

Three European Showcases

**Marketing nanotechnologies through the
creation of successful start-ups**

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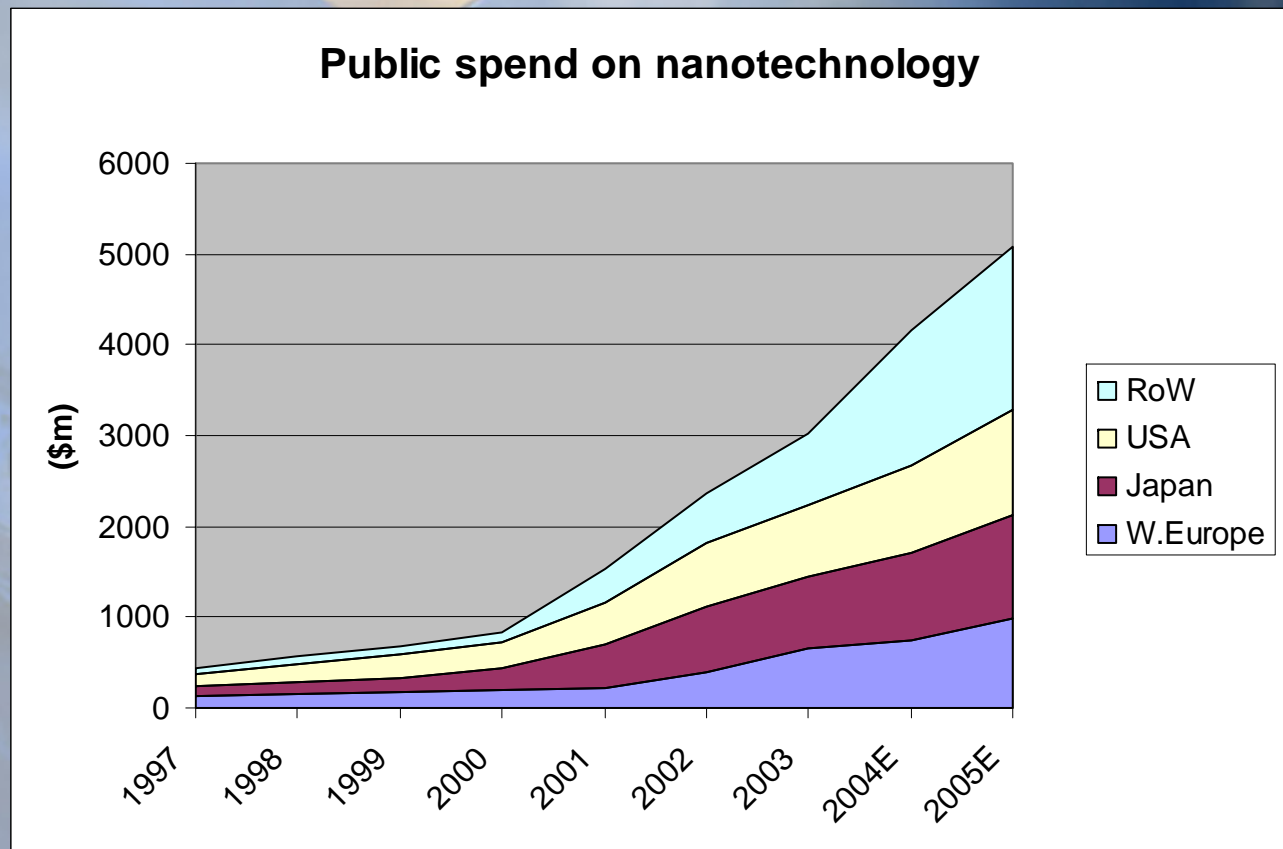
Nano Macro-Economics

- Nanotechnology revolution
 - In our opinion the nanotechnology revolution is more economics than technology
 - More nano-knowledge in academia than in corporations
 - Corporate « fundamental research » budgets have been cut for the last 25 years.
 - Corporate R&D focus on short to mid-term
 - The pharmaceutical industry is a template: most innovations are developed externally, then integrated through acquisitions when commercially mature.
- 2005: Inflexion point in Nanotechnology budgets

Nanotech budget

- An explosion of budgets during the last 10 years
- In Cientifica's opinion, corporate nano R&D budgets are catching up with public budgets in 2005, at over 10B€ annually.

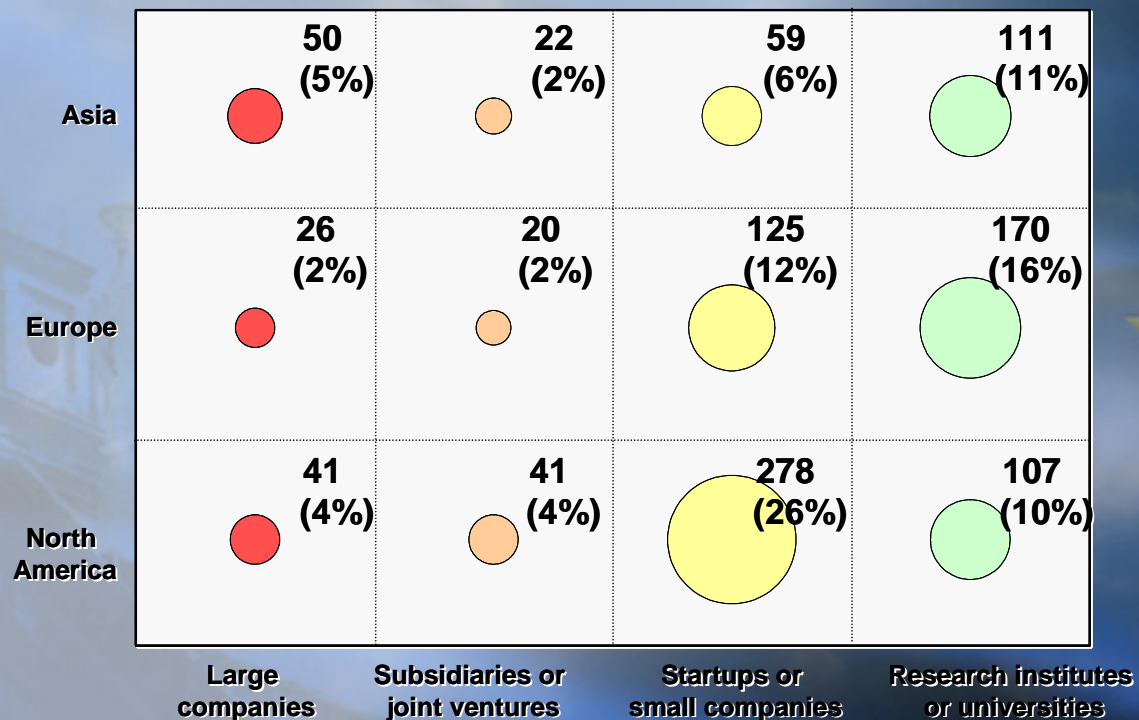
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Start-ups are many

- Start-ups and small companies represent 42% of all actors
- More numerous than large companies and research institutions.
- Even if many in the US, they are substantial in Eu and Asia (less visible also, so those figures are underestimates).

Size of the bubble = amount of actors in the field



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Opportunity and Challenge

- A fantastic opportunity to build value
 - For academic institutions: holding knowledge and Intellectual property
 - For entrepreneurs: nanotech offers « green field » opportunities
 - For investors: adventurous capitalists able to handle the risk will reap high reward
- The real challenge: commercialisation of nanotechnology from scratch

Implementing commercialisation

- Little economic barriers
- Many other Huge hurdles
 - Market analysis
 - Non-existing markets
 - Little data on future markets
 - Obscure markets for niche applications
 - People
 - Need for both technical and business understanding
 - Ability to jump from one industry to another
 - Having an international approach, not local
 - Market oriented technology development
 - Anticipate market needs, not what technology can deliver
 - Commercialize even things that don't work or not perfect
 - Develop products for specific demands: talk to customers early

Three issues for nanotech ventures

- Horizontal nature of nanotechnologies
 - Applications over many industries
- The « biotech » syndrome
 - Time to market: very long after starting
- Marketing an innovation
 - Reaching customers
 - Convincing customers

1 - Horizontal Nature of Nanotechs

- Nanotechnologies are often enabling
 - They are not providing solutions to a market need, but supporting other products and services
 - -> no contact with/control of end client
 - -> need to find an advocate to the end client
- Nanotechnologies often have applications in many industries
 - Difficult to select a particular application
- Applications of fullerenes? Nanotubes?
- Showcase: Peratech

Peratech

- Quantum Tunneling Composites
 - a polymer that changes conductivity when under pressure
- Numerous applications
 - Switching & Pressure control
 - Power control
 - Current sensing
 - EMI emission control
 - Gas and volatile organic compound detection

Products

- Pills
- Cables
- Substrates

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Switch control

- Power tools
 - Speed variator
- Security
- Detection

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Textile

- Flexible
- Low Cost textile switch
- Strong and resistant

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The issue

- Addressing many industries & markets
 - Choose the low hanging fruits
 - Demonstrate leading examples
 - Become a material company
 - Do not go for final applications: too expensive, too far and too specialized
 - Partner with industry specialists
 - Switch maker
 - Textile specialist

2 - The Biotech syndrome

- Time and path to payback is long
 - Long development time required
 - Application and need is only future (no paying customer now)
 - Need is projected but not certain
- Many real options
 - Many technical steps before reaching: technical steps, financial rounds
 - Many decision points along the way
 - Many financing rounds that are dependant on hard to predict financial market climate
- Bad risk profile
 - No downside recovery
- Showcase: Si-Light Technologies Ltd

Si-Light Technologies

- Light emission in silicon
- The Graal of the semiconductor industry
- Merging the telecom and IC world
 - Telecom is III-V based
 - IC and PCs are silicon based

The issue

- Not before 2012!
 - No tangible introduction before 2009
 - 5 years of development
 - >100m€ of investment !
- Solutions:
 - Developing the technology for quicker applications
 - Sensing
 - Partnering with a large semiconductor industry player
 - Finding a financial supporter with very deep pockets

3 - Commercial reach

- Nanotech Start-ups starts with:
 - Technology development
 - Product focus
 - Potential applications
 - Lack of market information
 - Lack of sales force
- That is only natural!
 - Science and innovations are created by scientists and engineers: not businessmen!
- Show-case: Nano-Sight

Nanosight

- A system to « see » nanoparticles with a simple common optical microscope.
- Applications in
 - Biology
 - Nanotech labs
 - Security

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NanoSight

- 100 nm and 400nm nanoparticles with your own eyes!
- Brownian motion live!
 - A bimodal system of 96nm and 384nm polystyrene reference spheres in water. This clip illustrates how HALO can measure size of individual particles, as the differences in speed under Brownian motion are clear. The scatter of the larger particles also clearly differentiates them from the smaller ones.© Nanosight
 - http://www.nanosight.co.uk/media/gallery/video/96_and_384nm_polystyrene_nanoparticles_in_water.mov

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The issue

■ Commercial reach

- No marketing package
- No sales force

■ Way out

- Get help with experienced marketers
- Partner with complementary product providers
- Built a distributor network

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5954 6570 Email: john@qcd.co.jp Web: <http://www.qcd-japan.co.jp>

Further references: teaching cases

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London Business School - Foundation for Entrepreneurial
Management

Center for Scientific Excellence London
European Case Clearing House

- Peratech: LBS Teaching case
 - www.peratech.co.uk
- Si-Light Technologies: LBS Teaching case
 - www.si-light.com
- Nano-Sight
 - www.nanosight.co.uk

Conclusion

- Real opportunities exist for creating value from basic science and inventions.
- Plenty of opportunities exist in Eu and Japan
- Commercialising and exploiting nanotechnologies to build value is not easy!
 - Requires pluri-disciplinary approach: technology, development, strategy, marketing and sales.
 - Need of people with industrial and business experience
 - Ask us more about it!

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