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# Bringing Investors to R&D and Innovation Exploitation

## Closing the “last mile” in the Innovation Process

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Prof. Dr.-Ing. José L. Encarnação

Chairman  
*INI-GraphicsNet Foundation*

and Professor  
*Technical University of Darmstadt  
Department of Computer Science*

Tel.: +49 (6151) 155-130  
Fax.: +49 (6151) 155-599  
Email: [jle@ingraphics.net](mailto:jle@ingraphics.net)  
<http://www.ingraphics.net>



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The Future of Science and Technology in Europe

Lisbon, Portugal; 8-10.10.2007

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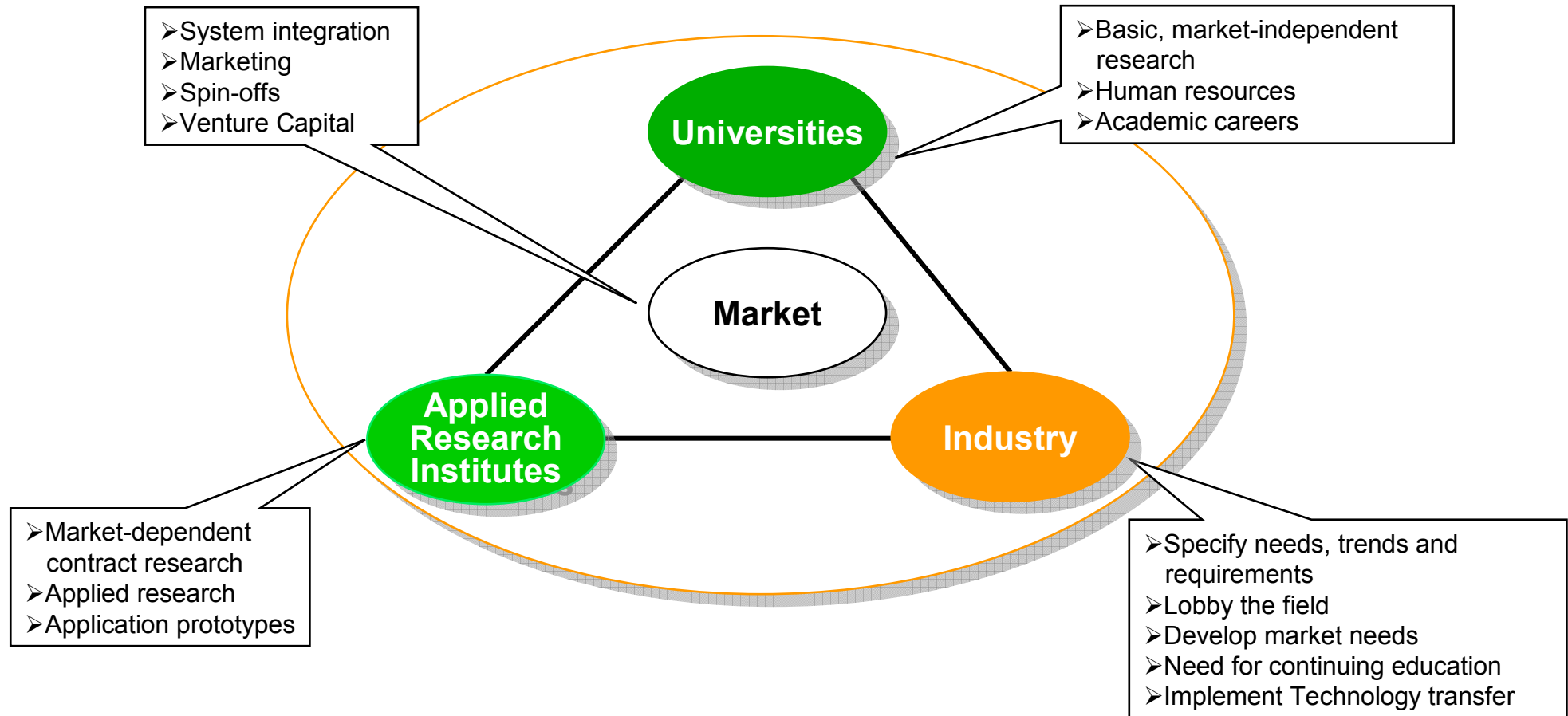
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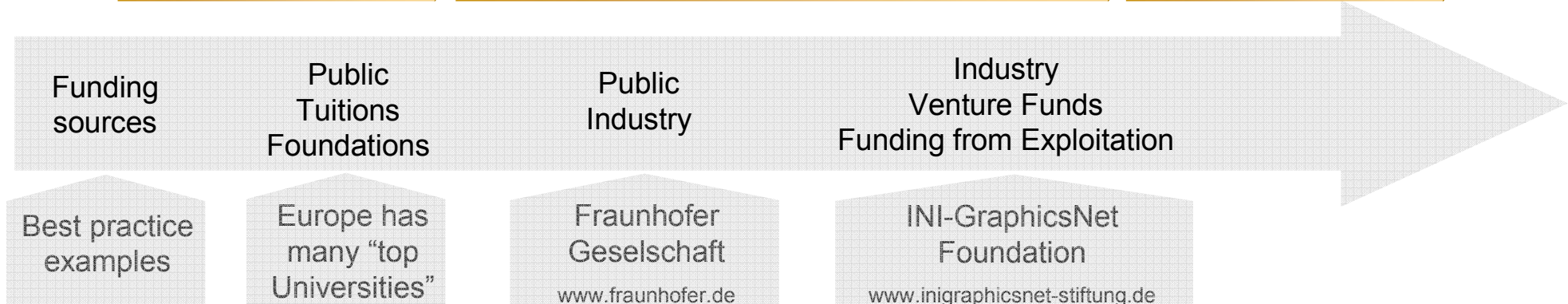


# The Innovation Process

# The “Key Players” in the Innovation Process



# From Research and Education to Marketing & Sales: The Innovation Process



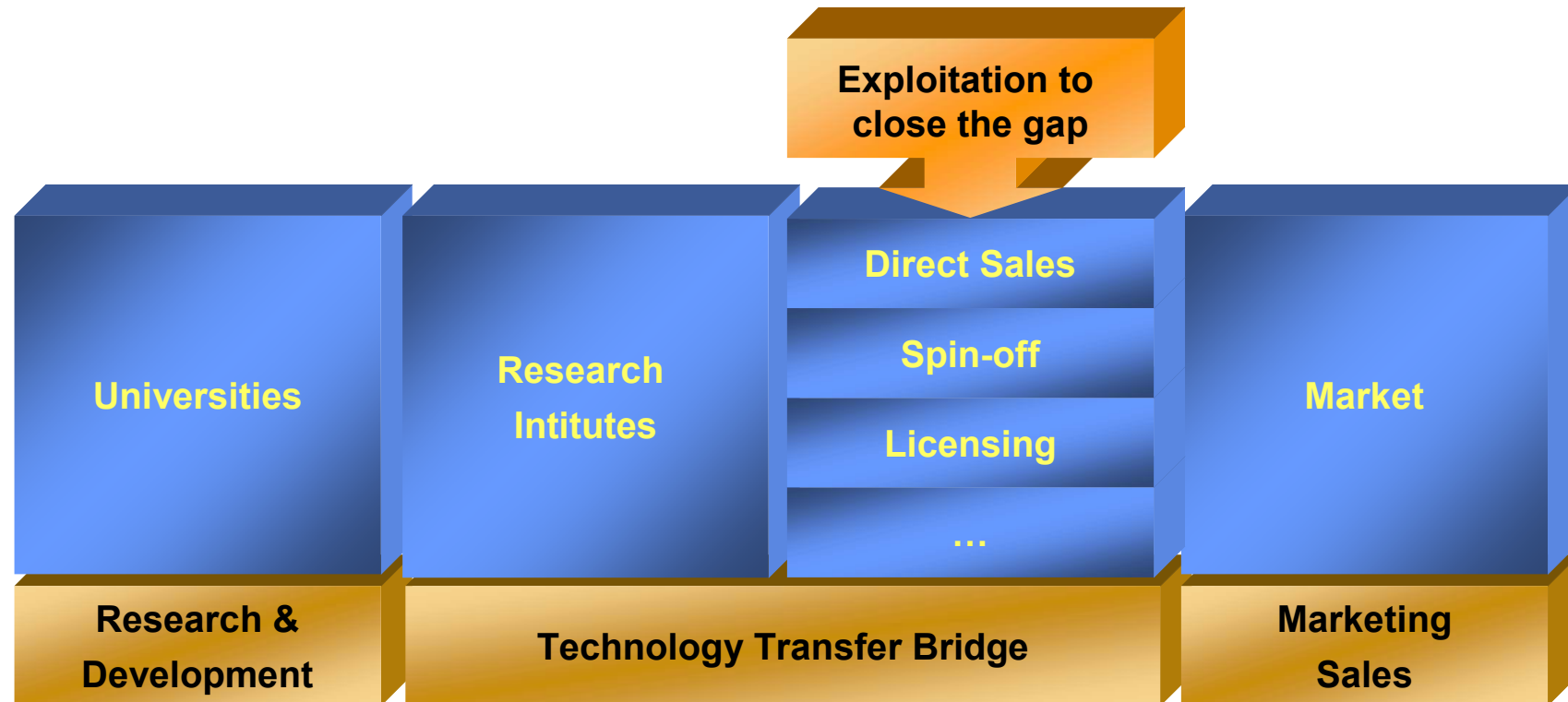
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# From Research and Education to Marketing & Sales: The Innovation Process

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A person is shown in silhouette, reaching their right hand up towards a large, glowing sphere. The background is a dark, textured blue-grey color. The overall mood is one of aspiration and scientific inquiry.

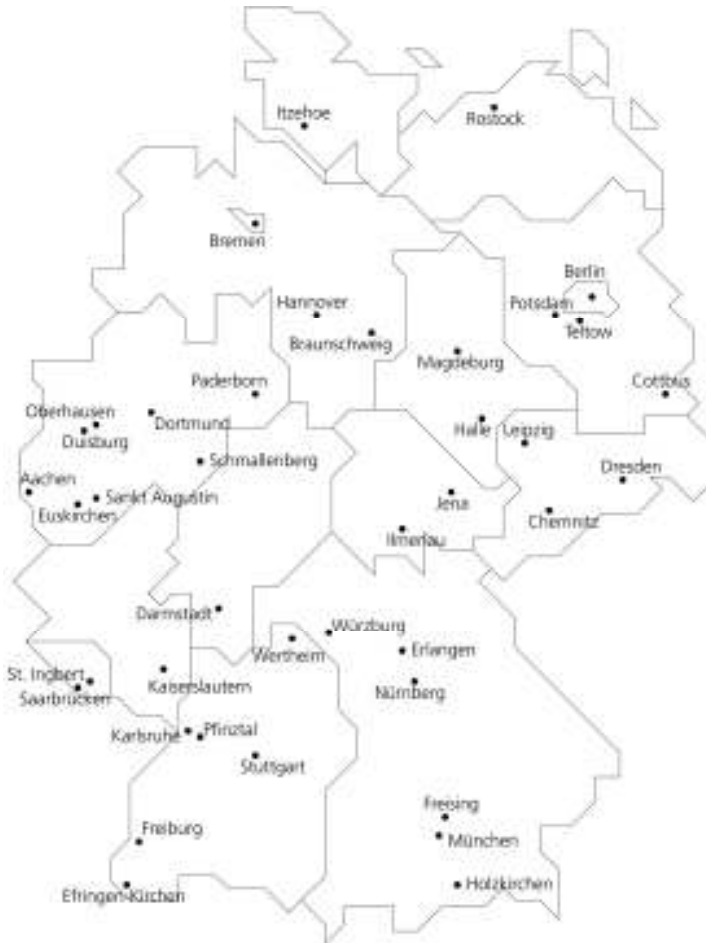
# Fraunhofer Gesellschaft

a “best practice” example  
for applied R&D



# Fraunhofer Gesellschaft (FhG), Germany

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- 56 Institutes
- 1.692 Mio € Turnover
- 12775 Employees



# Fraunhofer-Gesellschaft business development 2002-2006

	2002	2003	2004	2005	2006
Total business volume (cash basis) in € million (operations and capital expenditure)	1074.6	1048.4	1069.2	1252.7	1186.4
Change	8%	-2%	2%	17%	-5%
Total assets/total equity and liabilities in € million	1190.8	1183.2	1277.5	1548.4	1692.3
Change	1%	-1%	8%	21%	9%
Breakdown of expenditure in % <sup>1</sup>					
Personnel expense ratio	47	50	50	48	49
Non-personnel expense ratio	32	32	31	29	31
Capital expenditure ratio	21	18	19	23	20
Breakdown of revenue in % <sup>2</sup>					
Total	62	61	63	66	68
Industry	30	31	34	40	39
Public sector <sup>3</sup>	32	30	29	26	29
International	9	9	10	9	12
EU <sup>4</sup>	4	4	5	4	5
Employees <sup>5</sup>	12,875	12,750	12,450	12,400	12,775

# Fraunhofer Gesellschaft (FhG)

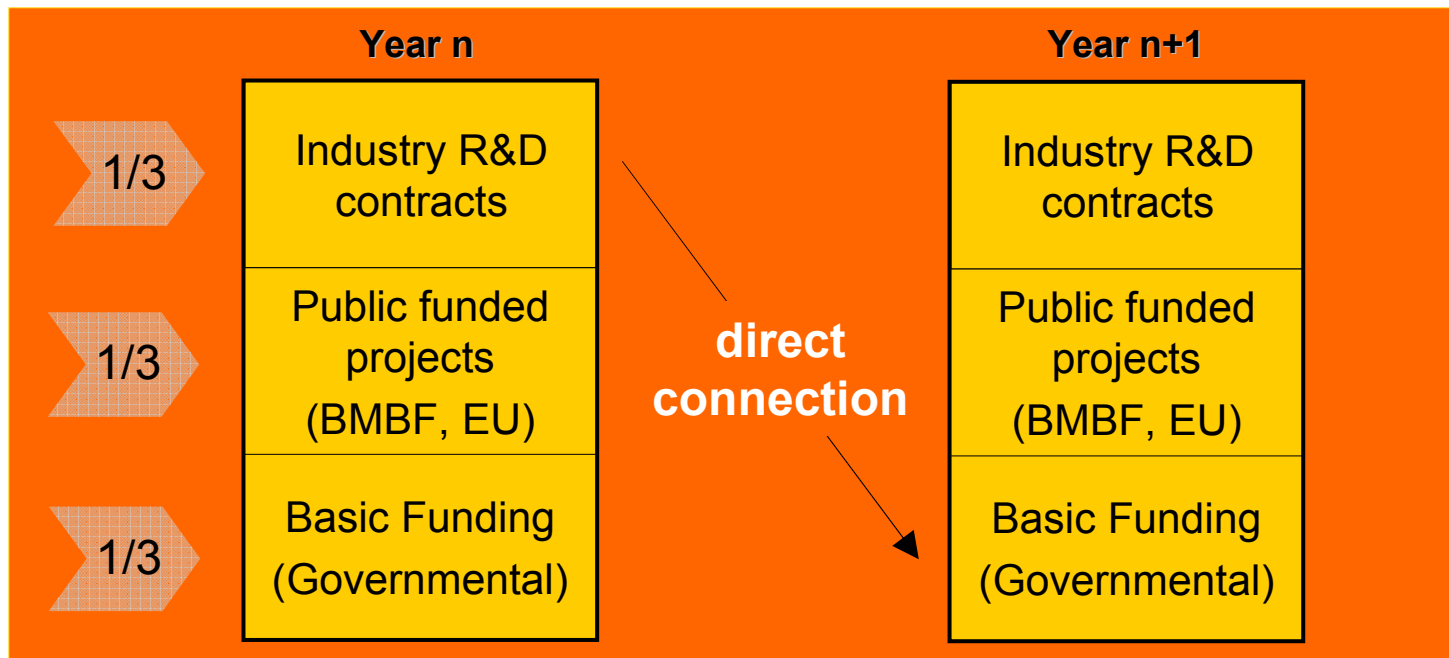
## A “best practice” example for applied contract research

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**Model:** Innovation Accelerator

Outsourced Research from Industry (specially SME) strongly connected to Universities

### Business Plan



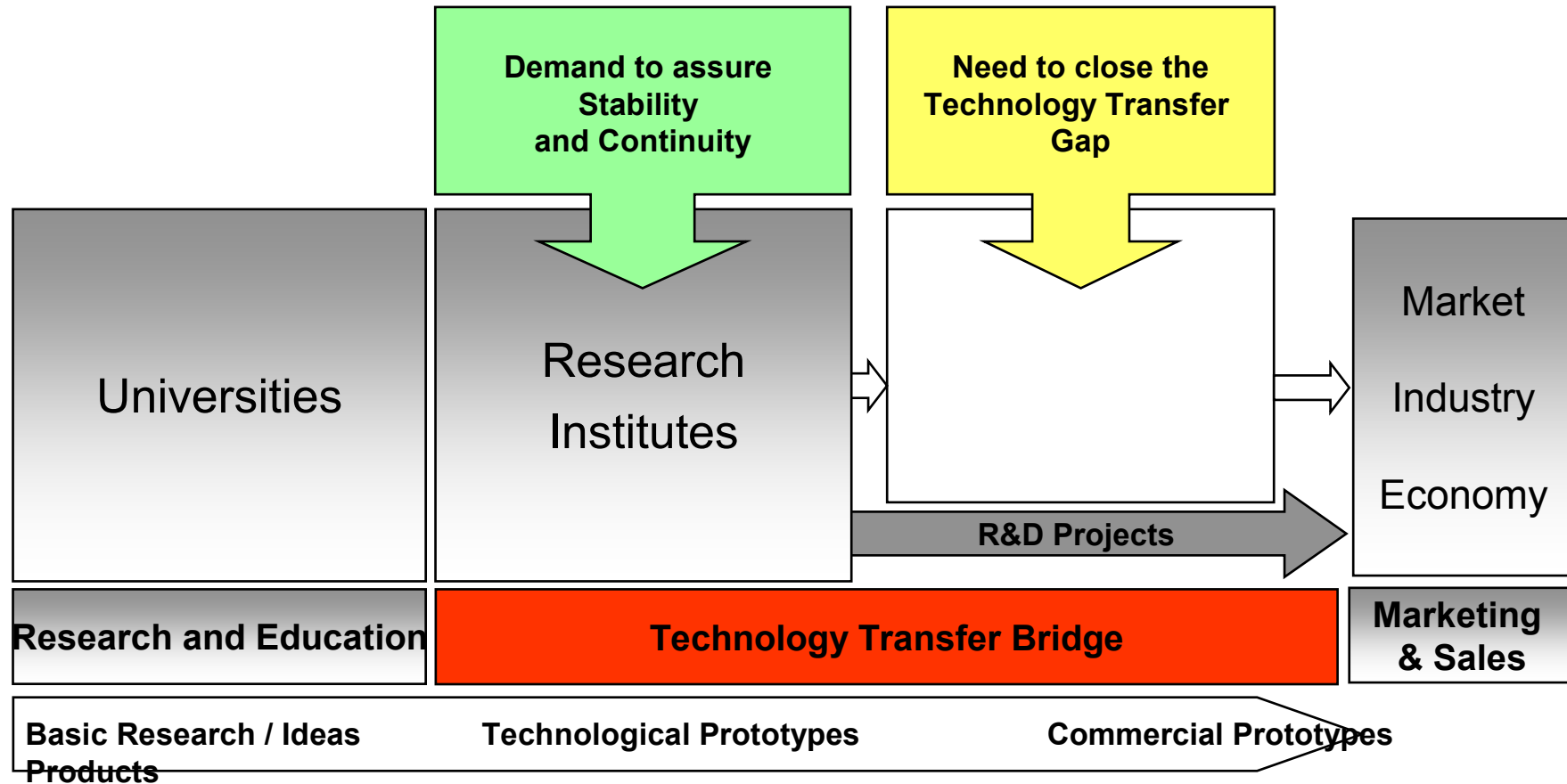




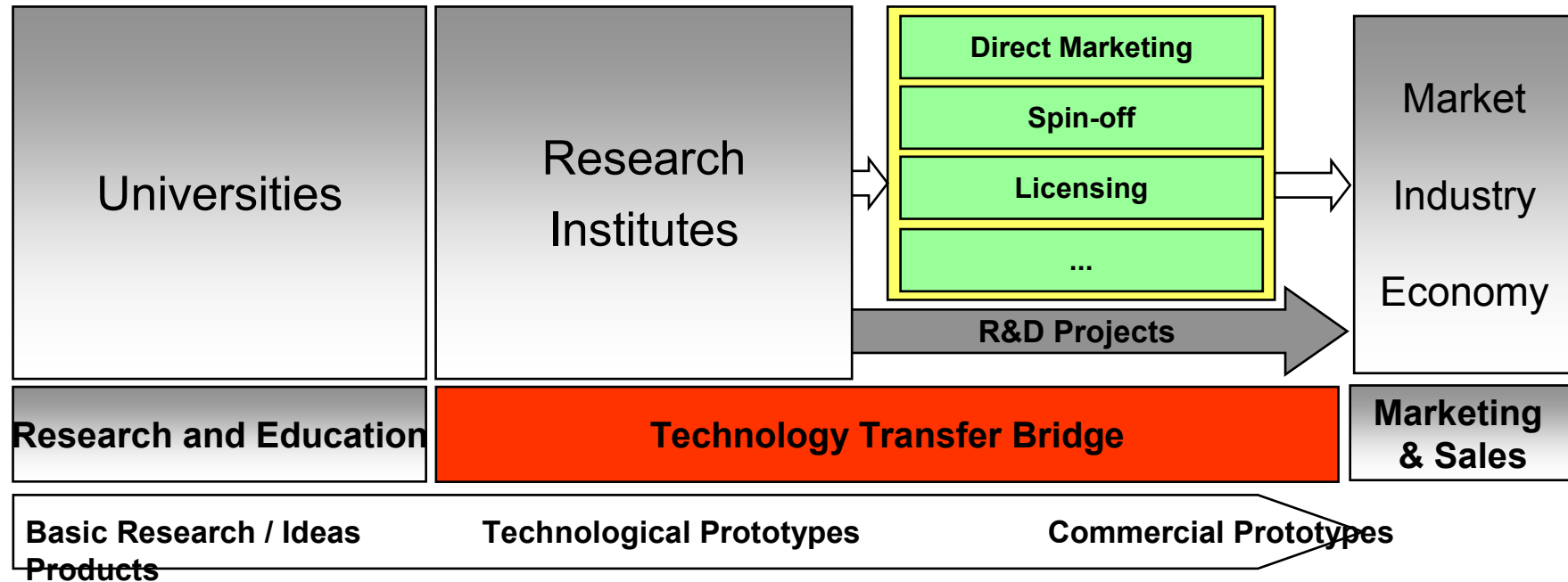
# The Technology Transfer Bridge



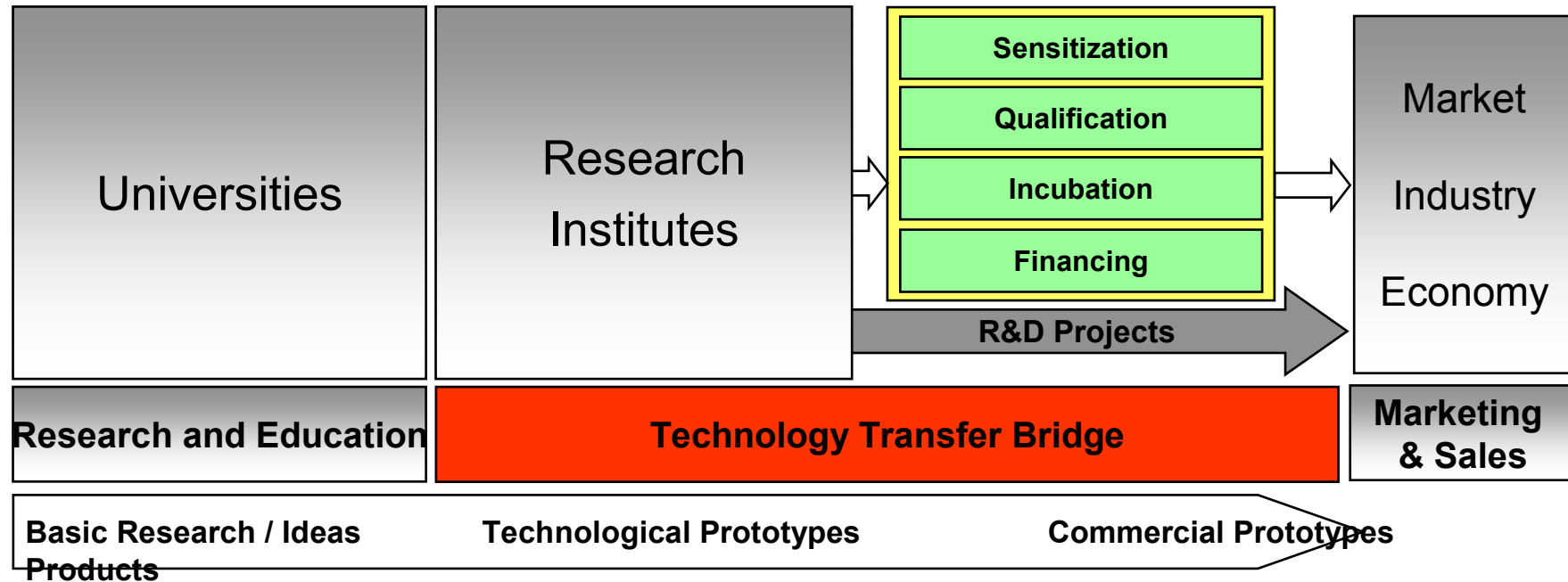
# Transfer of Research Results – The Gap



# Transfer of Research Results – Instruments



# Transfer of Research Results – Measures







# Globalization in Applied R&D

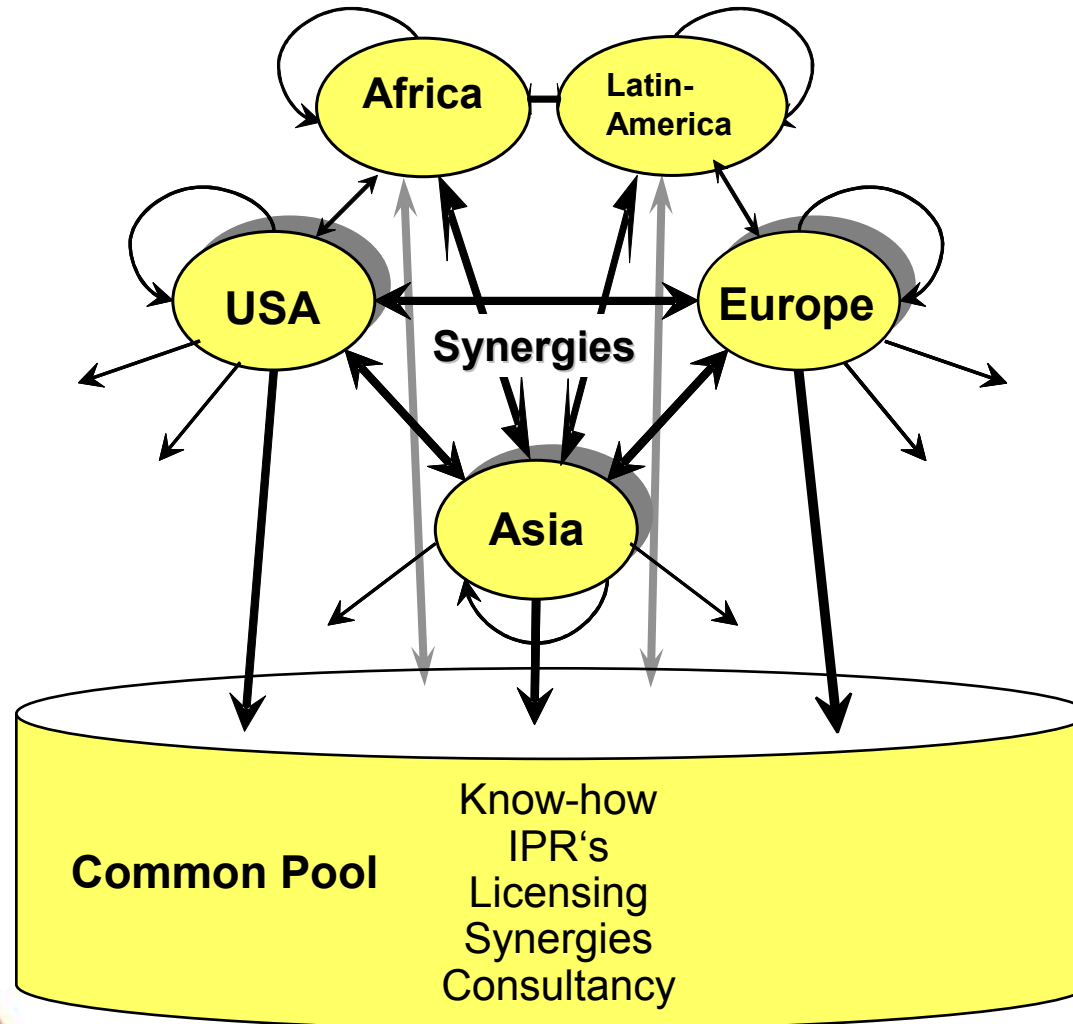
# Driving Forces of Innovation: Other Countries' Money

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- Intrinsically, the **conversion of someone else's money to your outputs** is just as efficient as the conversion of your own money to your outputs.
- The degree to which you can take advantage of the other country's money is **dependent on the degree of sharing**.
- In many cases, **sharing your R&D** – through trade, publications, patents – as openly as possible makes sense – you give away only what is in your country – but **you can theoretically get back the sum of what is in all other countries**.
- Finally, we begin to understand why simply **increasing R&D expenditures in our own region does not instantly or even reproducibly lead to economic growth**.
  - o US Congressional Budget Office tried to predict future economic growth based on past history of domestic R&D investments and failed
  - o Missing factor may well have been foreign countries R&D investments

Source: Merrilea J. Mayo, Tech. Transfer Conference, Washington DC, February 15, 2007

# Applied R&D is Global



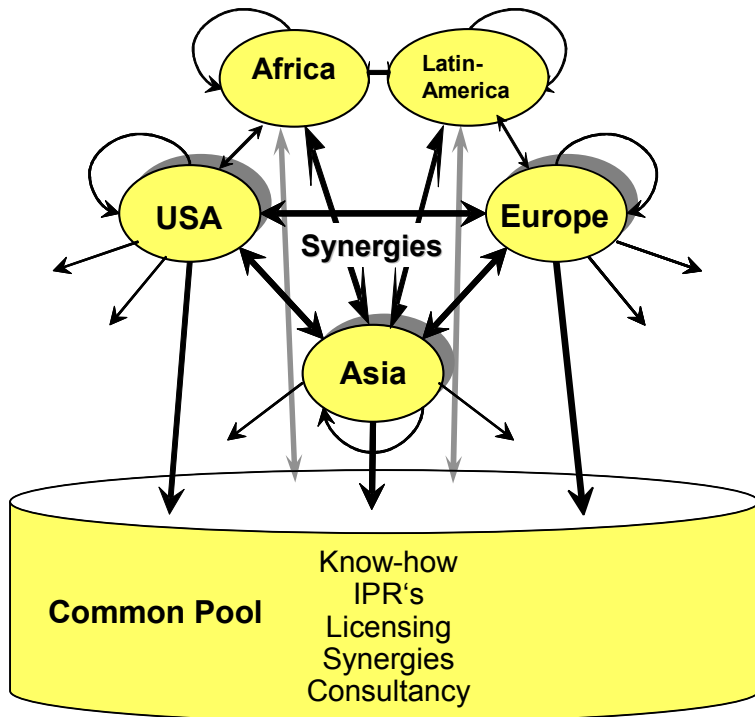
- Local R&D projects &
- Global cooperation

- Economy of Scale
- Time to result
- Time to market



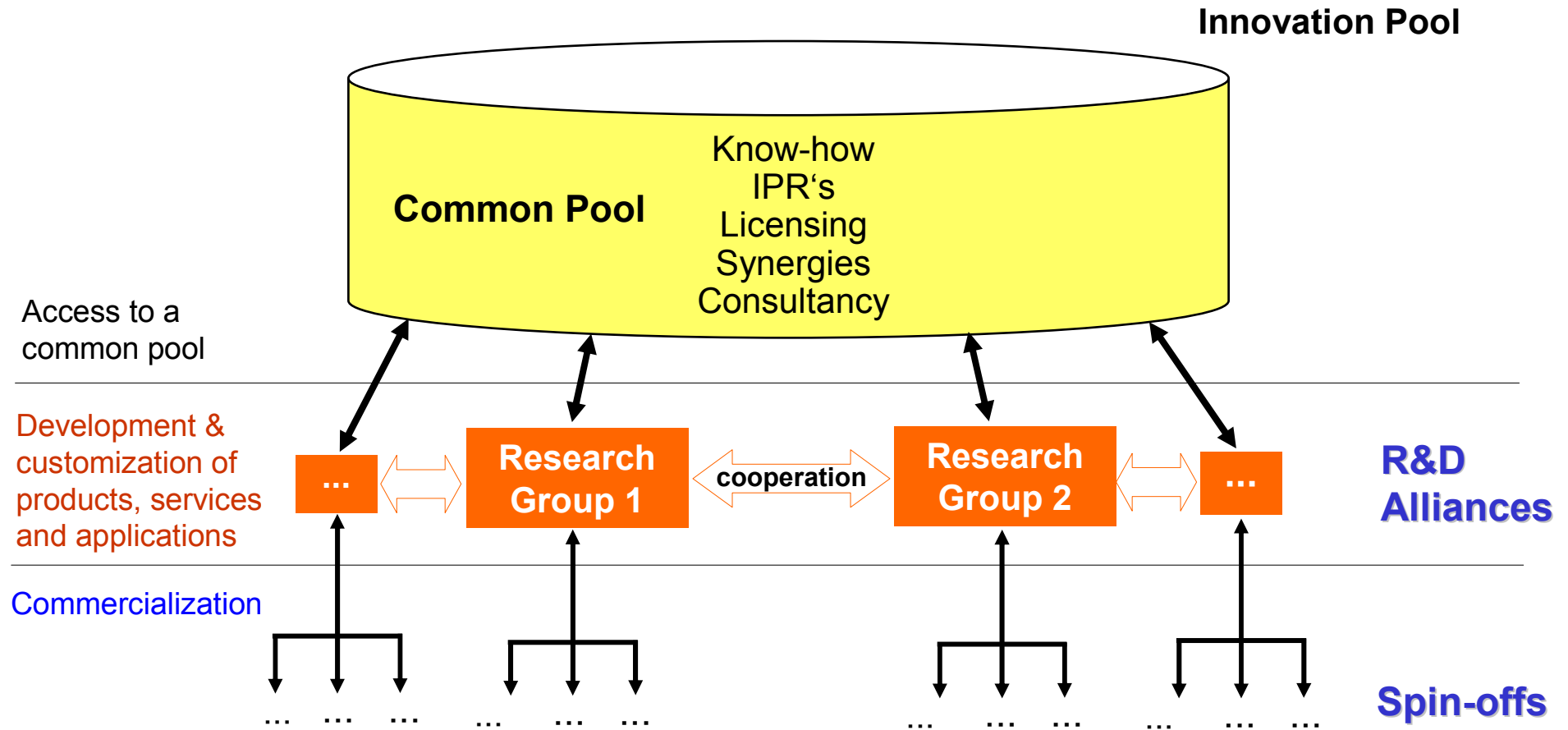
# Funding Sources

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- ⇒ Funding coming from national (local) R&D programs (“other countries money”),
- ⇒ Funding coming from International R&D programs (for example EU), or
- ⇒ Contracts from Industry funded by technology and service providers, by solution providers and/or by users.

# Opening Opportunities for Commercialization





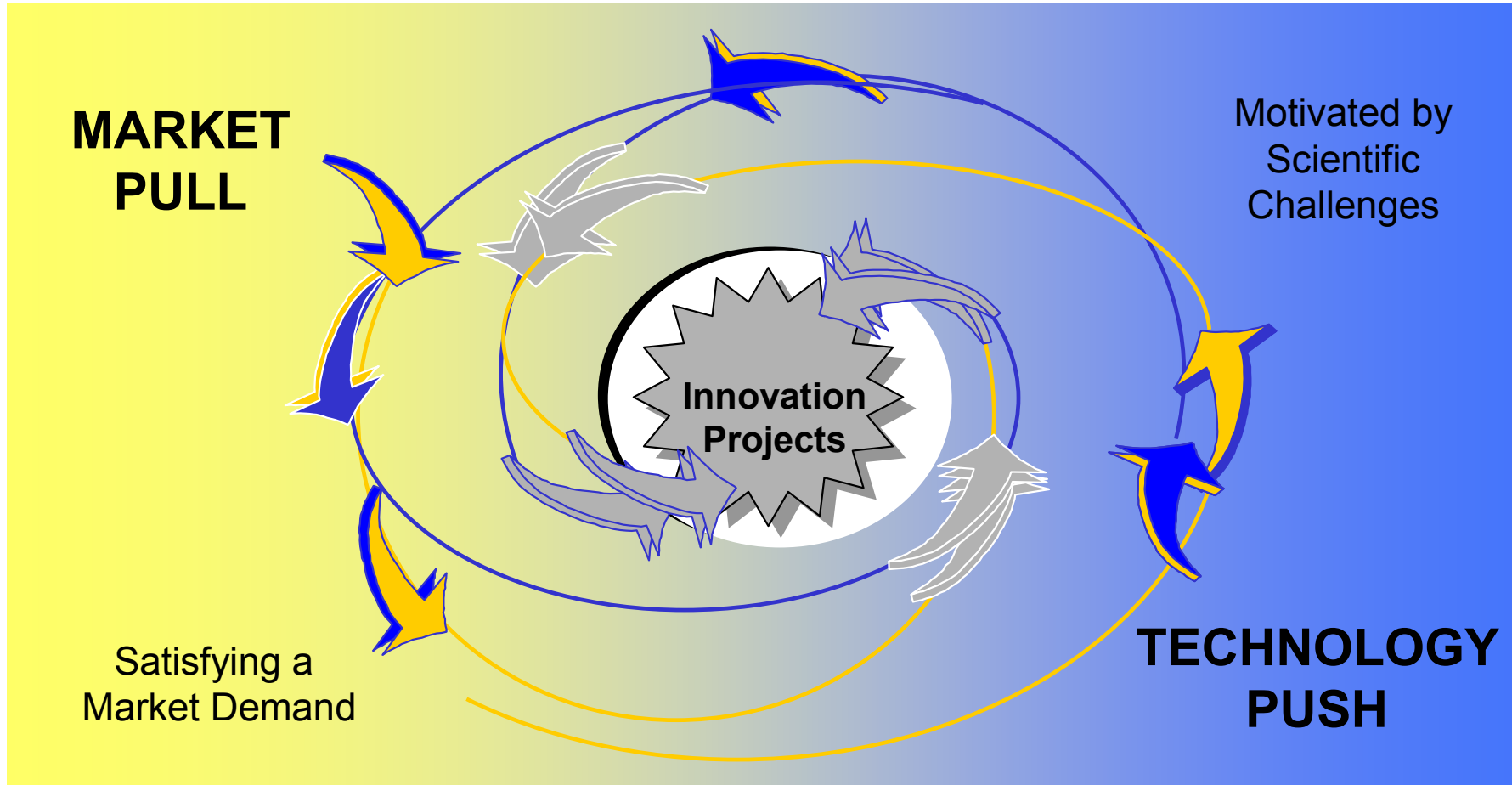
A conceptual illustration featuring a human brain on the left and a hand on the right. The hand's index finger points towards a specific, glowing yellow-green spot on the brain's surface. The background is a dark, textured blue with a fine grid pattern. The overall image conveys the process of identifying and acting upon a specific idea.

# From Generating Ideas to Exploitation



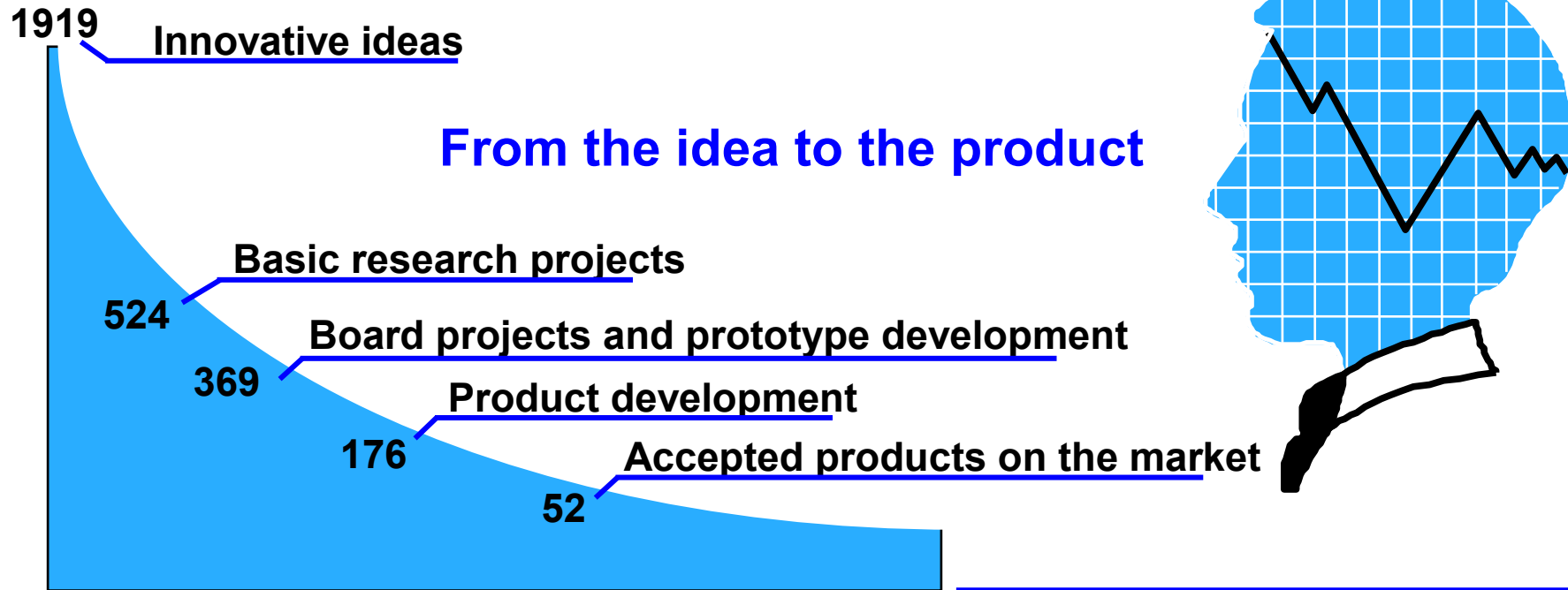
# The Challenge

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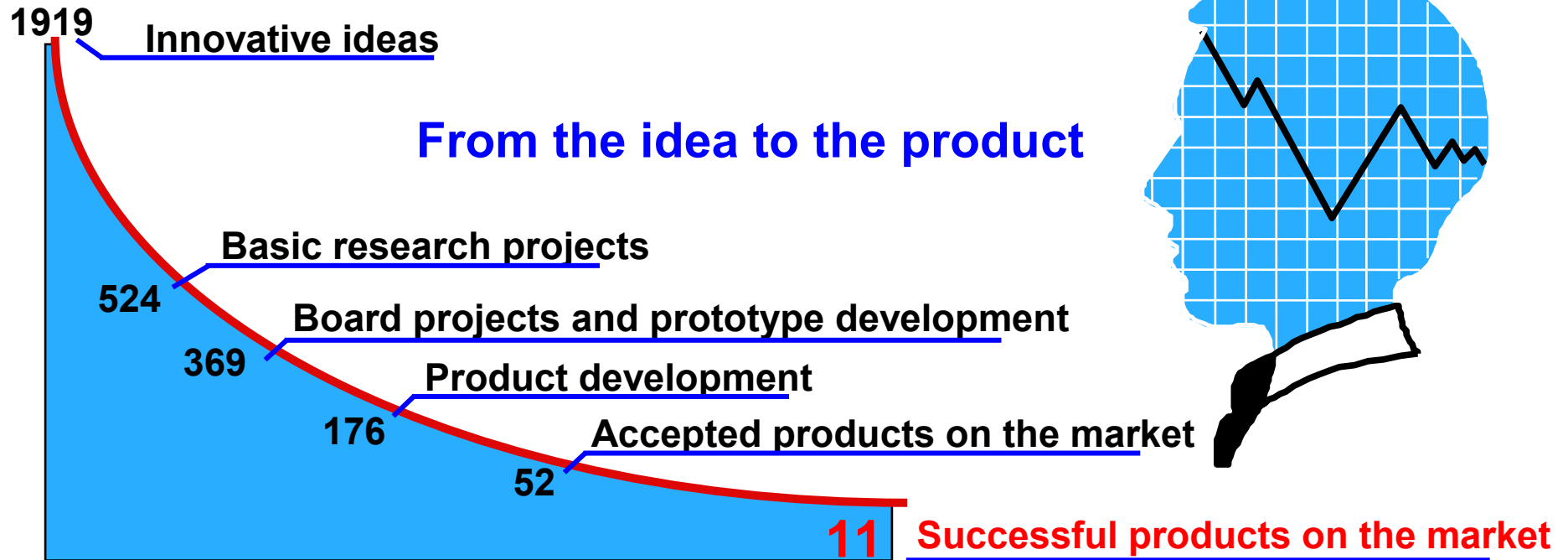
# From generating Ideas to Exploitation

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Source:  
Kienbaum

# From generating Ideas to Exploitation

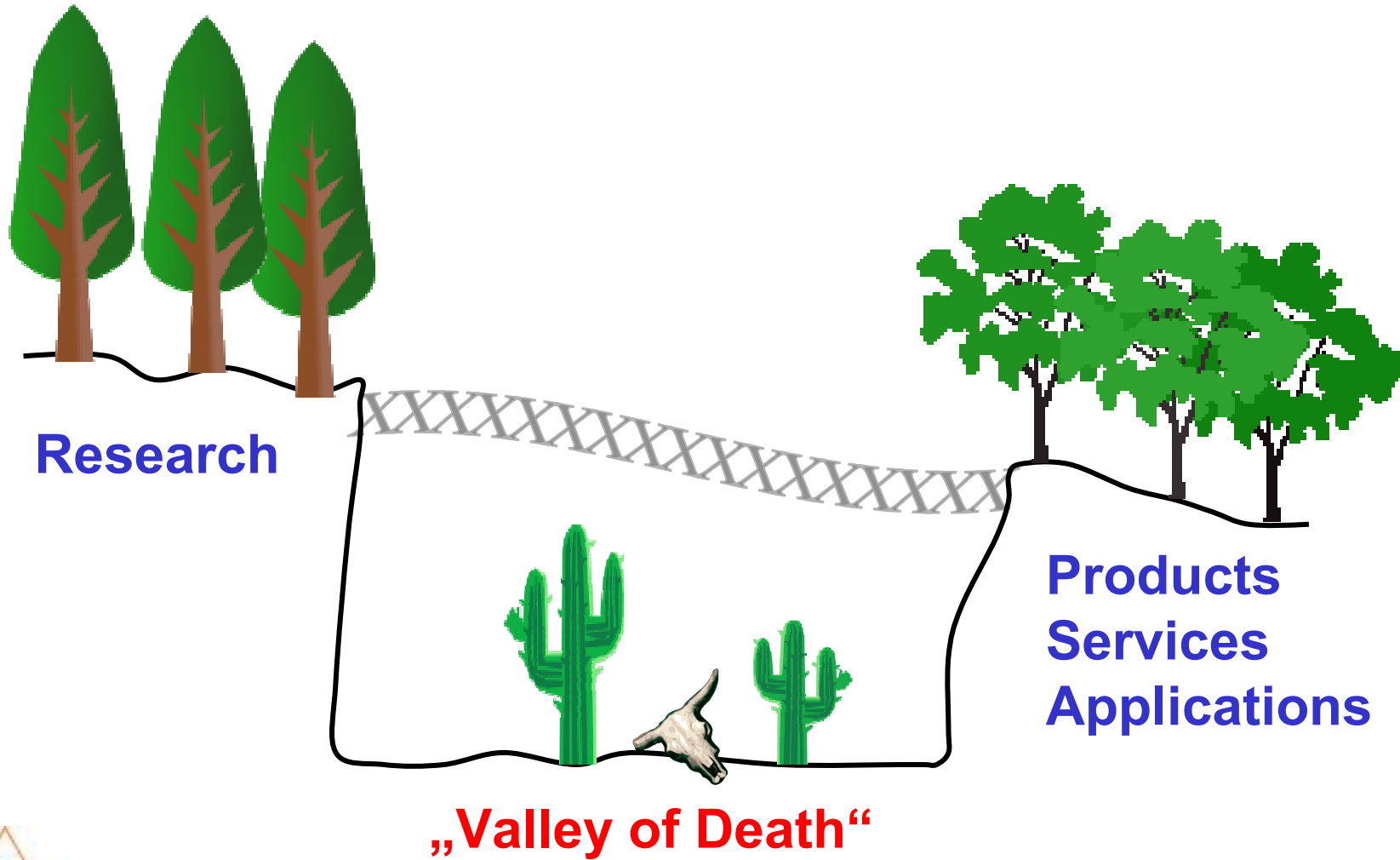


**You have to kiss many many frogs,  
to find the one and only prince!**  
Arthur Frey, 3M, Inventor of Post-it

Source:  
Kienbaum

# The “Valley of Death”

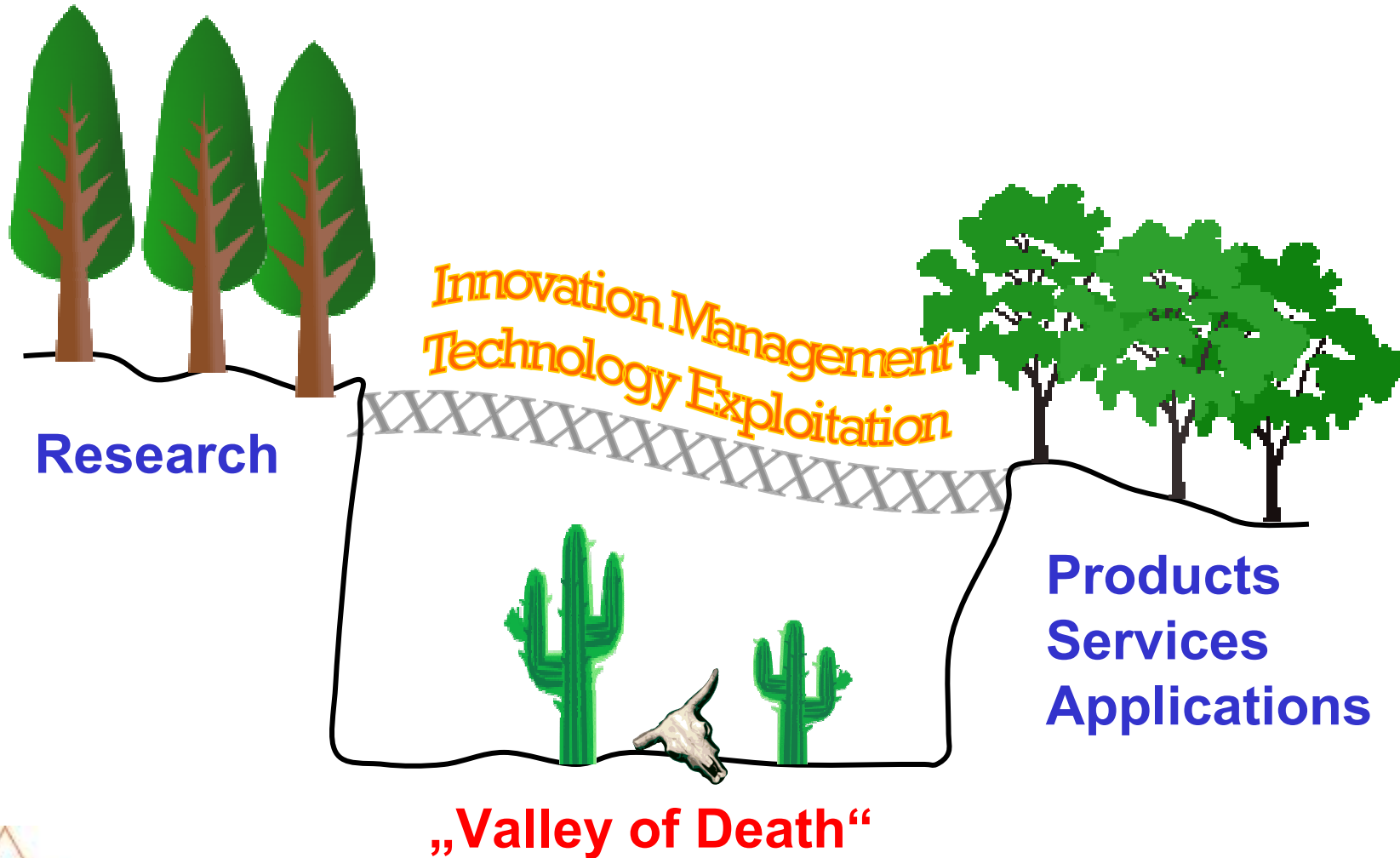
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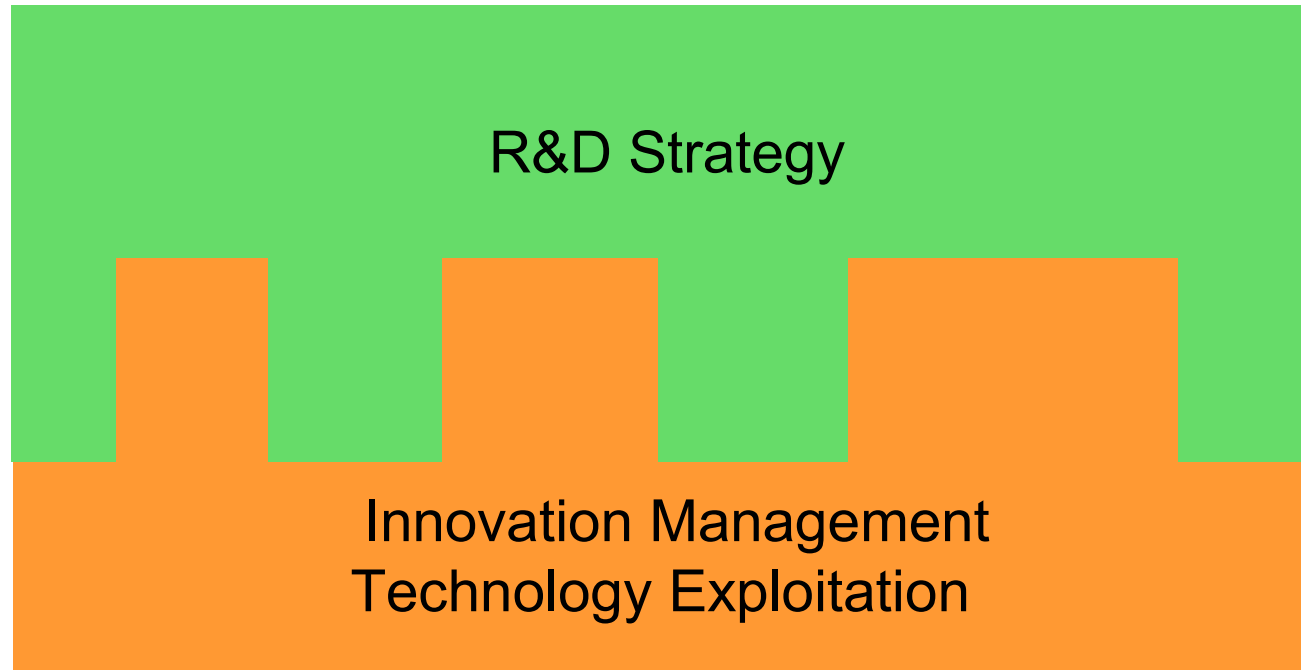
# The “Valley of Death”

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# From generating Ideas to Exploitation

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Innovation reinforced by a “shake hands” between R&D strategy, Innovation Management and Technology Exploitation

# From generating Ideas to Exploitation: Need for Technology Screening

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