

CENCE/EIFN conference

Innovation investment in the energy sector: risks and barriers

Bilbao, April 4-th 2008

*S. Galant
CEO, TECHNOFI
President, Greenovate!Europe*



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Outline

- ❖ Facts and figures
- ❖ Market failures for innovation investment in Europe: the case of SMEs
- ❖ Can public support correct for market failures in the energy sector ?
- ❖ What's next ?
- ❖ Conclusions



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Outline

❖ Facts and figures



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Facts and figures

- **Innovation:** the process of developing, industrializing and profitably selling the products or services which may benefit from scientific and technology research.



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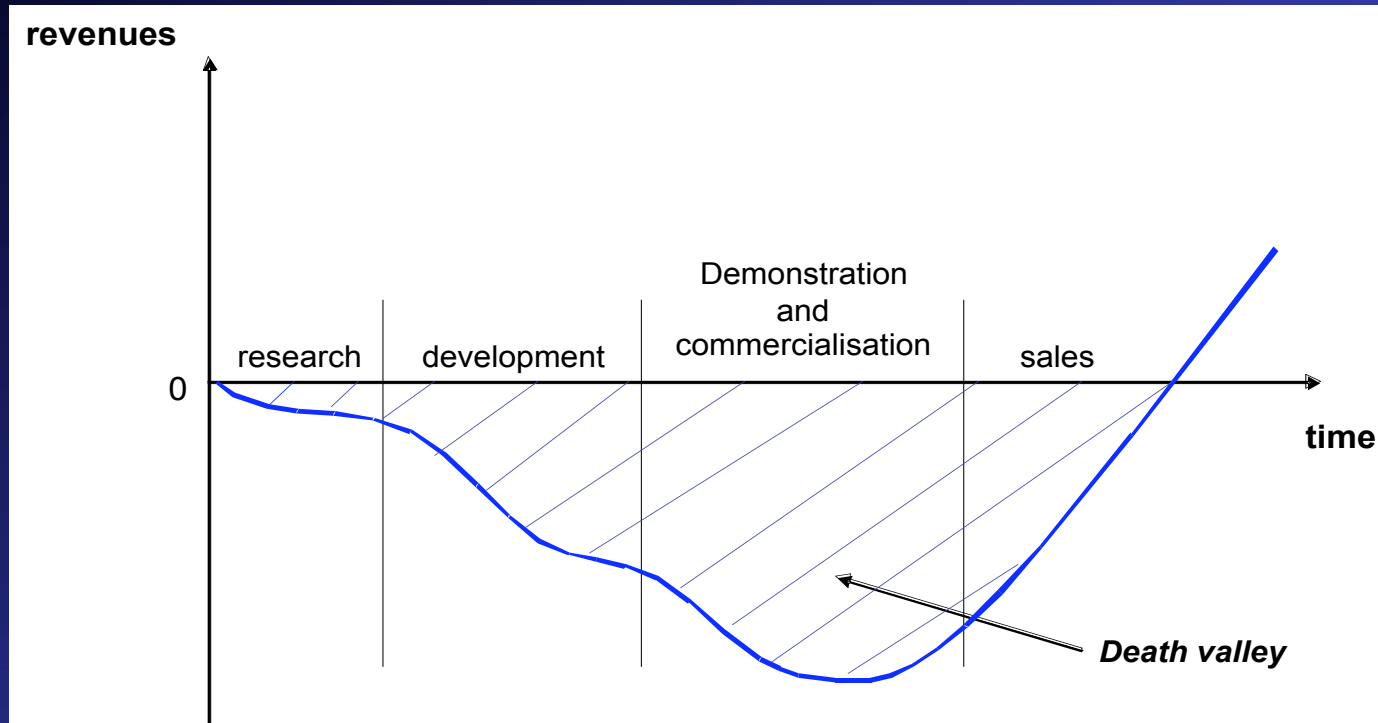
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Facts and figures



**Investing in innovation is a risky business....
..but doing nothing is an even bigger risk !**

Facts and figures

- ❖ **Technical risk:** probability that the technology development meets its initial target on time and within budget ?
- ❖ **Commercial risk:** probability that competitors' and/or consumers' responses go against the innovative business model under scrutiny ?
- ❖ **Credit risk :** probability that a company meets the payment of debts in accordance with the terms of debt contracts ?
- ❖ **Management risk:** probability that a management team can face adverse situations **and** ensure cash flow generation ?

Facts and figures

- Innovation is **the most critical process** of any industrial enterprise worldwide¹
 - Innovation has demonstrably led to superior growth performances in the USA and Japan
 - Europe does not rely enough on innovation-based growth

¹ B.Jaruzelski et al., *Strategy+ Business*, Issue 41, Winter 2005, p 40

Facts and figures

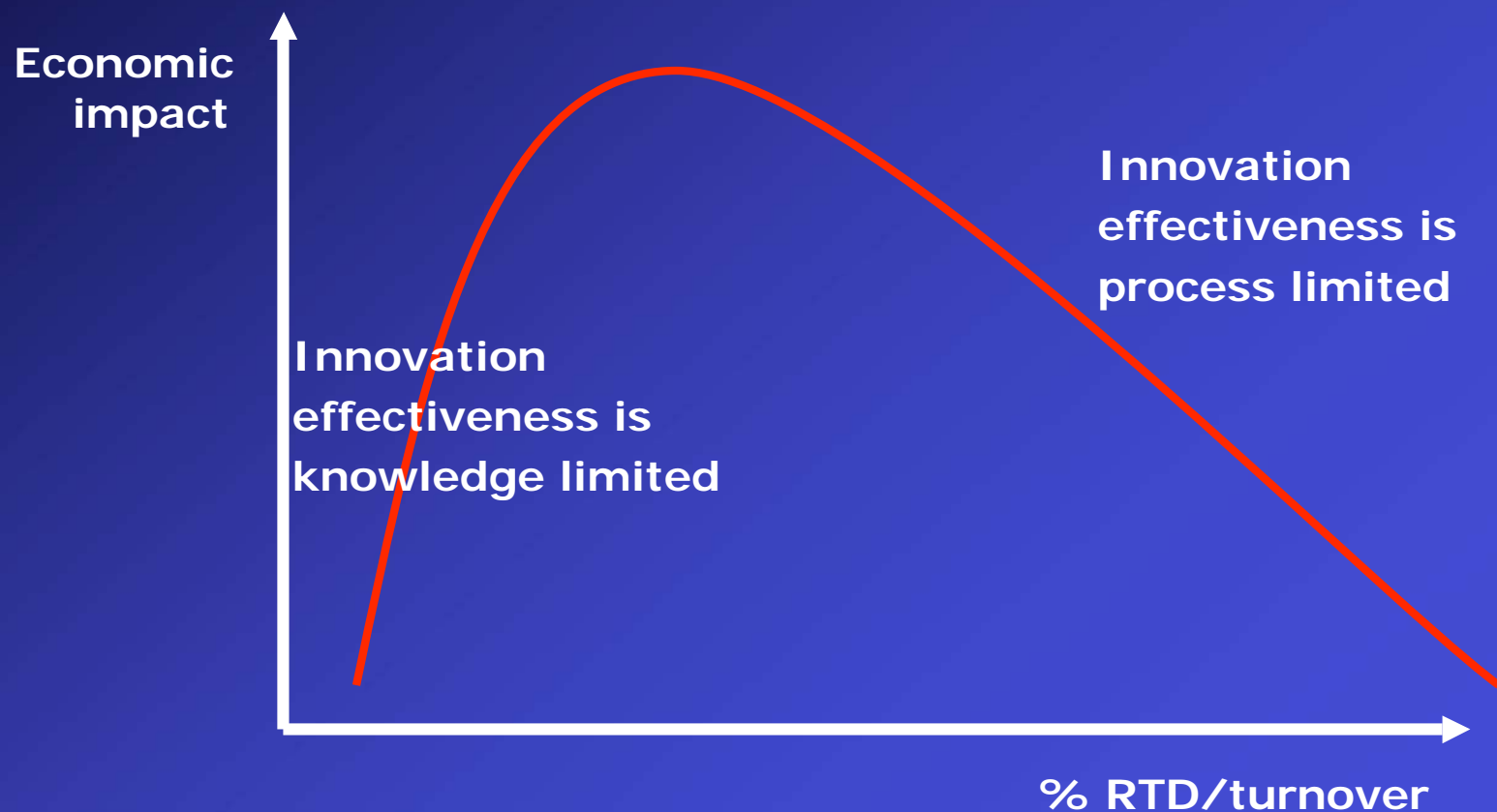
- 1/3 of the Fortune 500 USA companies was renewed
 - In **20** years for those listed in 1960
 - In **4** years for those listed in 1998
- In Europe, all the largest firms listed in 1998 were already there in 1960 !

Facts and figures

- Innovation is the least understood and managed process in industry **worldwide**:
 - It is **unstable**: requires “feed back loops” to be more **controllable**
 - Managers still consider innovation as “**expense**” and not as “**investment**”

Facts and figures

- There is **no correlation between the R&D and innovation performance effectiveness** in private companies, world wide, whatever the sector and size



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Facts and figures



| | | |
|---------------------------------------|--|---|
| Energy efficiency documented | IPR Documented & Secured | Capital requirements correctly estimated |
| Technology verified | Competitors described & evaluated | Management capabilities documented |
| Market access demonstrated | Business model | Market size estimated |
| ROI meets investor requirement | Price regulations & "Feed in" tariffs | Regulatory compliance |
| Prototype tested | | Investor preferences |

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Facts and figures

- ❖ Large industrial groups: will take care of their innovation inefficiencies, thanks to world competition
- ❖ SMEs: deserve **direct public support** to bring about disruptive approaches more rapidly than large groups
 - ✓ *The USA has designed the SBIR scheme to support SMEs*
 - ✓ *What about Europe ?*

Facts and figures

| | Europe | USA |
|--|--------|-----|
| % contribution of SMEs to GDP | 65 | 45 |
| % contribution of SMEs to total work force EU-19 | 66 | 46 |

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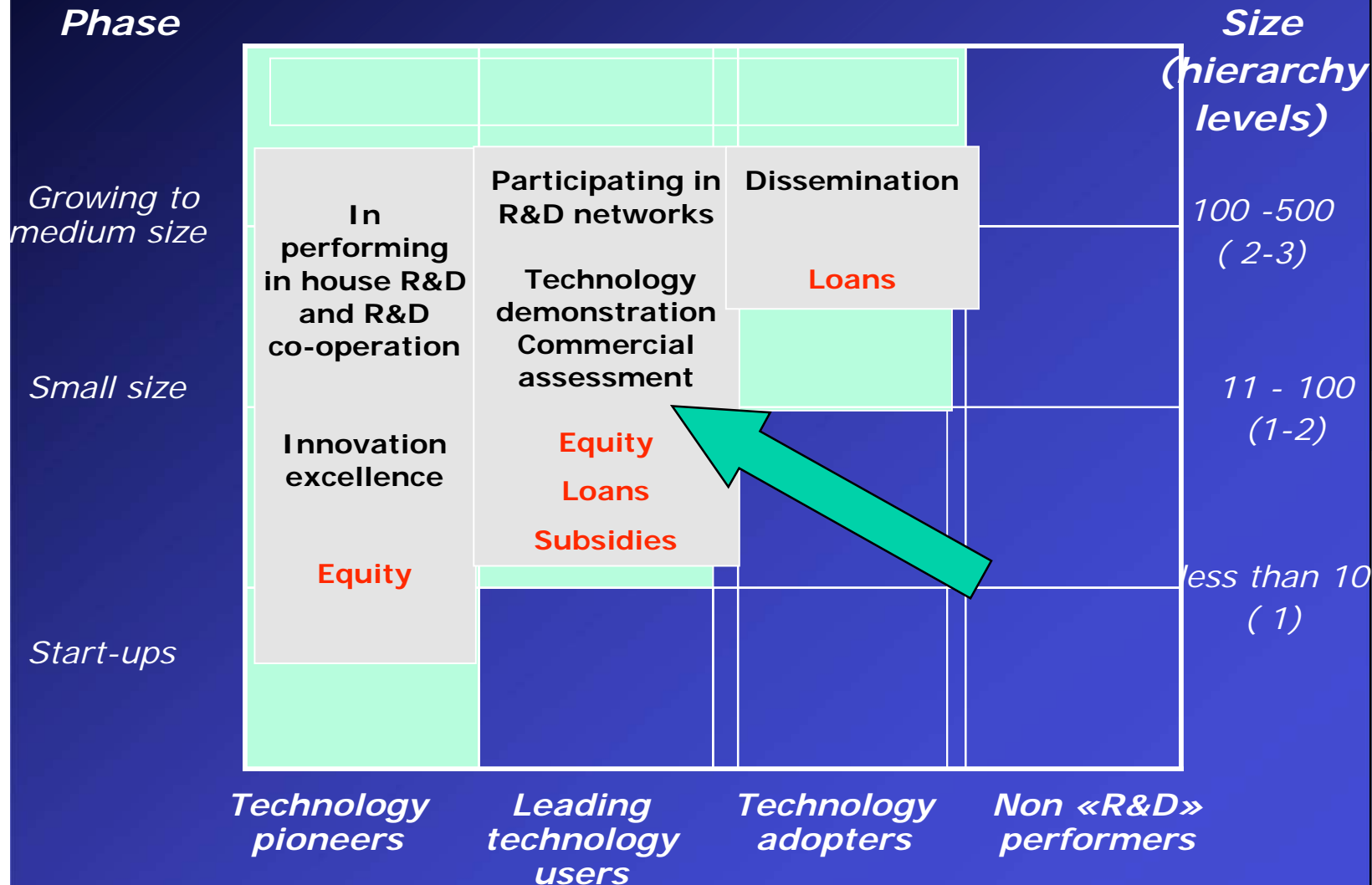
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The European SMEs



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The European SMEs

❖ The equity gap: it affects negatively EU SMEs when compared to USA SMEs²

- ✓ High growth high tech companies
- ✓ Other SMEs needing financing for expansion

² EC communication on State Aid and Risk capital (OJ/C 235, 21.8.2001, p3)

The European SMEs

❖ Overall, European SMEs invest **at least 5 times less** in R&D than their US counterparts:

- ✓ How to give SMEs **more desire** to link with research players?
- ✓ How to help SMEs **improve their innovation management** ?
- ✓ How to **bridge the equity gap** seen by start-ups and large SMEs?

Outline

- ❖ Facts and figures
- ❖ Market failures for innovation investment in Europe: the case of SMEs
- ❖ **Can public support correct for market failures in the energy sector ?**



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The role of public support

Strategic research
Basic research
Applied research

Prototype
Product development

Commercialisation

Business development

Risk and Distance to Market



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The role of public support

❖ Give energy to perform more R&D: SYNERGY + (DG Research)

- ✓ Distributed energy resources
- ✓ 3000 + SMEs in Europe
- ✓ A fast growing field worldwide with favourable EU internal market conditions
- ✓ **Investors are on board** to refine the business plans

- 57 SME in 15 R&D/FP6 proposals
- 31 SME got funded
- 24% of total funding to SME (≈ 5 M€)
- 54% success rate (average FP 6 around 15%)

18 months

24 months

SYNERGY

SYNERGY⁺

May 2004

Oct 2005

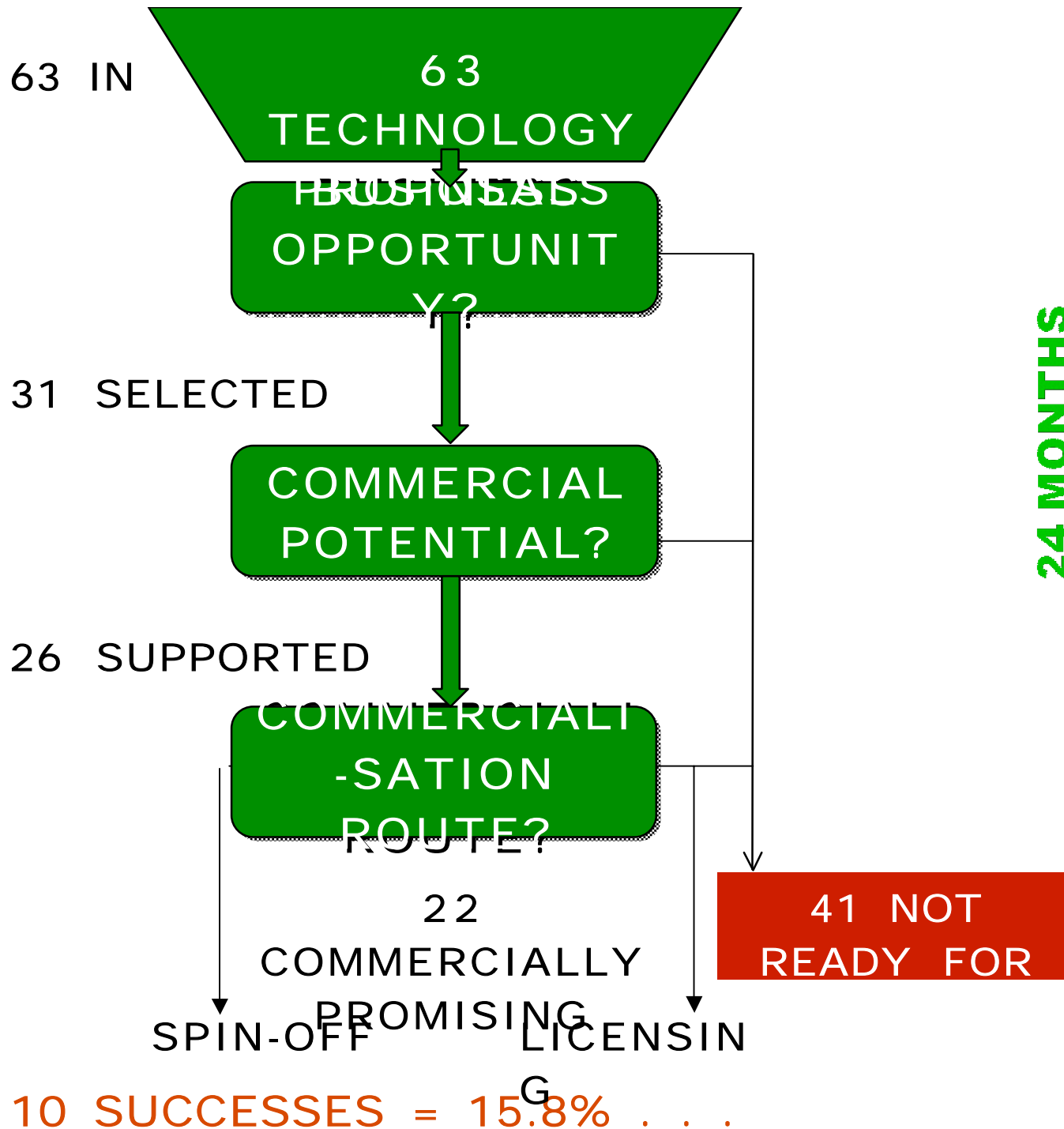
Oct 2007

- 125 SME in 39 RTD FP6/ FP7 proposals
- 44 SME got funded
- 17% of total funding to SME (≈ 8 M€)
- 33% overall success rate, 41% success rate on FP7

The role of public support

❖ Establish investor readiness for public research outputs : ProRETT (DG TREN)

- ✓ Research results coming from **public laboratories are plenty**
- ✓ The technical, commercial, financial and managerial risks vary from one project to the other
- ✓ Public support to move **from technical concept to business opportunity**
- ✓ Investors are on board to finalize the business plans



Benchmark:
 a success rate of only 1 - 2% of technology-proposals actually get funded by investors.

ProRETT performs 10 times better... with a

10 SUCCESSES = 15.8% . . .

The role of public support

❖ Support innovation in Knowledge intensive services: KIS-PIMS (DG Enterprise)

- ✓ Three Member States (Austria, Finland, France) with their innovation and energy agencies
- ✓ Develop an innovation voucher scheme with the energy clusters involved in renewable energy
- ✓ Test the innovation voucher scheme on 100 projects
- ✓ Deliver a tool box to any energy cluster willing to support service innovation

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- ❖ **What's next ?**



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What's next ?

- ❖ **No silver bullet !**
- ❖ **Innovation will remain an open non linear unstable process with huge improvement possibilities**

- ✓ R&D effectiveness
- ✓ Organisational and business model innovation: a management issue
- ✓ Public/private funding continuity: the Greenovate!Europe market place

R&D effectiveness

- ❑ **The quality of R&D outputs** to suit market requirements
- ❑ The optimization of **interfaces** between idea generation and first business sales
- ❑ **Coherent** **messages** of energy/innovation policies at EC and Member State levels

Organisation/business innovation: a management issue

❖ **Improve on innovation management: IMP3rove (DG Entreprise)**

- ✓ An **on line assessment tool** developed by a European consortium
- ✓ 1500 SMEs have used it (80 energy SMEs in France)
- ✓ any SME can **compare its innovation management performances with peers** at EU level in order to focus on appropriate improvements



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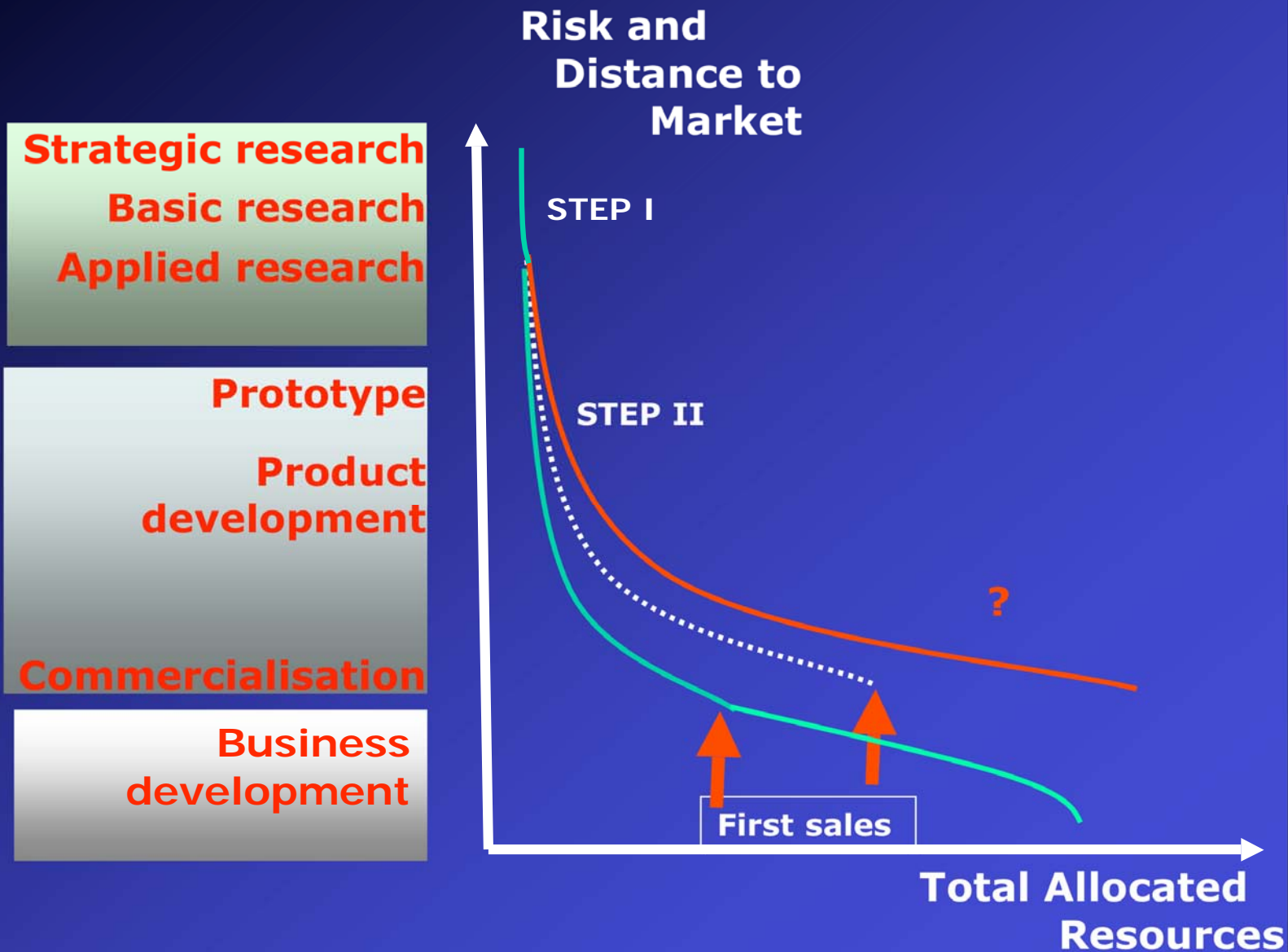
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Funding continuity



Funding continuity

- ❖ Open innovation needs a **continuous funding chain** with investors on board as early as possible
- ❖ Sending positive signals to private investors (venture, corporate, BA, SMEs): **a way to bridge the equity gap**

Funding continuity

Greenovate! Europe :
the European market
place for players in
eco-innovation



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Conclusions

- ❖ Meeting future world energy demands will require **more innovative solutions**
- ❖ Strong signals from the investor community show that **private funds are available** to cover a wide range of risks in the energy sector
- ❖ Yet, innovative SMEs must still be supported via the **right mix of public funding** which correct for European market failures
- ❖ The main challenge for all of us remains to reach a single European energy market where **regulatory uncertainty is significantly lowered**

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Thank you for your attention !

Serge Galant
CEO
TECHNOFI

E-mail: sgalant@symple.eu

Tel: +33 4 93 65 34 44

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