

PATENTS in the business system of a START-UP

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 John Heebøll
 Lecturer, entrepreneurship, DTU & KU

Agenda

- The Importance of Start-ups
- The Importance of University Start-ups
- Patents vs. Growth-oriented Start-ups
 - Financing
 - Risk & Timing



The Arena of Start-ups

- **Categories**
 - Traditional business concepts: app 18.000/yr in Denmark
 - High-tec companies: less than 1.000/yr on Denmark
 - High tec start-ups with venture capital: less than 50/yr in Denmark
 - From DTU: 5 VC-backed companies/yr is a good guess
- **Value creation**
 - More than 80% of new jobs in start-ups are created by less than 10% of the new companies: the growth-oriented start-ups
 - Most growth-oriented start-ups are high-tec VC backed.
 - All high-tec VC backed start-ups are growth oriented
- **Start-ups in tech-trans**
 - Less than 1 in 5 new inventions is commercialized via a start-up.

Then why bother?

- **Society**
 - The business birth rate is related to the Gross National Product (GNP) in a non-trivial way [GEM 1998].
 - Globalization wears down traditional industry. Hence, formation of new, globally competitive and growth oriented companies is crucial
- **University**
 - Part of the "third leg" (innovation) and hence, a societal obligation
 - Outlet for technology that is difficult to license (too early or alien)
 - Can be a cash-cow – but it's a lottery ticket.
- **Founders**
 - Impact, value creation and working life are primary drivers
- **Investors**
 - Can be a highly rewarding investment



Does it Matter what a University does? Massachusetts Institute of Technology



- One in four faculty involved in technology venturing
- 5.000+ companies founded by graduates and faculty since 1861
(in av.: 35/yr. DTU: probably 5 – 10)
- Employees at MIT- companies > 1.000.000
- Sales of MIT- companies > \$250 Billion/yr
(DKK 2005 GNP: \$285 Billion)
- If a nation: 24th largest in the world

The VC-backed spin-out company

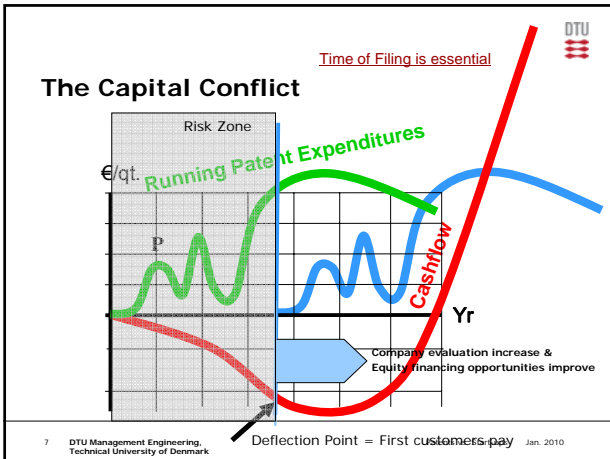


- **Founders**
 - Consistently a team.
 - Usually highly educated, successful careers in academia and/or industry
 - Focus on customers, business development and value creation
- **Product**
 - High level core knowledge
 - Disruptive technology
 - **Strong IP position**
- **Business model**
 - International and scalable
- **Investors**
 - High-risk - high growth oriented
 - Key competencies in business management and financing

The Patent in the Start-up Business System



- **Financing**
 - Usually a precondition for attracting capital
- **Specific start-up problems**
 - High costs when
 - acquiring professional assistance
 - entering the national phase
 - Cash flow usually still negative when IP expenditures peak
- **Notice:**
 - IP worthless if the company cannot defend its IP =>
 - Important to have a financially strong co-owner on board
 - University-owned IP means
 - Patent must be bought at VC-pre-seed investment time - or
 - University becomes co-owner



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Timing is case sensitive!

- Great inventions seem to be invented simultaneously by many
- Patents are not disclosed until one year from filing at the earliest =
 - Others may file just before you
 - You might have priority – until you withdraw and re-submit your patent application

8 DTU Management Engineering, Technical University of Denmark Patents vs. Start-ups Jan. 2010

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To sum up --

- Patents usually a precondition for attracting risk capital
- Risk capital usually a precondition for high-growth high-tech start ups
- Tech trans via start-ups from a university either because
 - The business idea/the invention is low-perspective. Hence uni rejects the idea and the rest of us don't care either.
 - The business idea/invention is perspective (disruptive technology with an exit opportunity for the founders). This requires a patent.
- Patent cost conflict with business development in that
 - It is difficult to control, timewise
 - It is counterproductive to have major payments just ahead at funding time.

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To further sum up --

- There is no solution to this equation – you have to apply common sense, good businessmanship and accept risk.
- Listen to your colleagues at conferences – they often disclose trends that indicate inventions soon to appear.
- Build sound IP strategies together with TT professionals and VC investors.
