Immediate money (up-front) ▪ Free to calculate as you wish (lower limit if “EU Framework for State aid for RDI” applies to you) ▪ You get paid only for your work, not the success of your innovation → maybe combine with other commercialization routes	▪ Loosing track and credibility in the scientific community (less publications, internal performance indicators, tenure track, …)	**Risks**

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Startup (incl. Selling & Licensing IP)

Strengths	▪ Entity focused solely on selling your innovation (products & services) ▪ Roadmap totally oriented on commercial success ▪ Easy to find subsidies (EU SME instrument, national funds) or VC ▪ Chance of participating in the market succes of your innovation	▪ Excellent researchers typically are only mediocre entrepreneurs (at best) ▪ It takes a long time till (significant) money flows back to research organization	**Weaknesses**
Benefits	▪ Full value of the company ▪ Realized by IPO or trade sale ▪ Constant stream of annual profits or other reveneus (licenses, contract R&D)	All sorts of market risks, e.g … ▪ Playing it too much research-like ▪ Not willing to accept major shareholders from outside (fear of loosing control) ▪ Changes of the market or the environment	**Risks**

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Joint Venture / Developing and Selling Products and Services

Strengths	▪ Success depends mostly on you (and you alone) ▪ You don't need to share with others ▪ Sometimes the only option if expensive or complicated equipment is needed for small niches (small batch production) ▪ Opportunities to make money on the side by selling research related services or products	▪ Success depends mostly on you (and you alone) ▪ You'll need to provide most of the money needed from within your organisation ▪ Many difficult conflicts with the research side of you organization to be expected ▪ Succes will often be smaller without the help of external capital	Weaknesses
Benefits	▪ Immediate returns for you ▪ No middle-men required	▪ All sorts of risk (see start-up) ▪ Additionally potential risks from legal difficulties (research entitiy active in a commercial fashion …)	Risks

Three Common Myths

Start-ups are the silver bullet of technology transfer and commercialization.

- High risks for getting your return
- Big money will get back to you only after many years (if at all)
- Political wishful thinking doesn't make for a good company

Selling or licensing IP frees the innovator from all the hassles involved with commercializing a technology.

- IP is of very early
- Efforts to convince prospective customers to acquire your IP need a similar understanding of markets and needs

R&D collaborations are dull and financially not attractive.

- R&D money from industrial sources is almost as good as licensing or sales income
- Typically it comes much quicker than other revenues
- Helps you leverage revenues with public grants focused on industrial R&D

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Why Do We Talk About IP?

„I want to protect my intellectual accomplishment and prevent others from commercializing my idea“

Industrial Property Rights – Regulating Different Interest Groups

Society
(State, advocacy groups)

Promotion of an innovative economic environment

Industrial property rights

Individual Company

Refinancing of research invest

Employee
Inventor

Recognition of inventive and creative contributions

Picture: Sebastian Bergmann (cc-by-sa 2.0)

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Why is IP Critical for Innovation?

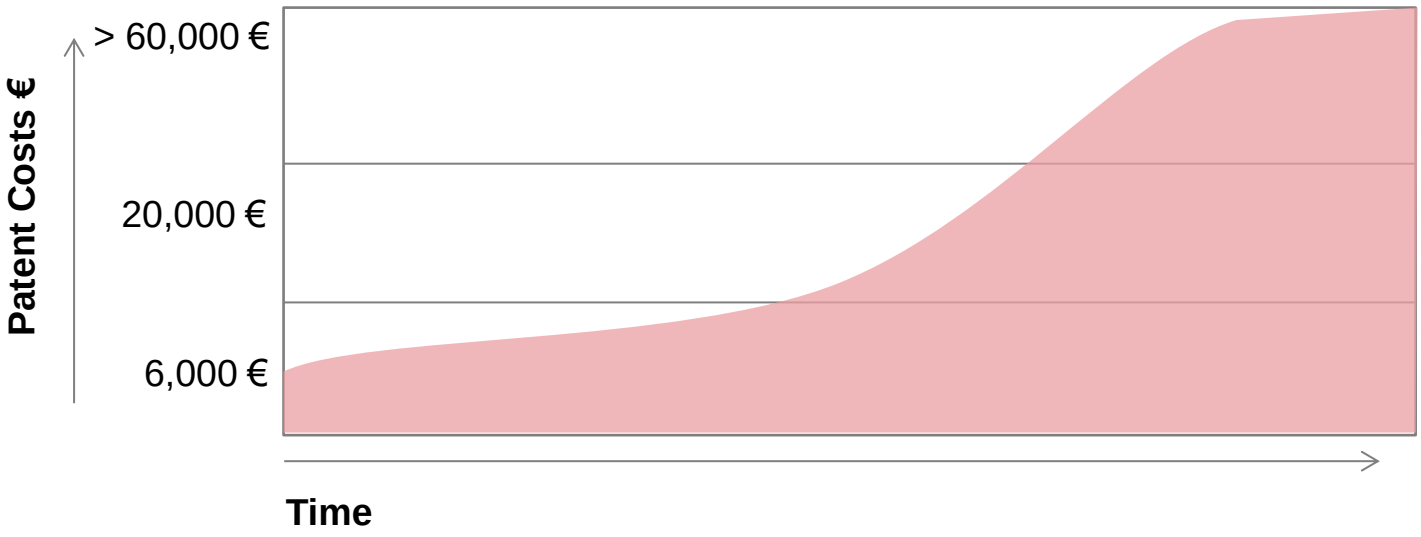
- Enforce against a competitor, **prevent the patenting** by someone else
- **Protect core idea** upon which the startup is founded
- Create and maintain a **competitive advantage**
- Increase leverage over partner or **remove roadblocks** by cross-licensing
- **Attract investors** or stimulate acquisition
- Use as **collateral to secure financing** by licensing patents to others
- Enhance **company reputation** amongst custom
- Create and protect **brand value**

→ Not for you as a research organization, but for your (industrial) customer!

Common Research IP Problems

- **Lack of big picture** / Innovation strategy
- Underestimate the importance of IP and **failure to create an IP strategy** early-on (what to protect, where to protect, …)
- Public speaking or **publication before patent application**
  → **public disclosure prohibits patents!**
- **Granting exclusivity** in critical fields too early and/or w/o strategy
- Not creating an **attractive IPR package** (interesting countries, possibility to add future IP, …)
- **Joint IP** without accompanying contract

Patent Expenditures



Average cost for European patent: 32,000 €

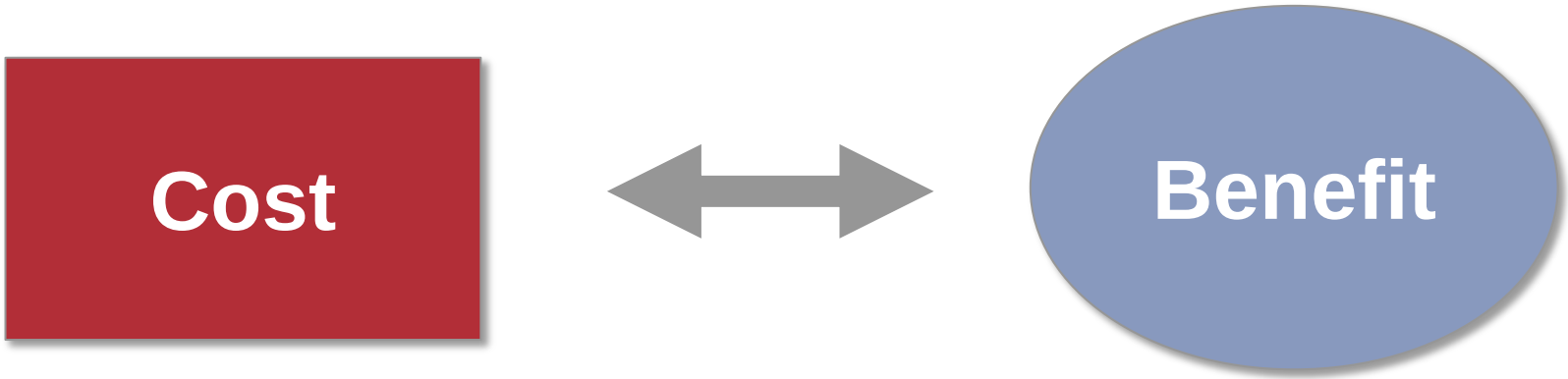
Average cost for US patent: 10,000$ - 30,000$

Annual Renewal fees (EPO for pending patent application): 500 € - 2,000 €

Renewal fees (US patent): 400$ - 16,000$

Nationalization in a number of countries may go into the 100,000's €

Value of a Patent



Important factors to consider

- Strength of your patent
- Efforts to identify a violation of your rights?
- Efforts to enforce your patent (legal action against violators)?
- How to circumvent your patent (easy / difficult)?

IP Matters: Success and Valuation

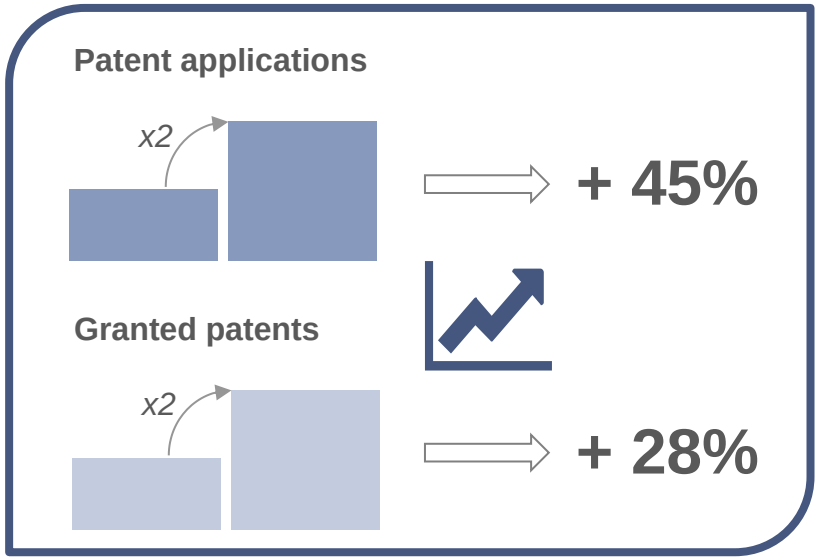
Intellectual Property has a substantial effect on:

A company's success

+51%	Patents are causally linked to start-up **sales**
+49%	First patent increases number of **subsequent patents** filed by the start-up
+153% **+84%**	Probability of **IPO** **Trade Sale** if granted a patent

Source: Farre_Mensa et al. (2015), *The Bright Side of Patents,* U.S. Patent and Trademark Office

An investors' valuation



Source: Greenberg, G. (2013). *Small firms, big patents? Estimating patent value using data on Israeli start–ups' financing rounds*. European Management Review.

Typical Situations

Earn Money

Licenses to 3rd parties
Legal protection might improve credibility
→ Protect in key markets
→ Add additional services

Increase reputation

customers - public funding sources - future cooperation partners
→ Protect as cheaply as possible

Keep competition at bay

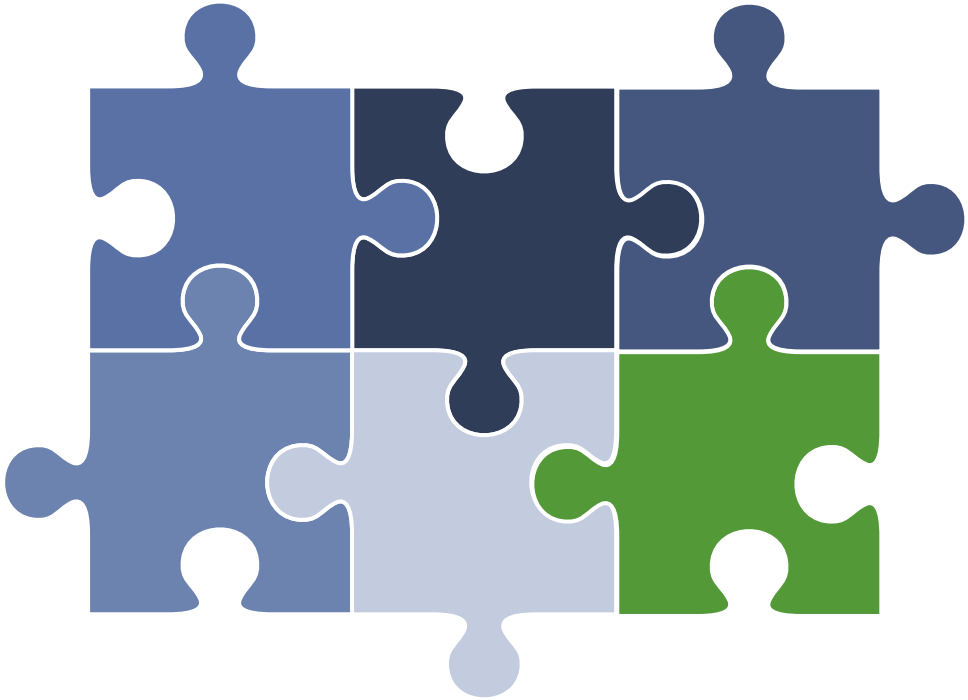
Prevent competition to use your technology or similar things
→ Protect in key markets

Defend against patent demands

Have relevant IPR “to return fire”

IP Rights - More Than Patents

Patents



Trade Secret
Restrictive constructive measures

Accelerated Development

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Open Source
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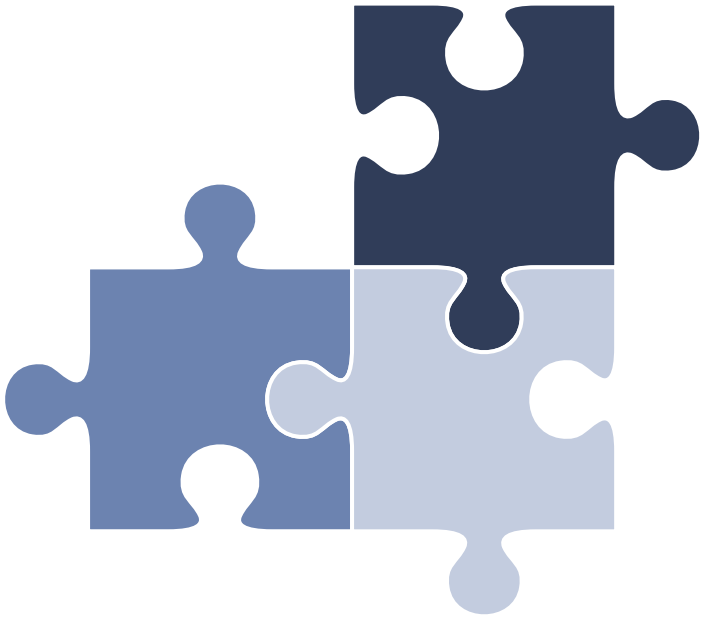
Heavy on Legal Protection

Patents



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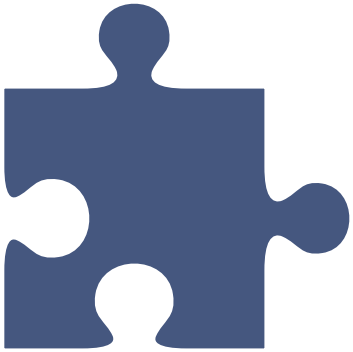
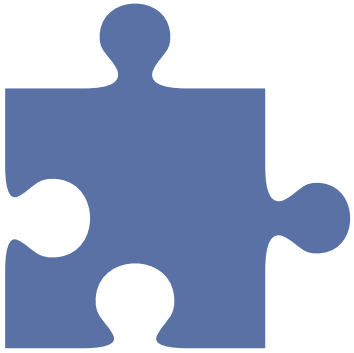
The Greyhound

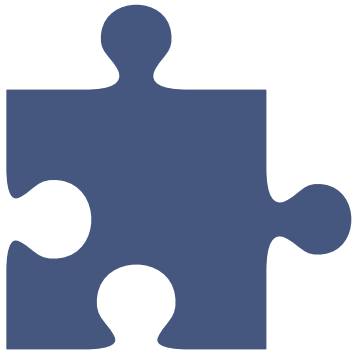


Accelerated Development

The Smart Greyhound

Trade Secret
Restrictive constructive measures





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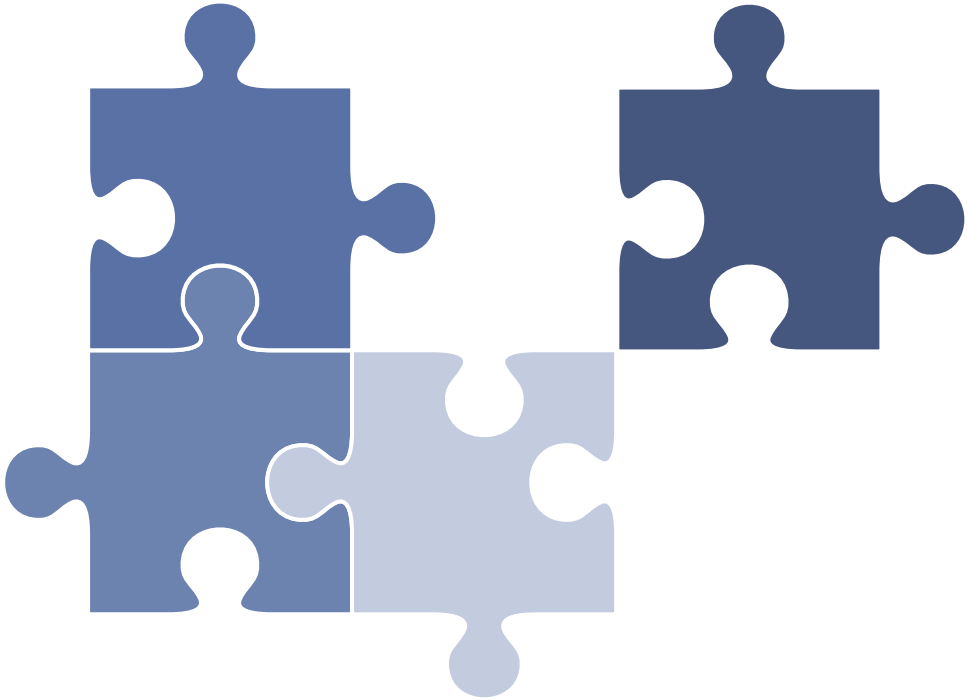

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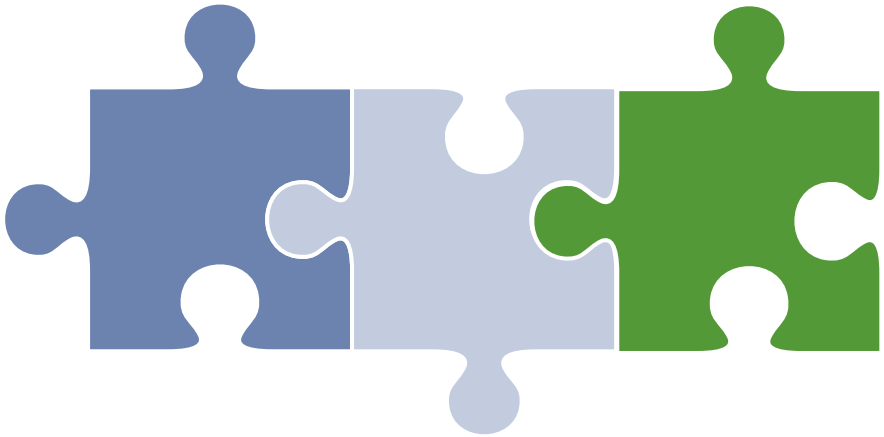
Open Source / Community Approach



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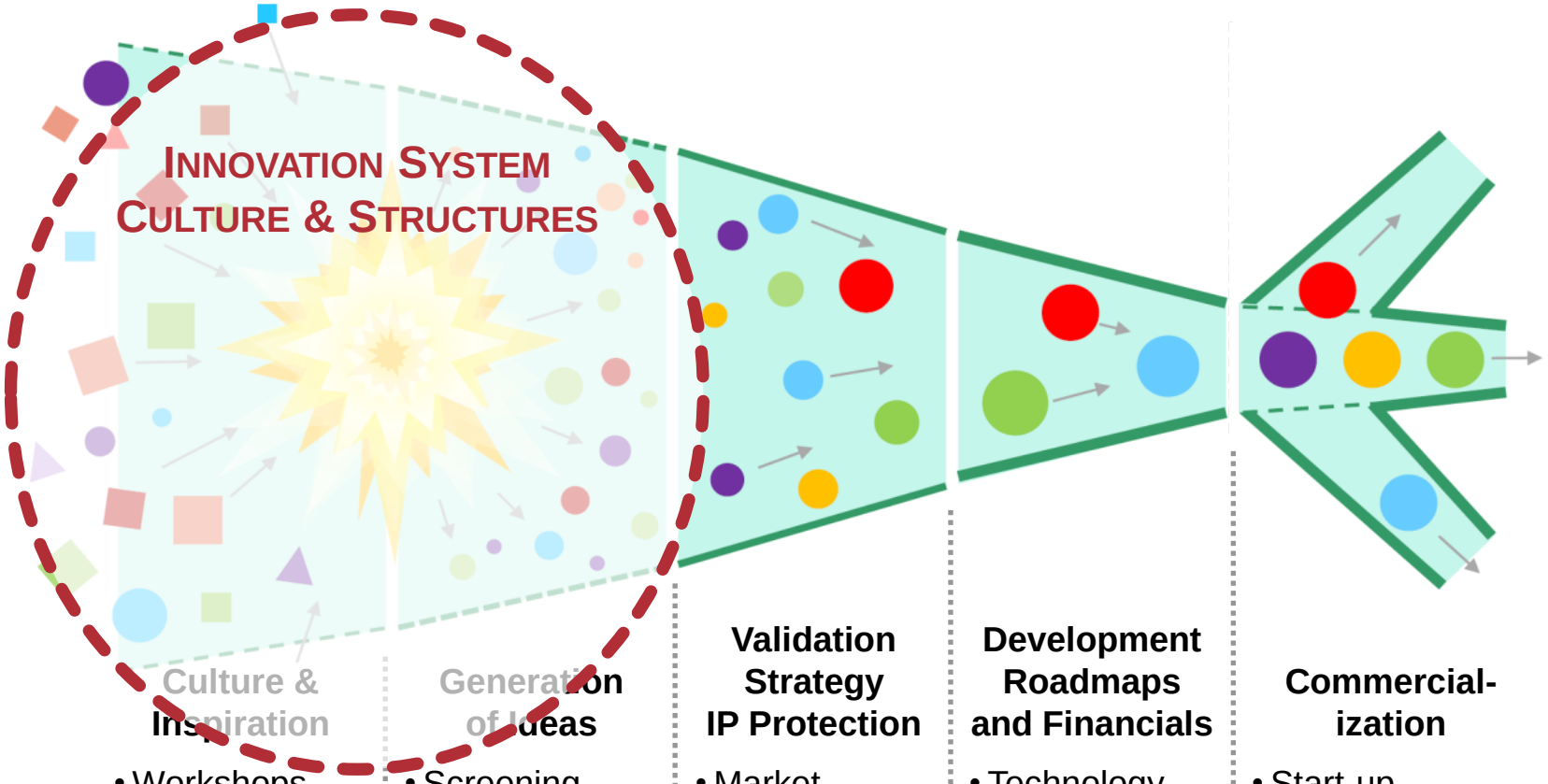
How to Fill and Process the Pipeline of Innovative Ideas?



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Generation of Ideas

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Development Roadmaps and Financials

- Technology-Roadmap
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Key Factors for a Powerful Innovation System

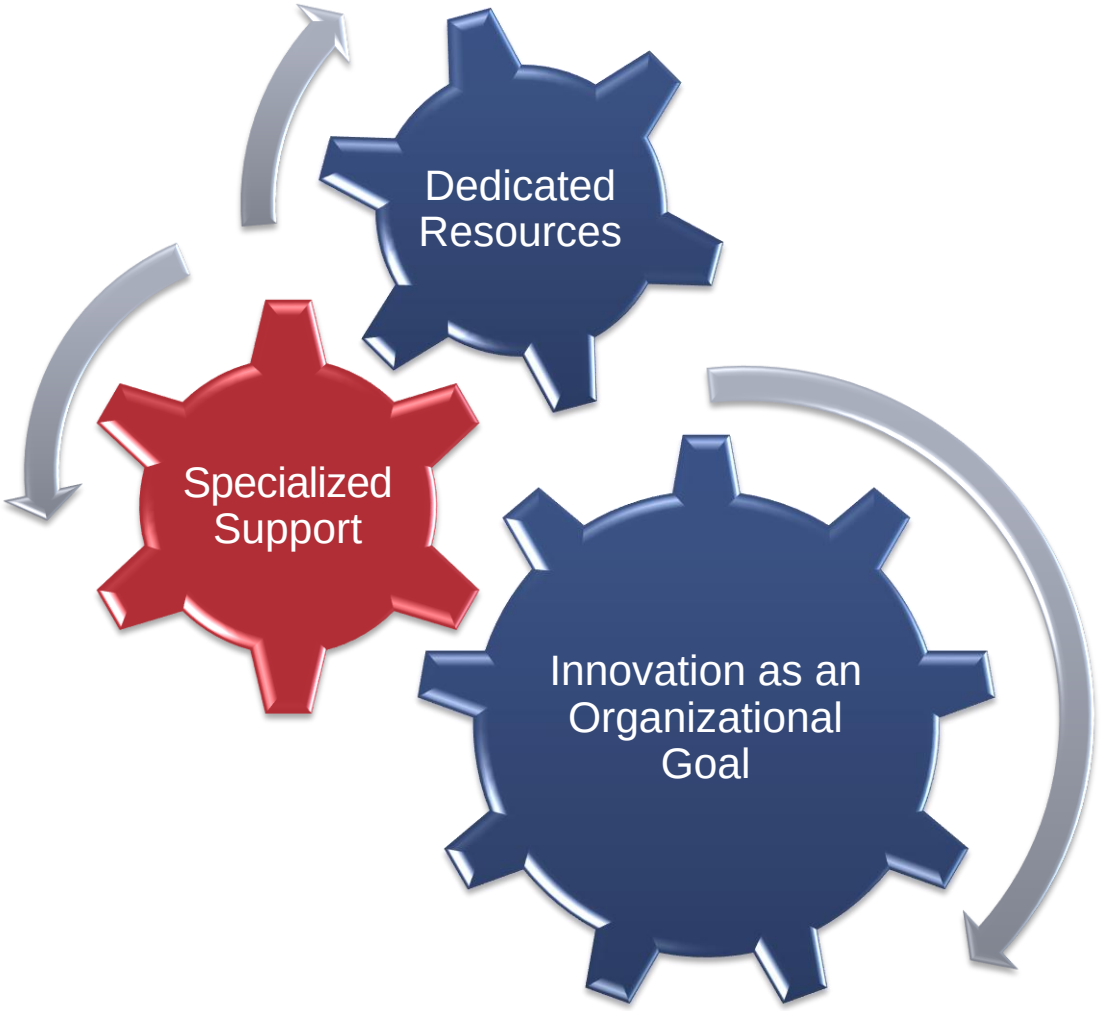
Innovation as an Organizational Goal

- Innovation needs to be a clear and explicit organizational goal
- Equal to research and teaching

- Not only in writing but wholeheartedly!!
- Leadership needs to support and live this goal
- Management & controlling systems, and performance indicators need to reflect this
- Role models help a lot

- Hire people accordingly!

Specialized Support



- Specialized unit within your organization to support innovation
  - Alternative opinion and feedback
  - Commercial support
- Tasks are
  - Technology Screening
  - Validation / Market Analysis
  - Commercialization Strategies
  - Fundraising
  - IP Protection
- Its not (only) about money and # of staff, but about attached importance

Dedicated Resources

- Dedicate resources to innovation tasks
- For support structure
  - that way you communicate “this is important to me”
- For innovation fund
  - needed for technical validation
  - Don’t make it too big, you would only attract the wrong people
  - Make it quick and flexible instead

Questions & Comments

Upcoming Webinars

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- December 2017, webinar 3:
  Exploitation strategy in RDI collaborative projects
  Part 1: overview, implementation steps, exploitation plan
  (case example: Horizon 2020 research and innovation project)

- Feb/March 2018, webinar 4:
  Exploitation strategy in RDI collaborative projects, Part 2

- May/June 2018, webinar 5:
  Engaging in academia-industry collaboration

- January 2019, webinar 6:
  Internationalization of RDI activities
  Exploring the models of international innovation partnerships

Contact

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