

R&D Commercialization- Ideas To Market

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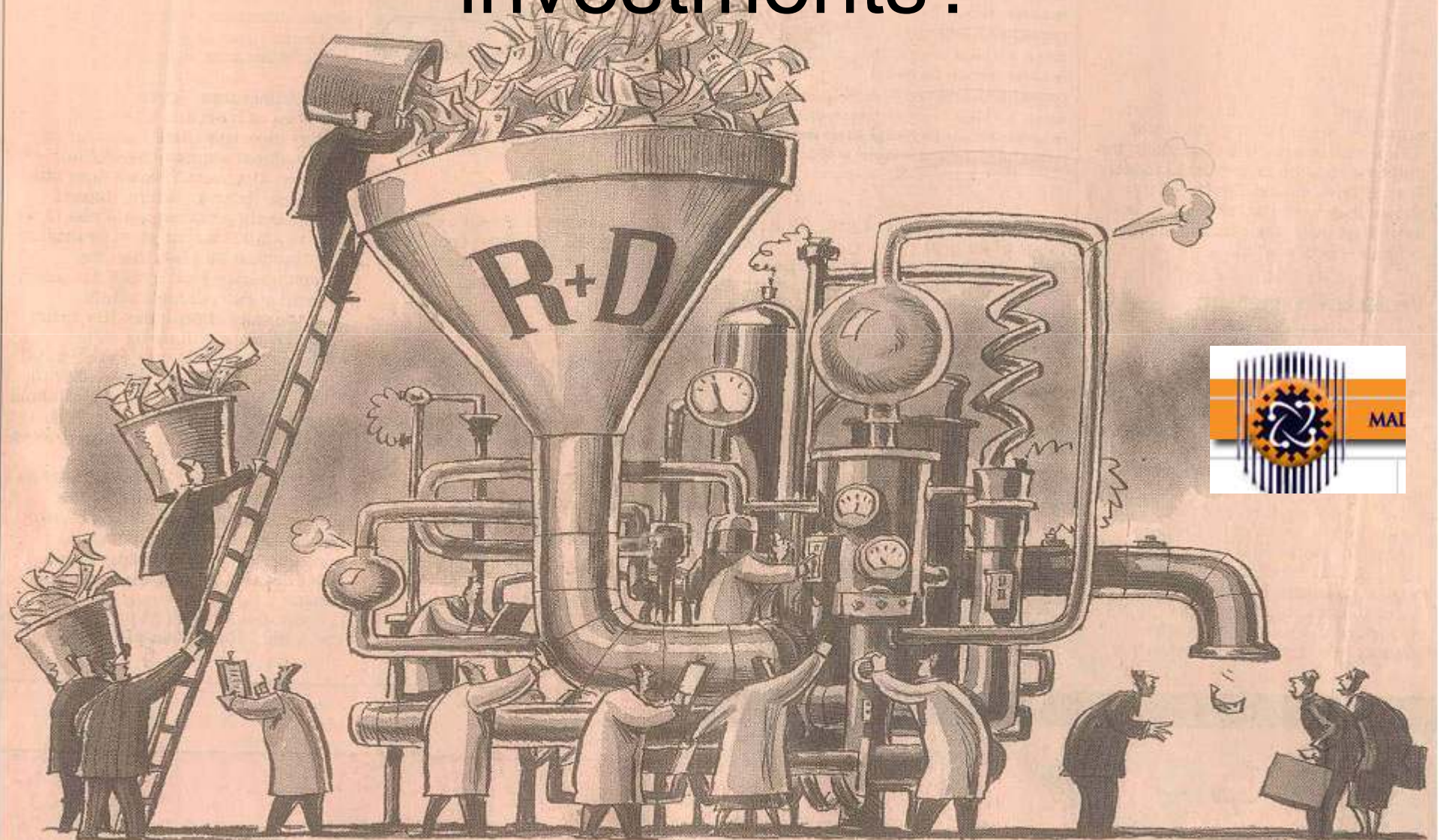


R&D Commercialization- A Never Ending Topic

Why Do We Still Have Problem
Moving R&D Output To The
Market Place?



What do we get out of R&D investments?



Knowledge- Will There Be Innovation Without The Sharing of Knowledge?

Intellectual Property- R&D
Commercialization



Knowledge Comes From Basic Research

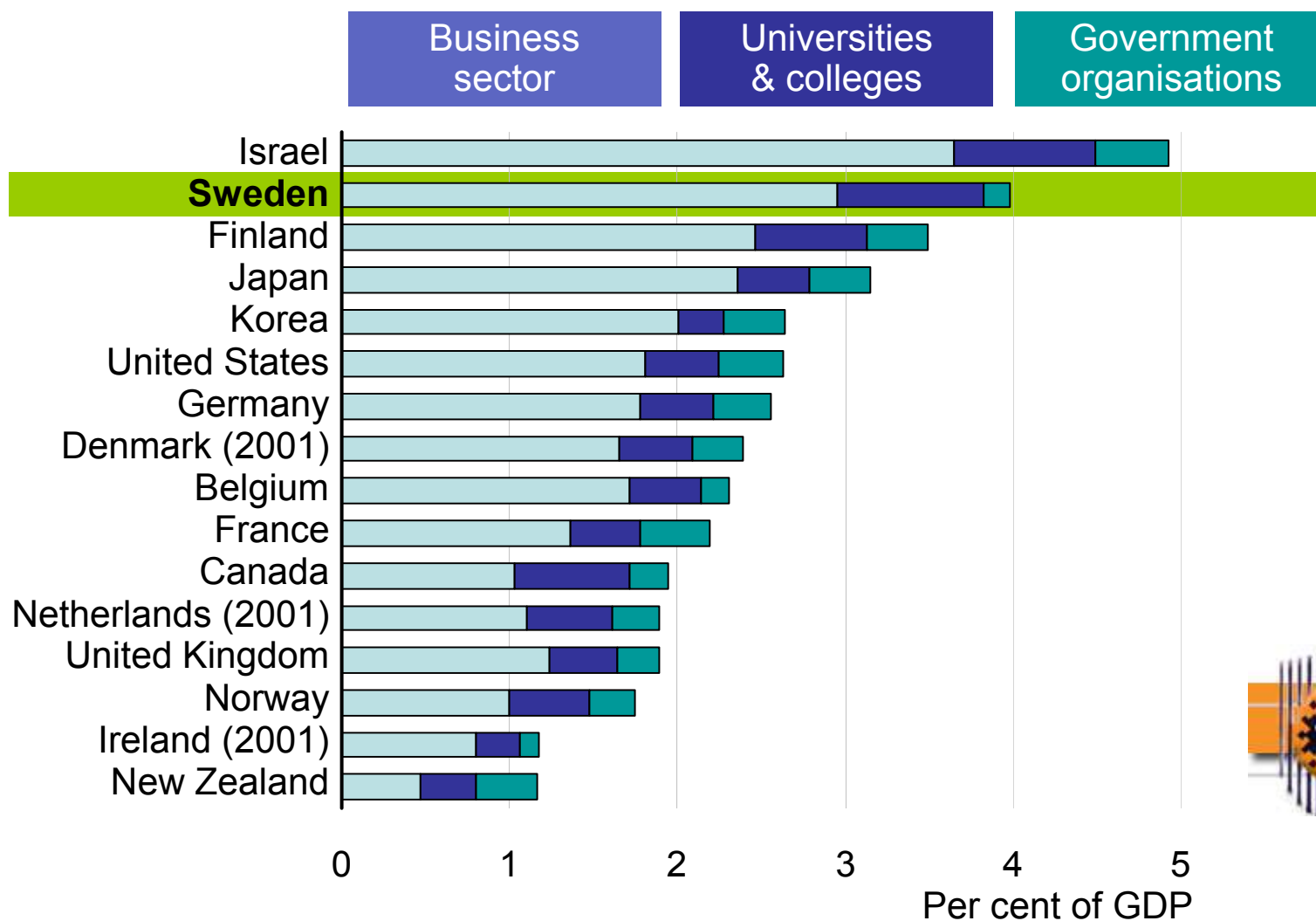
Technology Is The Output of
Applied R&D



Different Countries Invest Differently in R&D



R&D expenditures in relation to GDP 2003



Source: OECD 2005

Strong Correlation Exists Between How Much Countries Spend On R&D and Their Economic Development



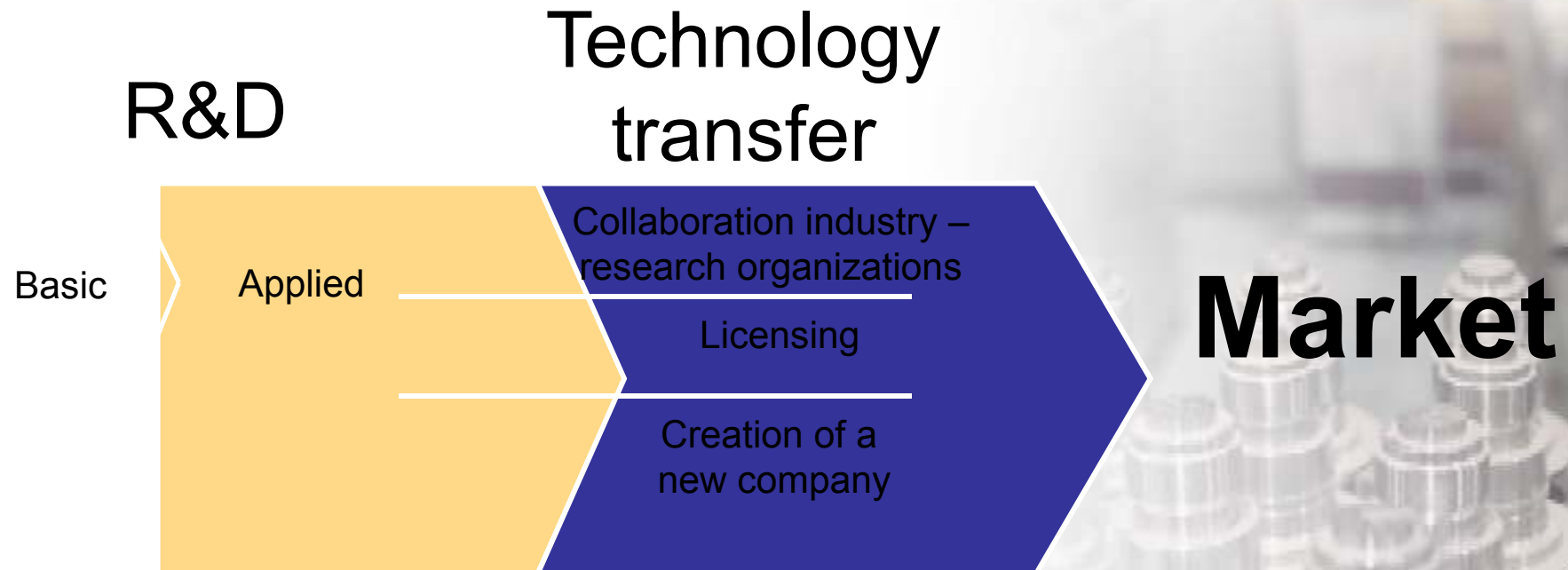
Commercialisation of R&D

– EU vs. the US

- Stronger output from US research clusters
- Stronger tax incentives in the US
- Stronger incentives for US universities
- The US capital market is more powerful
- US military spending boosts research
- US one homogenous market.
EU still too fragmented



The road map from idea to invoice



Good ideas can end up in

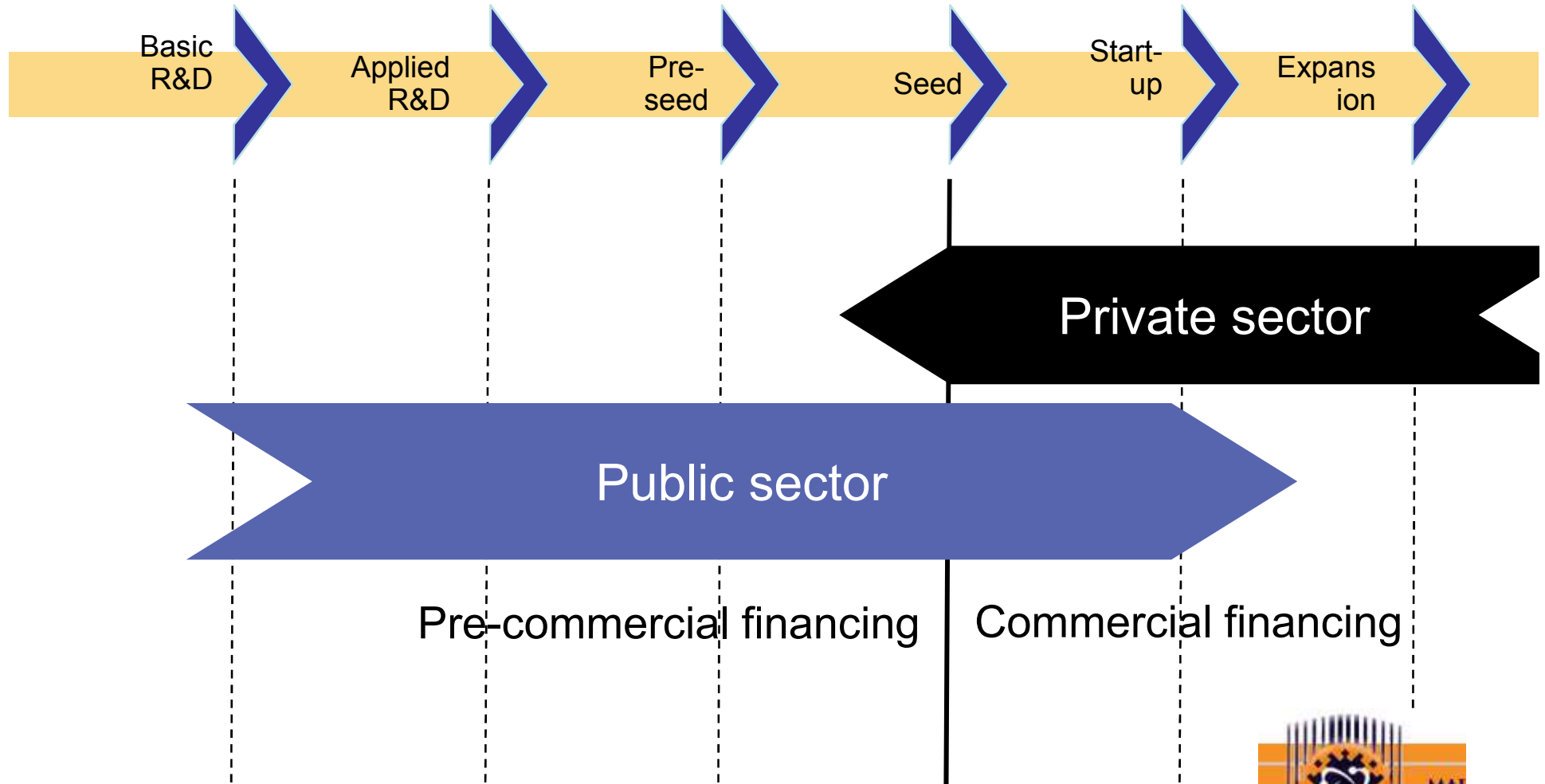
“The Valley of Death”

Knowledge

Market



Financing in different stages



Criteria for an effective innovation system

Idea

Increases flow of high quality business ideas

Provides rigorous screening

Involves business angels

Brings in market
perspective early

Based on centres
of excellence

Market

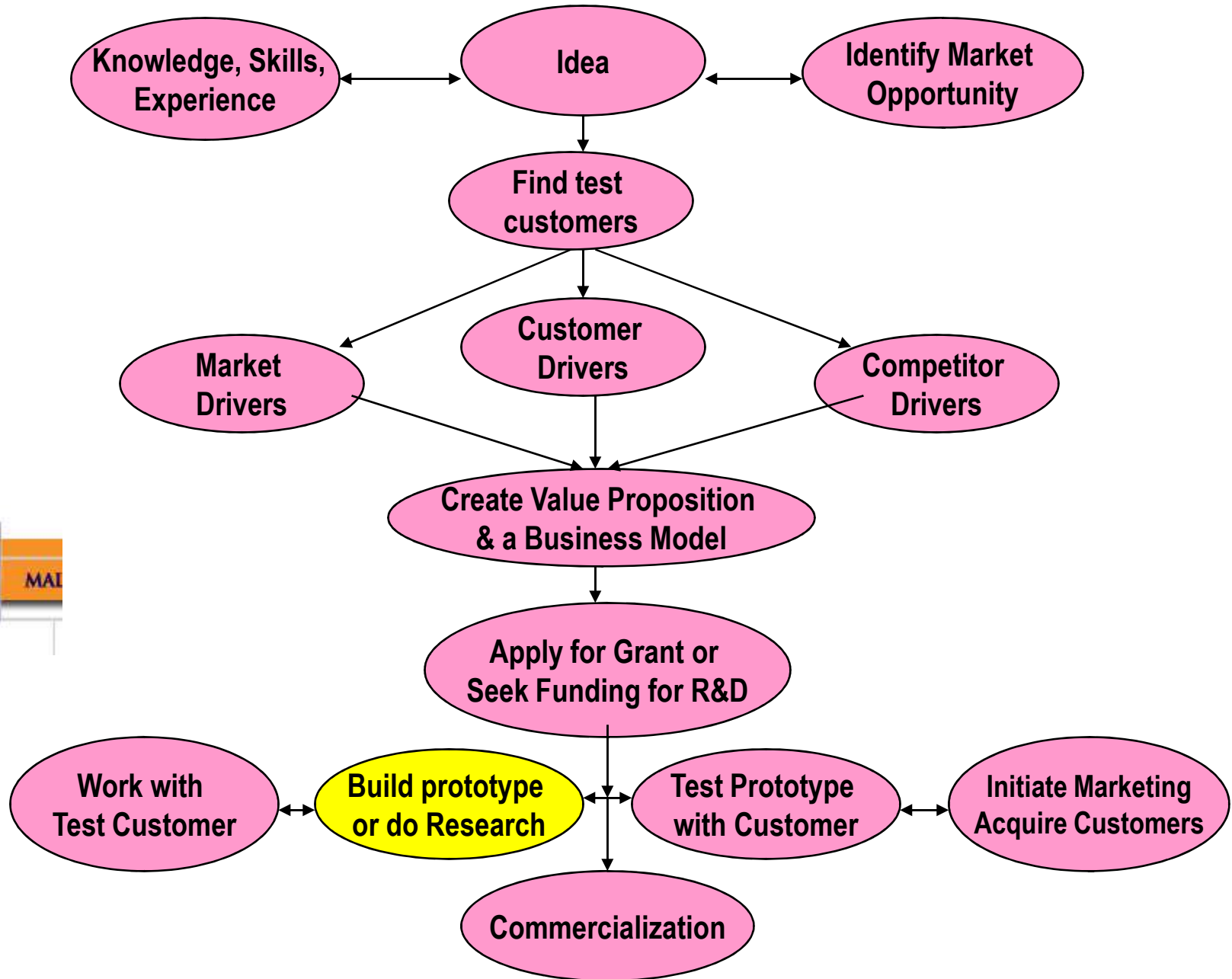


Idea Is The Most Critical Phase of R&D Commercialization

- Why Do We Spend Less on Ideation
- Often Ideas Are Left To Individual Researchers
- Value Proposition and Business Opportunities Better Evaluated At The Idea Stage



Market Driven Business Building & Commercialization Process



Key elements of Market Driven model

- 1) Market Driven
- 2) Customer Driven
- 3) Competitor Driven
- 4) Value Proposition Driven
- 5) Business Model Driven



Be Market Driven

Know your target market

- What are market needs, unfulfilled needs, gaps, not being served or badly served
- Market size, growth rates, potential, opportunities, barriers to entry, etc

Market Strategy

- Target market: who, what, where
- How to enter market – partners, channels, etc
- Differentiation, low cost, niche
- Better product, service, price



Be Customer Driven

Target customer needs & pain/problem

- Who are your customers? Be specific
- Test customer, work with them, will they pilot your product, are they glad that you're doing this
- Needs, unfulfilled, not being served or badly served
- BIG pain/problem they need solved, can you?
- Your product – Painkiller (need to have) or a Vitamin (nice to have but can do without)
- “Me too” product? Customer has no need for it.



Be Competitor Driven

Know who your competitors are for your product/service.

- What they sell, how they sell, price, service quality, why are they successful, how good is their management, what's their strategy
- Do customers like your competitors, products & service. Are there problems & gaps that you can fill
- How strong is the incumbent, are there high barriers to entry
- How competitive are your products & you.
- What's your competitive edge, your core competencies
- Whole market or Niche.
- Do you have patentable IP to create a 'monopoly'



Be Value Proposition Driven

Do you know what your Value Proposition is?

- Clear and well identified Return on Investment for your Customer
- Better than what your competitors can offer (test customer validation)
- Can this be clearly communicated to your customer
- Get customer “buy-in” for your VP



Be Business Model Driven

Is there a viable Business Model for your invention to be commercialisable?

- How will you or your customer make money from the invention
- Will customers pay for the product or service (will the cat eat the cat food)
- Is there a good profit margin



Why the market driven model is superior

- 1) It is based on what the market & customers actually want/need, not on what you (the Researcher or Entrepreneur) think it needs.
- 2) It is based on working with parties who may be your actual customer in the future
- 3) 'Will the cat eat the cat food' – will the customer buy AND pay for the product or service & does it fulfill their needs/wants/desires
- 4) It allows the Researcher to determine whether there is a 'real' market for their R&D before the R&D begins.
- 5) Saves time, effort & money in creating products/services that no one wants or is already outdated or obsolete – hence NOT commercialisable





Enhancing the Process

So how can you enhance the process to ensure better commercialisation results?

- 1) Network, network, network – create more networking opportunities for researchers, commercialisation partners, industry players, Entrepreneurs, venture capitalists & academics. These are your stakeholders.
- 2) Have ‘problem & pain identification’ and ‘solution seeking’ sessions where industry can tell you what their problems are & what they are looking for.
- 3) Have ‘show & tell’ sessions where researchers & academics can showcase their research & discoveries to industry players.
- 4) Make it targeted, so it can agro based, or drug discovery, or ICT but targeted.

Enhancing the Process

- 5) Create a database of research & patents which industry players can search. Like Cradle's "Ideas Bank". Work with Cradle to extend "Idea Bank" for academia.
- 6) For Universities – Involve Business, Management, Entrepreneurship & MBA students in the process of market, customer & competitor study. Let them do this as part of their study requirements (An assignment can be for example: Pick a research program within the University & determine its market potential)
- 7) Ask their Professors to incorporate this into their assessment for their study or better still as part of their thesis.
- 8) Get mature students especially MBA & post-grads to be part of Entrepreneurial teams for selected high value research projects



Enhancing the Process

- 1) The idea is to enhance sharing, opportunity identification and opening up avenues for all stakeholders to meet & network.
- 2) This should be the realm of the TTO and the relevant Government agencies
- 3) The more collaboration among Universities, the better for everyone. So have joint sessions where several Universities can do this together.



Selected commercialisation pathways

| Pathway | Advantages | Issues & Challenges |
|-----------------------------|--|---|
| 1. Outright sale | Simple, immediate income | Right buyer, right price, but no upside from future developments |
| 2. Consulting | Personal to the expert | University regulations on consulting, share of consulting earnings, short term by contract |
| 3. Licensing | Exclusive or not, long term income, simple | Due diligence by licensee, finding the right partner, agreements & pricing, further development of tech & sharing in future value added |
| 4. JV company | Agreed equity stakes, sharing in future development | Right partners for JV, funding future R&D |
| 5. Independent Spin-out Co. | Agreed equity stakes, best returns incl. from future R&D | Forming the team, finding a leader, funding, operations, marketing & sales, future R&D |



Key Success Factors for R&D Commercialisation

- 1) Focused research based on core competencies
- 2) Entrepreneurial culture – top down (V-C, Heads of Dept & TTO office) & bottom up (Researchers with entrepreneurial drive)
- 3) Strong internal & external networks to build Entrepreneurial culture (students, corporations, agencies, external Entrepreneurs)
- 4) Cross disciplinary Entrepreneurship programs
- 5) Private corporations & foundations to support research & entrepreneurship
- 6) Networks with corporations & potential customers to identify customer pain, market needs, wants & gaps (esp.BEFORE R&D)
- 7) Champions (V-C) to catalyze research & entrepreneurial culture



But first there must be an idea

- What is unique about the idea?
- Is it significant?
- Is there a need for your idea – what is the 'pain' that you are solving?
- What is so compelling about your idea - what is the secret sauce, the key differentiator?
- Is it proprietary, can you protect it?
- Is the idea executable, do-able?
- Is it executable by you & your team?
- Does it 'fit' your team's experience & expertise?

