

DTU Management Engineering

Ph.D course on

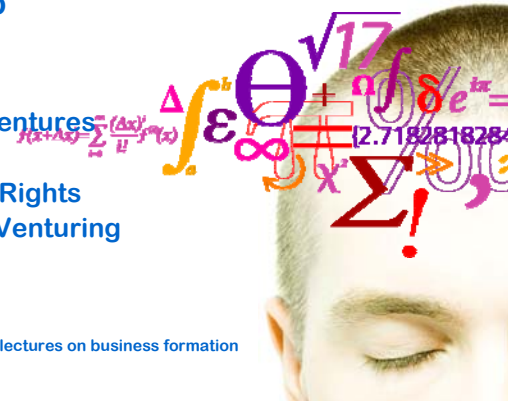
Patents &

Commercializing IPR - 2013

AGENDA

1. On Entrepreneurship
2. Business Start-up
 - Founders
 - Financing High-tec Ventures
 - Market Analysis
 - Intellectual Property Rights
 - Managing High-tech Venturing
 - Business Planning
 - Spin-out or license

Course [42735](#) starts on Tuesday 10 April with 7 lectures on business formation



Spin-out **instead of License** – when:

1. **You have a dream and a team**
2. **The invention has a significant perspective**
3. **Investors are interested**
4. **The university agrees and supports**

To a talented and enterprising individual, the start-up has to be an attractive alternative to a career in industry or academia – and hence it needs to be good.

Knowledgebased Entrepreneurship

Entrepreneurship is -

**The pursuit of opportunity –
without regard to resources currently controlled
for the creation of new economic value**

Howard Stevenson, Harvard Business School

An entrepreneur is -

**Someone jumping out from a cliff –
trying to assemble an airplane on the way down**

Ari Wegter, Founder, CEO, [GlibHippo](#)

The Importance of Entrepreneurship



Entrepreneurship works –

- In business formation
- Inside existing companies
- In academic R&D
- in most walks of life



The Importance of Entrepreneurship The Role of Universities

Massachusetts Institute of Technology

- One in four faculty involved in technology venturing
- 28.500 companies founded by graduates and faculty since 1861
- Employees at MIT- companies ~ 3.300.000
- Turn-over of MIT- companies > \$2.000Billion/yr
(Denmark, GNP app: \$ 350 Billion/yr)
- If a nation: MIT Business Community the 11th largest in the world

Source: Mandag Morgen Aug. 2010



Entrepreneurship teaching and training in Further education:

- A global trend
- Adopted by all significant universities and engineering schools
- Designed to cater for
 - Career development
 - Business formation
 - Business development
 - Tech trans
- Also a cost efficient industrial development activity:
"The prevalence of High Expectancy Entrepreneurial Activities varies significantly and directly with national levels of entrepreneurship teaching and training in further education, and inversely with government regulation on new firm entry. All other Entrepreneurial Framework Conditions seem to have little or no influence on the High Expectancy Entrepreneurial Activities." [Erkko Autio; Jonathan Levy, longitudinal GEM study, 2000-2007]

DTU course 42705: Knowledge based Entrepreneurship

*Develop your passion for opportunities:
The entrepreneurial **MINDSET***

*Improve your executive skills:
The entrepreneurial **SKILLSET***

Entrepreneurial Motivation

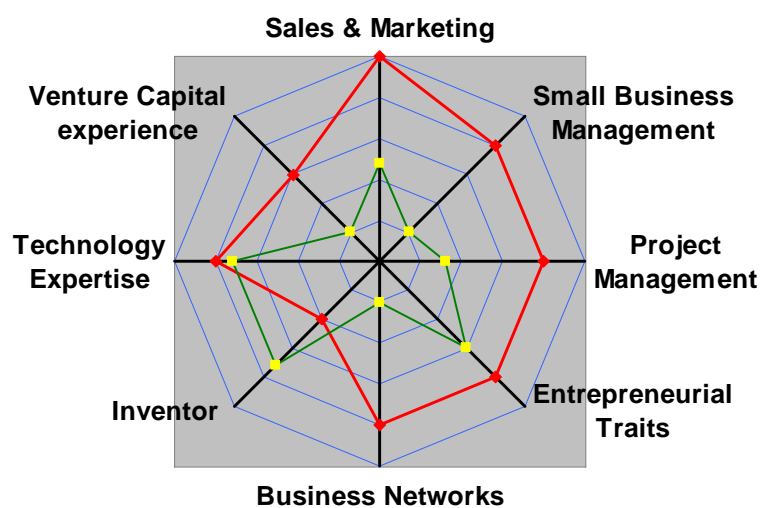
- The ultimate demonstration of your power and skills
- Great fun and lots of interesting work
- A catching lifestyle
- An independent lifestyle
- A team sport with highly motivated friends
- Great expectations, great perspective
- To make a Gazillion?

The Entrepreneur

- **Extrovert**
- **Proactive**
- **Energetic**
- **Initiator**
- **Capable of – and quick in - making decisions and enforce them** (*a DOER rather than a PLANNER*)
- **Personal integrity**
- **Stubborn**
- **Ressource-demanding**
- **Unpatient**

A Napoleon

The IDEAL Entrepreneurial Team



The Birth of an IT Venture



The Ideal Preconditions



- **Up-to-date education**
- **Domain knowledge**
- **Entrepreneurial skills**
- **A positive life situation**
- **A global perspective and a good command of English.** (BE-standard OK)

Succes factors

- **QUALIFIED TEAM** including all experiences and competences needed to complete the task
- **COMPREHENSIVE UNDERSTANDING** of the **CUSTOMER** – reflected in products and services
 - Start in markets in rapid change and transition
 - Market pull versus technology push
 - Methodical preparations before launch
 - A readily understood and logic business rationale
 - Enough **CASH** to produce commercial results
 - Product development plans on strategic level
- **GOOD MANAGEMENT** in all aspects

From the Bankruptcy Statistics

- | | | |
|---|--|------------|
| • Sales failed | <i>76% of Danish start-ups in the market market!</i> | 39% |
| • Beaten by competitors | | 21% |
| • Operating costs too high | | 11% |
| • Overhead costs too high | | 4% |
| • Bad debts: customer bankrupt | | 9% |
| • Production or technology fails to comply | | 4% |
| • Any other reason: | | 12% |
| • Mess and disorder | | |
| • Inappropriate localization | | |
| • Fraud | | |
| • Health problems, natural disasters etc. | | |



Massachusetts Institute of Technology

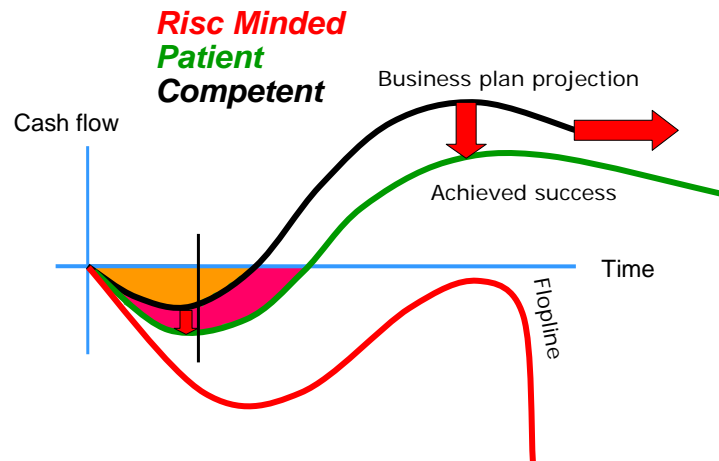
The MIT Recipy

- **Where is the Pain?** (No Pain = No Sale = No Company)
- **What is your value proposition?** (VP)
Quantify your value proposition (QVP)
- **Who is your customer?** (who is your jury)
- **Why would he or she buy?** (Pain X Value breaks Barriers)
- **How much is he or she willing to pay?** (VP)
- **Practice your Elevator Pitch**
before meeting your customer/investor

Financing a High-Tech High-Growth Start-up

Capital: for what?

Business Development!



The entrepreneur's most important Capital Sources

- **Your own bloody money**
- **FFF** Family, Friends & Fools
- **In Kind** Other people's resources
- **Your first customer:** The more pain, the better
- **Investors' money** If your business potential and -opportunities depend on speed and volume.
Preconditions: scalability, exit ability and obscene growth potential. (the "unfair" competitive advantage)

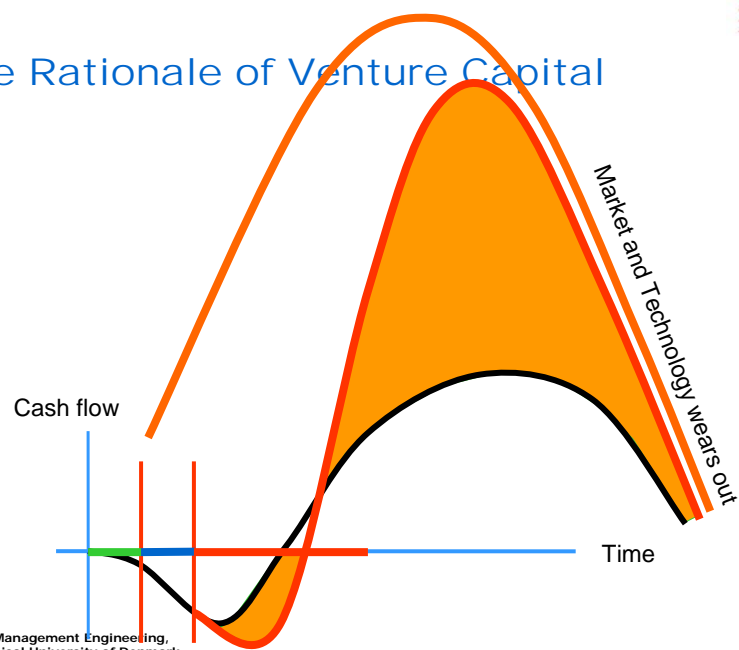
EXIT

The inherent consequence of equity financing

Investor sells ownership (shares) and pull out

- | | |
|---------------------------------------|------------------------|
| • IPO: Initial Public Offering | Rare but rewarding |
| • Trade Sale | Acquisition |
| • Management buy-out/buy-in | Not best but ROI > 0 |
| • Earn-outs | Even worse but ROI > 0 |
| • Repayment of loans | Not sustainable for VC |
| • Enforcing preferences | Cutting the loss |

The Rationale of Venture Capital



Investors

Pre-seed

FFF: the Business Angels
 DK: Innovation environments

Seed – Early Stage

SEEDCapital Denmark
 Business Angels
 Venture Capital companies (VC)
 Vækstfonden

Second round, follow-on

VC and Corporate Venture Capital
 Credit Institutions
 Banks
 Vækstfonden
 Some stock exchanges

Investor's Criteria for Interest

5P

- **Pain/value proposition** *Is it a disruptive technology?*
- **Perspectives** *Market size/share exit-opportunities*
- **People** *Track records, competencies, ambition*
- **Platform** *Proof of principle, concept, value, pull, profit*
- **Process** *The project according to the Business Plan*

Comments:

- Must be a Venture Case: ROI > 10 in less than 5 years.
 (126 rule applies too: 100 mio in T/O, 20% profit in less than 6 yrs)
- The team is the single most important precondition
- Platform: the more commercial proofs, the better.
 Commercial proofs reflect risk and competence

Dancing with Wolves

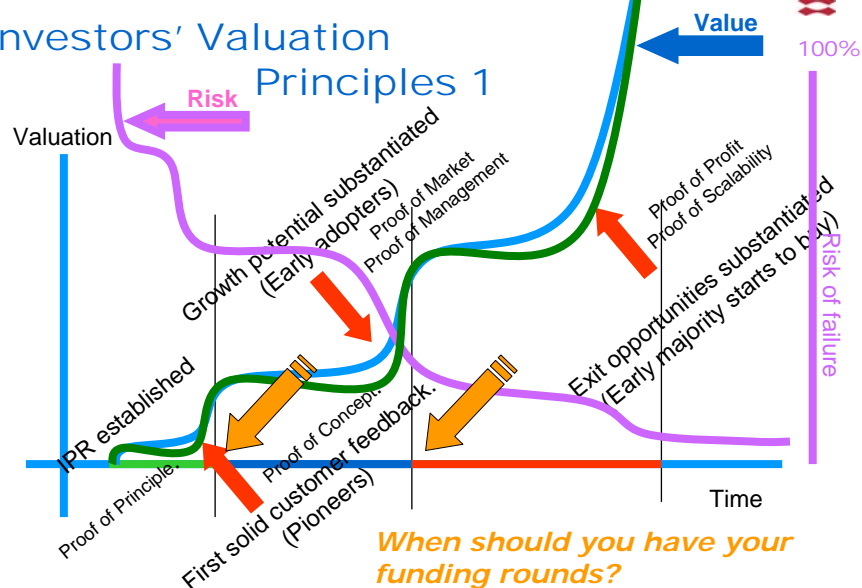
Or how to deal with investors

- **Capital always Wins**
- **Your counterpart has done this many times**
- **Your counterpart is not depending on you**
- **Your counterpart has lots of time**

Negotiating tactics:

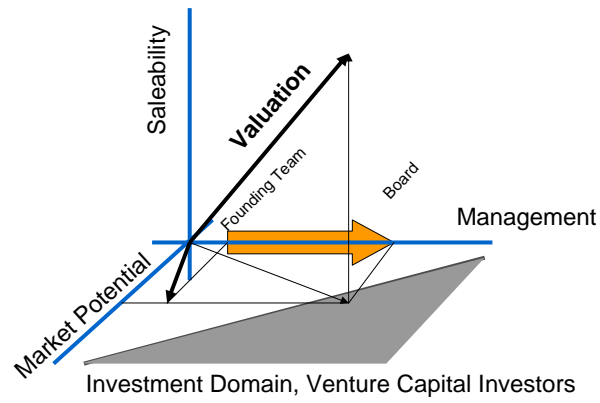
- **Freedom of Maneuvering**
Never enter negotiations without having fall-back positions.
- **No major payments that jeopardize your project**
Your investor will find out at "due diligence"
- **Don't go for money unless you can do without**
Make it clear from the beginning that you are not for sale at any price
- **If you are asked for exclusivity: it costs** (all claims cost)
Exclusivity reduces your freedom of maneuvering
- **Consider to get more investors into the game – transparently**
- **The more proofs before investment – the better**
- **Strategic partners also an asset**
- **Get yourself a management team and a battle-proven consultant before opening the game**

Investors' Valuation Principles 1

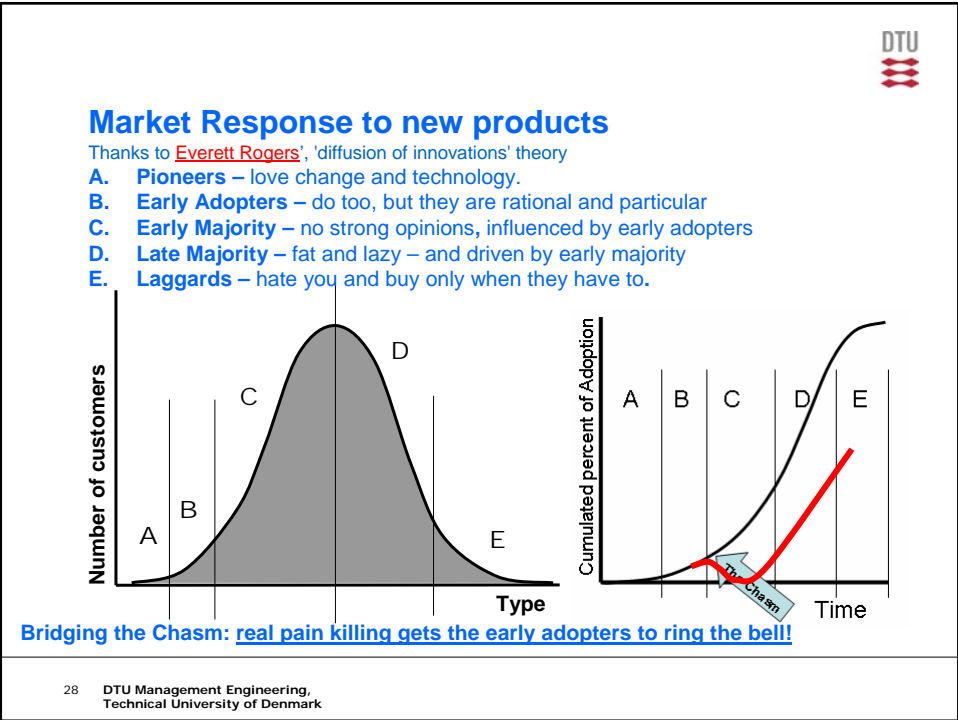
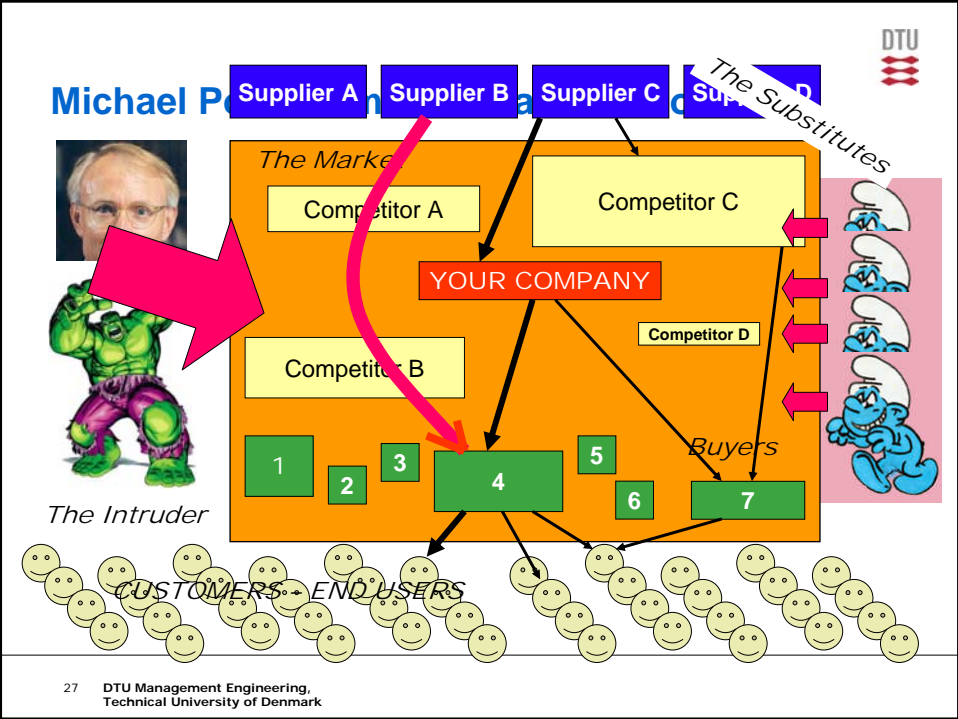


Investor's Valuation Principles 2

Valuation & Management



Market Analysis



Protecting IP & Knowledge

Protecting your IP (The Protective Shield)

PATENT

Global, efficient, expensive, resource consuming

UTILITY MODEL (Poor Man's Patent)

National - local, cheaper, risky (no novelty search)

DESIGN PROTECTION

National, mandatory in certain business areas

TRADEMARKS, BRANDS

National, mandatory when leaving your niche

SECRECY

Can be cost/efficient, risky, requires secrecy agreements with employees = extra payments

NICHE PROTECTION

Patent not worthwhile

SPEED PROTECTION

Patent useless

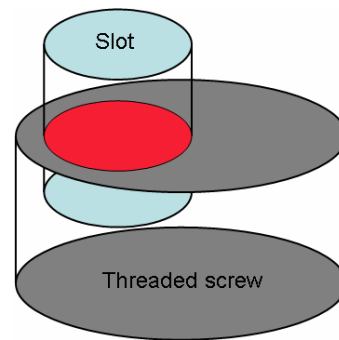
KEEP the BRAINS!

They contain your knowledge

Patents – interaction and impact

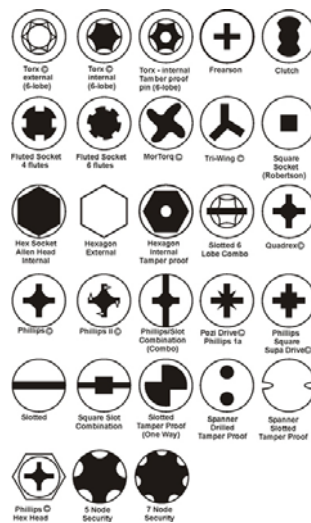
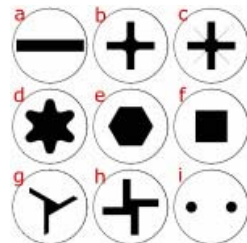
Any one **may file a subsidiary patent on an invention, which improves an existing and patented invention**

No one **is allowed to exploit the subsidiary patent without the permission of the owner of the existing patent**



Subsidiary patents are door-openers to cooperation and license revenues

Subsidiary patents are door-openers to cooperation and license revenues - and only Man's fantasy sets the limits



Protection Strategies, IP

1. Production

Secrecy agreements, niching, stock options, Non-compete obligations, patents, design, trademarks

2. Consultancy

Non-compete obligations, stock options

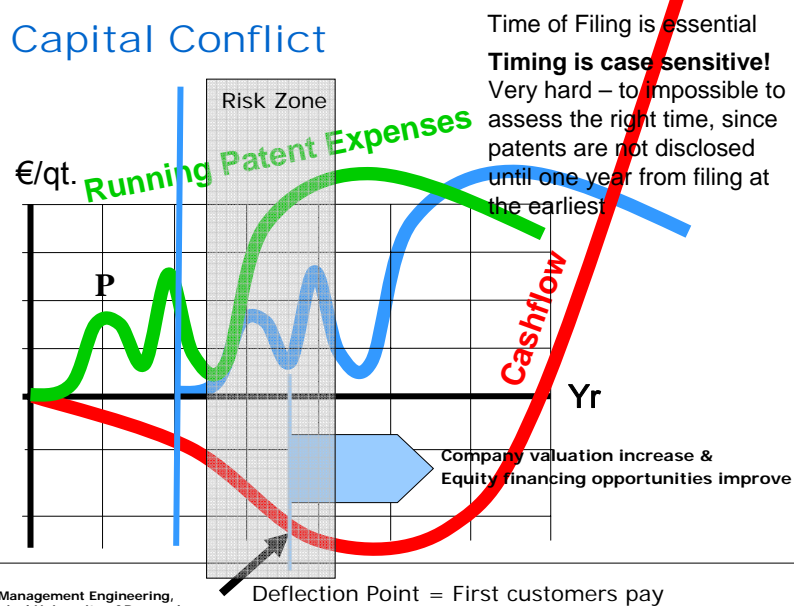
3. ICT

Speed protection, niching, stock options, secrecy agreements, lock up – and patents

4. Biotec

Patents, stock options

The Capital Conflict



Management

Management is ---
--- the Noble Art of ---
---- achieving Results ---
--- by means of *OTHER PEOPLE*



Leadership: *Create the Appropriate CONTEXT*

1. **Develop and maintain *corporate values*** like honesty, trust entrepreneurship, good behaviour, social responsibility - **and a sense of business and profit**
2. **Set the course = combine values with *realistic and logic objectives*** that are easy for everybody to act upon => develop a corporate culture with a high degree of self governance = set realistic winning criteria
3. **Make People feel good and appreciated – with career options**
4. **Corporate culture** needs continuous maintenance and development
5. **Set your team: be specific when hiring (and firing)**
6. **Set the standards by being *a role model yourself***

Management: *competencies and routine*

- **Expert on the business system** – “get your company up under your skin”. It is about developing a routine that allows you to understand and act upon information about
 - Sales
 - Economics – in particular cash flow and cash in hand
 - Human resources
 - Logistics
- **Manager in your own right** – one to respect and trust and with a clear understanding of the situation of your company : short term and long term. (*The crew needs a skilled captain*)

Personal preconditions for being a good manager:

- a. *Integrity*
- b. *Some intelligence*

What is a Business Plan?

Two things:

1. The detailed rationale behind your business
2. The project plan for the business start-up

Ad 1: Information, analysis, calculations and conclusions to support the assumption that this can be achieved, and that the business project is applicable and realistic

**Ad 2: There is a goal – and it is specific
There is a process described by**

Actions to conclude
Resources involved

There is a time table with some milestones

There is a budget with a cashflow projection

1+2: there is a business opportunity, and this is how we will exploit it.

The contents - 1

The executive Summary:

Background - very brief – then:

- *the Five P-Approach:*

1. *Pain-value-jury*
2. *Potential*
3. *People*
4. *Platform*
5. *Project*

Executive summary *the single-most important section*

GetBetterQuick Ltd. is a new knowledge-based company with a high growth potential within on-line monitoring of physiological recuperation of out-patients in orthopaedic retraining programmes.

Orthopaedic retraining is costly, it requires extra and inconvenient treatment, it is often neglected for same reasons, and as a result, a high number of patients do not recuperate to full performance. It goes without saying that this is not an ideal situation.

Our system allows early discharge plus cost-efficient and convenient retraining and recuperation. Saving potentials of efficient treatment - to society, to healthcare and to patients - are high. In Scandinavia alone, the annual economic savings of a 10% reduction of bed days of orthopaedic patients, which is a realistic measure, are as high as 100 mio. €/yr.

End-users are patients with an internet connection in their homes. Customers are orthopedic departments. Users are physiotherapists and orthopaedic MDs. Buyers are hospitals and clinics.

First 3 prototype systems have finalized clinical verification successfully. Results are published.

The founding team comprises ---, M.Sc., --- MD, and --- MBA, with a background as a CEO of ---.

It is our ambition to develop GBQ Ltd. into an international market leader within internet-based on-line monitoring of patients in retraining programs in their homes.

We envisage to establish within the next five to six years, a company with an annual turnover above €25 mio., with more than 80 employees in high quality jobs and an export of innovative new monitoring systems, exceeding €20 mio. /yr.

Several major players in the market indicate good exit opportunities, and GBQ Ltd is expected to be ready for acquisition some 4 – 6 years from kick-off. Valuation could amount to 30 – 50 mio. €.

We plan a quick expansion to this level through one or two funding rounds.

Our total capital requirement is €2 mill. The founding team so far has invested €100.000

The contents - 2

• Market Research and - Analysis:

- *Customers in numbers, types, geography, etc.*
- *Competitors in types, advantages and weaknesses*
- *Market analysis f.x. acc. to Michael Porter*
- *Entry barriers (technical, legal, etc.)*

• Technology:

- *How does it work?*
- *Why is it superior?*
- *Patent situation*
 - *Freedom to operate*
 - *Efficiency of claims as entry-barriers*
- *Production issues*
 - *Bill of materials, (BOM) and unit costs*
 - *Necessary equipment, machinery etc.*

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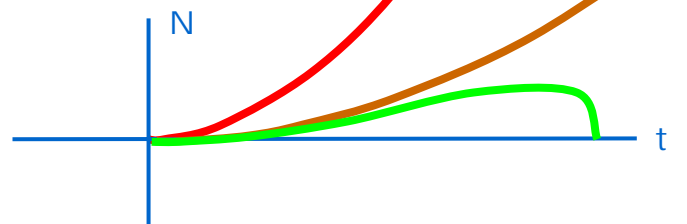
The business development scenaria:

Qualified guesswork:

- Establish sales of units in a time domain, market A.
- Repeat for market B etc.

Quantify the consequences:

Goods/hours sold per Month



QUESTIONS?

- Join 42705
*Knowledge based entrepreneurship
for Ph.D students*
- Starting Tuesday 2 April 2013
- 8 afternoons on business formation
- Create your own start-up project

Mail johe@dtu.dk to register