ESA Training for Industry

From R&D to business development: Financing Innovative Projects

8 June 2006

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A word on SineQuaNet

1. The SME Initiative consists in a variety of measures, ranging from funding of technology actions to delivery of Training.

2. SineQuaNet (Space Intelligence, Engineering and Quality Network) is co-funded by the EC, its purpose is to complement the range of actions tailored to improve the participation of SMEs in ESA Programmes.

3. SineQuaNet is an expert network providing technical and engineering support to small- and medium-sized enterprises (SMEs) in ESA Member States and European Cooperating States, who already are operating in or wanting to enter the space sector.

4. A SineQuaNet survey on SMEs training needs has identified today’s topic as most useful.
Types of R&D projects that can attract funding and gain market share.

Adding Value to Your R&D Project Value and Securing it.

Coached by
Dr. Patrick CORSI
Brussels
“One survey of executive opinion has noted the widely held belief that the economic success rate of R&D projects would increase by half if marketing and production people fully exploited them.”

Edwin Mansfield
OBJECTIVES

• **Empower** with Innovation Values
• **Design** Projects that Get Funding
• **Obtain** Results that Win Markets

APPROACH

• **Focus** at the R&D–Marketing interface

METHOD

• **Coupling** marketing with R&D projects efforts
SESSION 1
1. What Innovation Means
2. Building Project Value
3. Integrating with Business: Injecting New Value into Emerging Markets

SESSION 2
4. Marketing Advanced Technology
   • Strategic Marketing
   • Market Analysis
5. On Selling and Sales Plans
THE CASE STUDY

A case that embodies R&D, technology, a Project and a marketing effort

Group work through three sessions

Session 1
Establish your base camp – p.33-38

Session 2
Value your offerings - p.57

Session 3
Segment your market – p.85
Position your offerings – p.92
How would you Build Market Value from Your R&D Project?

Seek new value territories

Traditional thinking stays within a Red Ocean

Build three values:
- Project Value
- Results Value
- Market Value

And align them!
1. WHAT INNOVATION MEANS

**ESA – ESTEC – FIT, 7-8 June 2007**
The Making of an Innovation is First a Systemic Process

Market pull

Innovation

Technology push

Suppliers

Investors

Customers

Universities
Research centres

Policies

Competitors

Technology push

Market pull
Growth isn’t a Linear Process

Two hard cracks, full of uncertainty, plus one softer mutation
Same From User’s Perspective

See how you can dwell successfully in each phase?
More on User Perspective!

- Product performance
- Level of performance required by average users
- Unfilled need
- Excess quality
- Most customers uninterested in this region
- Technology is "good enough" and therefore irrelevant. User experience dominates.
- High technology. Consumers want more technology, better performance
- Consumer commodity. Consumers want convenience, reliability, low cost...
- Transition point where technology delivers basic needs

Time
Which Means That Two Mindsets Prevail in Your Organisation

Is your mindset product or market centric?

QUIZ: Test your mindset type on a few examples
“The three legs of product development in the mature, customer-centered phase of a product. When the technology matures, customers seek convenience, high-quality experience, low cost, and reliable technology. A successful product sits on the foundation of a solid business case with three supporting legs: technology, marketing, and user experience. *Weaken the foundation or any of the legs and the product fails.*”

A. Rizzo
Therefore, Innovation Means all this Together

1. Three steps
   • To Research / Invent
   • To Transfer
   • To Commerce

2. Methods, techniques and tools, plus practices
   (there are good and bad practices)

3. To know what we know
   To know what we don’t know
   To scope the limits of the knows & don’t knows
The Underpinning Model is an Ethnotechnology One

Innovation bridges and aligns 3 planets

Can be at any of these levels
- Scientific
- Technological
- Methods
- Processes
- Structures
- Business models
- Design

The question is to triangulate at Knowledge level
Aren’t we in a Knowledge Society?

“Research + Transfer + Commerce.”
7 Questions About Innovation

1) What helps you to become a successful innovator?
2) Do you have to pay a price to be an innovator? Which one?
3) What are the rewards to be an innovator?
4) What are in your opinion the top 3 criteria for successful innovation?
5) How can we create a culture that supports and sustains innovation?
6) What do you think stops/slowes down innovation?
7) Do you think becoming an innovator can be taught?
What is Innovation?
5 types of Innovation

1. Introduction of a new product or qualitative change in an existing product (or service)
2. Process innovation new to an industry
3. Opening of a new market
4. Development of new sources of supply for raw materials or other inputs
5. Changes in industrial organisation

Courtesy A. CASTIAUX
Barriers to Market Adoption of Innovations *(Examples)*

1) Existing technologies at sites
   
   CAD environments

2) Needed specific user profiles are unavailable
   
   Frequent, trained, fast retrainable users

3) Incumberence added
   
   Tradeoff usability

4) User company size
   
   Still with large cocooning Cies, not diffusing

5) Many decision makers still skeptical of e.g. immersion tech.
   
   How to change minds, convince management?

6) Culture clash, e.g. Admins vs Operational
   
   « How much gas am I going to save »

7) Digital Divide
   
   Information Society for all?
How Would You Stimulate Innovation?
Some Organisational Issues

Innovation: a natural talent of the organisation or it can/should be learned?

Does people creativity lead to the entire organisation creativity?

How would you arouse/spark/instill a culture that fosters innovation?

How to create a portfolio of innovating projects that are profitable?
If you don’t stimulate innovation, the erosion of the value of your offerings will gradually prevail.
The First Dilemma of Innovators

- **Opt for Incremental innovation?**
  - **Is Continuous improvements of existing things**
  - **Interactions with existing customers to identify expectancies**
  - **Monitoring of existing processes to optimise them**

- **Opt for radical change?**
  - **Is market shift, technology breakthrough**
  - **Firms are often not aware of early (weaker) signs**

- **Manage a portfolio of innovations**
  - **Balance between both above types**
  - **Stay in resonance with the organisation’s competencies and skills (technologies, markets)**

Adapted from A. CASTIAUX
Why Innovate?
5 Unique Benefits for the Entreprise

1. Enable the shifting of value to your advantage
2. Differentiate your offering while yielding a competitive advantage
3. Confer a hold on key determinants of your competitiveness
4. Enable to anticipate changes
5. Enable the integration of your customers into a unified model

Why Not Innovate?
What Happens if You Don’t Innovate?
2. BUILDING PROJECT VALUE

Making Value Emerge from a Project

In Search for Value in an R&D Project

ESA – ESTEC – FIT, 7-8 June 2007
Where can Value Emerge from?

- The signals that will reveal tomorrow markets are still weak today. Can you sense them?
- They nonetheless build the structure for tomorrow competition (embodied into value systems)
- Can you raise an interest in these signals – so that it brings opportunity to meet market?

Therefore value weak signals and ignore shaft:
- Analyse sources of value shifts in markets that impact today’s business model: how is your industry evolving? (notions of utility, price)
- Filter out the smart
- Re-structure company activities accordingly, Focus and execute
Basic Criteria for Building Project Value

• Quality and scientific & technical innovation
  – Relevance wrt objectives
  – Right degree of innovativeness: knowledge, technology, process, organisation...
  – Relevance of approach: well conceived methodology and well documented workplan

• Added value to existing work differentiation

• Economic, scientific and technical development perspectives

• Resources, partnership, management
  – Monitorable objectives? Credible milestones?
  – Quality of management? Competent partnership?
  – Appropriate resources wrt objectives?
Use Blue Ocean Strategy as Appropriate

**APPROACH**
When redefining market borders to get away from (Red) competition

**METHOD**
- Scan empty spaces left by markets
- Create new spaces where value makes existing competition obsolete (Red ocean)
- Outsource activities that makes prod/distrib weight
- Reduce production and distribution costs
  - Then seek organic growth

“Do not offer but “respond”: build an ability to respond
- Response upon request
- A perpetual movement of interacting, not just “offer vs demand”
Manage IP territories

About IPR
  - Where are intellectual assets, who owns them?
  - Where will they be transferred by and after the project?

List Background information
  - The assembled legacy items put in common
  - Make an exhaustive list

• Foreground information
  - The ongoing work of each partner

• Set a contract hat specifies joint rights and obligations
What External Eyes Often Look for in a Project

• Committed participants!
  – No passengers, “observers”…
  – Has a multiplier effect
  – Benefit goes beyond participants
  – Has technological and economical impact
  – Supports norms, standards, policies
• Has vision for real needs
• Addresses real issue/need
• Is aligned with organisation’s objectives
• Has SMART objectives
• Has an approach and a method to reach them
• Reasonable durations, relevant deliverables, justified costs
  ➢ They continually see “around the corner”: do the same!
  ➢ They translate the feeble indications into some understanding
The Magic*Eye of an Innovative Project

Has three aspects

• **INNOVABILITY**
  Reveals the ability to bring an idea towards a commercial success – continuously
  \[\text{idea} \rightarrow \text{project} \rightarrow \text{product} \rightarrow \text{commercial success}\]

• **DIAGNOSTIC**
  Enables the determination of critical zones in the project

• **MEASURE**
  Facilitates the orientation and measure of innovative actions
A Global View on the Evaluation of Innovative Projects
4 Examples of Projects Evaluations

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The Art of Managing Projects has Five Dimensions

• Financial and administrative management
  – Partners’ budget lines
  – Legal aspects
• Communication
  – Exchanging, reporting
• Coordination
  – Workpackages
• Cooperation
  – Steering committees…
  – Conflict resolution, risk management

• Technical
  – What scientific or technical direction?
  – Which standards?
  – Which impacts on standards?
  – What scientific / technical competition?
THE CASE STUDY

- **Setting**: 3-4 groups of 4-5 participants each
- **Objective**: delineate your project
- **Result**: a fact sheet + draft market. plan that sells
- **Approach**: establish a base camp (you agree on a common basis: *your starting point*)
- **Method**: answer questions step by step
  
  *You are expected to inject the knowledge of your field at all appropriate times*
- **Resources**: your group discussion, with dedicated inputs from all participants
- **Delivery**: a 1 page fact sheet + draft market. plan
THE CASE STUDY: Your Starting Point

• EXERCISE 1: “Establish your base camp”

  • Express your vision (3-5 lines): What is it? Context?

  • What is the link with your domain of activity (5-7 lines)

  • Why does it make a project? (in what sense) (4-6 lines)

  • What are the difficult points?

  • What is the degree of innovation?

  • Which expected benefits?

  • Who can be part of this project?

  • With which motivation(s)?
THE CASE STUDY: Scoping the Perimeter

- What is “IN”?  
  - A  
  - B  
  - C

- What is “OUT”?  
  - A  
  - B  
  - C

- What is essential?  
  - A  
  - B
Do a SWOT Analysis

- Scope your knowledge: your Strengths and Weaknesses
- What Opportunities out there?
- What are the Threats?
  - Competition moves?
  - Legacy products?
  - Regulations driving?

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<th>Strengths</th>
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THE CASE STUDY
THE CASE STUDY: Write the Synopsis

• Kipling’s Six Masters on a single page:
  – Rationale - Why?
  – Objectives - What?
  – Approach - How?
  – Method(s) – How?
  – Means – With What?
  – Results – Towards What?
  – Partners – Who?)
  – Contact Point!

• Use it to:
  – Validate the main thread
  – Search for the best partners
  – Eliminate the others

• A difficult step that ends in a clear vision that is sharable – *or nothing!*

THE CASE STUDY.
What is an Objective?

- As an exercise!
- Use them to:
  - Make the team work
  - While sharing same objectives
  - And evaluate the results obtained
- Distinguish between:
  - Aim
  - Objective
  - Goal
  - Purpose
The Qualities of a Well Integrated Project

- Structured
- Complete
- Homogeneous
- Continuous
- Clear
- Transparent
- Without complacency
- Locks doors to loose interpretation (“seeing around the corner”)

- Presentation does count much
  - Not luxury not poor
  - Yet serious
  - From head to bottom
  - Illustrated
  - Captivating
  - Sharp ideas
  - Into efficient prose
  - Solutions put forward
Define Your Management

• Management Structure
  – 2 levels: direct + steering

• Admin Management
  – Reports
  – Excel sheets everywhere
  – Expenses
  – ...

• Project Direction
  – Scientific & Technical
  – Development

• Divide the work
  – 2-3 levels: work packages, tasks, subtasks

• Control the work
  – Reports everywhere
  – Motivation
  – Sanctions
  – Etc.
Risks and Contingency plans

- Elicit risk factors

- Risk factor 1
  - Title
  - Codename
  - Definition
  - Description
  - Mitigation method

- Risk factor 2
  - Etc.

- Advantages:
  - Shows an attitude oriented risks mitigation
  - Anticipatory, not corrective culture
  - Fosters sharing observations and phenomena

- Requires a discipline
What Should be Made Perfect

- Objectives
  - Concised
  - Clear
  - Make them S.M.A.R.T.

- The first three pages
  - Where opinions are formed
  - Clear, ambitious, realist

- The positionning of your project
  - Clear
  - Clear limits

- About its SWOT
  - Insist on strengths
  - Do not make weaknesses ignored: mitigate them
Your SWOT Knife is Useful Everywhere

- **STRENGTHS**
- **OPPORTUNITIES**
- **WEAKNESSES**
- **THREATS**

It's a compass to get and explain your situation point.
Then Show Where Value Goes

It’s a chained process

Make you supply and delivery chain explicit


Understand the forces that contribute to your business value chain by preparing value chain diagrams.

• Who is the client of whom?
• Which actor dominates the chain?
• Which draws value?
• Are there lead users - who?
Pull Out Who Drives Value

Which forces work on markets?

Make you supply and delivery chain explicit

Ex.: G2B2C for carbon transportation impact

Understand the forces that drive markets (market drivers) by drawing influence paths

- Who influences whom?
- Which actors can edict regulations?
- Standards and norms?
- Benefits on image - who?

GOVERNMENT REGULATION AGENCY

SUPPLIER

USER/CONSUMER
10 Simple Tips for Winning Your Technology Marketing Strategy

- Tip 1. - Be the leader somewhere
- Tip 2. - Be wary of cycle of hype
- Tip 3. - Adapt from strategic marketing plan
- Tip 4. - Re-segment to your advantage
- Tip 5. - Always carry a SWOT knife with you
- Tip 6. - Strive hard for differential advantage
- Tip 7. - Be unique through your USP
- Tip 8. - Mix 4P’s harmoniously (see later)
- Tip 9. - Play the life-cycle story of products/services
- Tip 10. - Remember that value can’t stay still
A Figure is Worth 1000 Words

ICT spending on public administration as percentage of GDP, EU member states, 2000

Source: EITO 2002

Always: Title, N°, Legend, Reference, Source…
And Your Anticipated Results

- Land your project
  - Define your results = ‘what’
  - Under which embodiments?
  - When?
  - Who owns them?

- But what is a “result”?

- QUIZ: what are the different types of results?

- Announce right number of deliverables
  - Not too many
  - Not too few
  Status: confidential, public, etc.
What’s in a Result?

A R&D project RESULT is

- “A collection of information (stable text, accompanying documentation, software, hardware, or both, etc.)

- “Generated as "Foreground Information" under a RTD contract, by at least one contracting partner

- “Which bears a leading-edge value, as judged by the analysis of the state-of-the-art and which can possibly be converted into a favourable position in some market – existing or emerging

- “The timeliness of which being appreciable by third or competitive parties.”

P. Corsi, 4 February 1998.
Question: What are You Going to do with Your Results?

- From idea to market with a right sense of timing
- Estimate results obsolescence
- Qualify the impact of a result
- Where is IPR (going)?
  - Who will possess what, how, until where and when
- Which standards do you take or favour
- Which funding relays to anticipate?
- Which structures will be adequate after the project?
- Get marketing skills to walk through an exploitation plan towards potential markets
- And prepare added-value solutions
Answer: Make Value Curves that Differentiate

The example of “Cirque du Soleil”
Shifting Towards New Value Spaces

As long as value curves do not converge

- *Resist the tentation of innovation at all costs*
- *And improve and widen your offer*

<table>
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<tr>
<th>Utility</th>
<th>Does the result offer exceptional usefulness? Are there compelling adoption reasons for a buyer?</th>
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<tr>
<td>Price</td>
<td>Can the price be affordable?</td>
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<td>Cost</td>
<td>Does your cost structure enable you to reach your target cost?</td>
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<tr>
<td>Adoption</td>
<td>What are your barriers to entry? Resistance of adoption?</td>
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Control regularly your value curves: they are a signal to move ahead
Planning Results as Products/Services

• Preparing value-added solutions
  – A product is a set of value-adding solutions
  – To prepare this set, “materialise” the offer:
    • Create an identity (even a brand name) for the solution that can “grab” your channel targets
    • Outline the solution components
    • Use the information compiled in prospecting and selling
    • Localise your product
  – Do not forget to reinforce the content protection of your product
Planning Results as Products/Services

• Outlining the solution components
  
  – Every solution contains 5 major components

  1 The need it addresses
  2 Favourable conditions
  3 Unfavourable conditions
  4 Benefits
  5 Deliverables
Planning Results as Products/Services

- Outlining the solution components
  - State the need addressed by the solution
    - As simply and powerfully as possibly
  - Favorable conditions = What already is or will be in place in addition to the deliverables provided
    - To identify the favorable conditions ask:
      - 1 What existing favorable conditions will be protected or retained as a result of the solution?
      - 2 What existing favorable conditions will be enhanced?
      - 3 What new favorable conditions will be added/created?
Planning Results as Products/Services

• Outlining the solution components

  – Unfavorable conditions = Negative conditions you’re going to have to handle, whether the client knows these or not…
  
  – **To identify the unfavorable conditions ask:**
    – 1 What existing unfavorable conditions need to be eliminated?
    – 2 What existing unfavorable conditions can be minimised?
    – 3 What potentially negative conditions can be avoided?
  
  – Benefits = Advantages that the client will obtain as a result of using the solution
  
  – Deliverables = Tangible products associated with the solution and offered as a result of the engagement
EXERCISE 2: “Value Your Offerings”

- Develop a list of potential value-added solutions from your product
- Develop an outline for one of the listed solutions
- CheckPoint: Can you answer these questions:
  - “How do I think I will overcome competition? (Market power, tech superiority, marketing strategy, influence…?)
  - “What sets me apart from a ‘me-too’ competition?”
3. INJECTING NEW VALUE INTO EMERGING MARKETS

A Journey from R&D to markets
Analysing “weak signals” from markets

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A Solution Looking for a Problem?

Somebody looking at Technology

Or Technology looking for Somebody?
There are Two Different Views on Technology

Hitech Marketing is the art of going 1 to 2
It’s better to segment category wise, not product wise
Then position within category
Too Many Techniques Fill the World’s R&D Shelves

• An R&D “result” doesn’t make a product
• A product doesn’t make a success story
  And most R&D returns to dust…
  …the day before it was said to impact market decisively

• What was missing that was possibly critical?
  – Really completed R&D?
  – Really aligned with market?
  – User really in the loop?
  – Client really in need, in want, “in authorship”?

Is your technology one of those? Analysing failures is a precious must
Example: the Infoscope from IBM (1998)

Technology?
Product?
Market?
Other?
Thinking Innovation:
What Does it Mean for the User

- What links between innovation and competitiveness?
- What links between innovation and *sustainable* competitiveness?
4. MARKETING ADVANCED TECHNOLOGY
Definitions of Marketing

• The set of methods and tools which an organisation has or uses in order to promote, in a given target audience, a behaviour favorable to its own objectives

• EXERCISE: Why would You need marketing for?
Products Classifications (cont’d)

• Consumer-goods classification
  – *Convenience goods*: customer purchases frequently, immediately and with a minimum effort
  – *Shopping goods*: customer purchases them by comparing quality, price, suitability and price
  – *Specialty goods*: have unique features and strong brand
  – *Unsought goods*: are goods that consumer does not know or he knows but he does not think to buy them
Products Classifications (cont’d)

- Industrial goods classification
  - *Material and parts*: are goods that enter the manufacturer’s product completely
  - *Capital Items*: are long lasting goods that facilitate developing and managing the finished product
  - *Supplies and Business Services*: are short-lasting goods and services that facilitate developing and/or managing the finished product
Services Classification

• The service component can be a major part of the total offer
  
  – *Pure tangible goods*
  – *Hybrid*
  – *Major service with accompanying minor goods and services*
  – *Pure services*
Characteristics of Services

• Services own distinctive characteristics. These create special challenges and opportunities

• *Make Services tangible!*

  – Customers can’t sample services
  – Augment tangibleness through:
    • Visualisation
    • Association
    • Physical representation
    • Documentation

  – The service itself is inseparable from its creator/seller

  – Services are highly perishable and can’t be stored
  – Service market has fluctuating demand
Strategic vs. Operational Marketing

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<th>OPERATIONAL MARKETING</th>
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<td>▪ Market Analysis</td>
<td>▪ Promotion campaigns</td>
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<td>▪ Market Segmentation</td>
<td>▪ Direct marketing and salesmen management</td>
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<td>▪ Product planning</td>
<td>▪ Merchandising and products distribution</td>
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<td>▪ Pricing</td>
<td>▪ After sales services</td>
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STRATEGIC MARKETING

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Your Marketing Strategy

Market Research
Market Targeting

How do I perform Marketing?
By establishing just this

Objectives
Strategic focus
Target clients
Competitive issues
Differential advantages
The Marketing Mix
Implementation
Sales
Management and control
The Philosophy of Marketing

Why Marketing?

“A business is set apart from all other human organisations by the fact that it exists to serve a market.” *

“Business is about making money from satisfied customers.” **

(* P. Drucker - ** J. Egan)
The Philosophy of Marketing

What is Marketing?

“The management process responsible for identifying, anticipating and profitably satisfying customer requirements.”

“All those activities concerned with the definition, production, distribution and consumption of a product or service.”

(British Institute of Marketing)
The Overall Marketing Strategy

The 3 Key Objectives of Marketing

1. The identification of market segments where an organisation can attain leadership for its goods or services
2. The identification or development of differential advantage
3. The development of plans to deliver the product to the chosen market for profit
Marketing Programme Development

Product / Service Strategy

Positioning Strategy

Market target

Differentiation Strategy

Pricing Strategy

Placement Strategy

Promotion Strategy
MARKET ANALYSIS & CUSTOMER NEEDS IDENTIFICATION

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Organising Your Market Research

Why Market Research?

*Market knows, not you necessarily!*

*Analyse markets*

*Identify market needs*

*Align with Needs, not your ideas*
Organising Your Market Research

Stages in Market Research

1. Establish Objectives, Terms of Reference, Problem Definition
2. Desk Research
3. Field Research
   - postal (email?) questionnaires
   - telephone interviews
   - personal interviews
   - observations
   - focus groups
4. Editing
5. Analysis
6. Report writing
7. Recommendations

Then... Actions
Practising Your Market Research

Focus on Key Marketing Tasks

- Market segmentation and analysis
- Reveal competition
- Target market selection
- Toward positioning your product or service
The Practice of Marketing

Segmentation

“The process of dividing large markets into smaller groups of customers with similar needs, interests and responsiveness to marketing approaches”

Leads to coherence in marketing

Identifies possible niche sectors

Can result in market leadership
Practising My Market Targeting

Focus on Key Marketing Tasks

My 1st Segment, within the analysed segmentation

Effective positioning
- my SWOT analysis
- scenarios
- iterate wrt positioning

My Positioning declaration
- with differentiation
- work out the formulation

From characteristics to benefits
- for the customer
- over competition
Segmentation Analysis

Ask the Key Questions

1. How is the market segmented?
   - geography, demography
   - communication circuits
   - common problems, benefits sought

2. Which are the most attractive segments?
   - size, growth rates
   - profitability
   - maturity
   - attitude to risk
   - attitude to innovation
   - who are the “drivers”

3. Competitive analysis
   - how many and who
   - established market leaders
   - barriers to entry
   - brand loyalty
Segmentation Analysis

Ask the Key Questions

Establish the match between:
- segment needs
- company strengths
- competitor strengths

Then Select the Target Segments
Exercise

• EXERCISE 3: “Segment Your Market”

  – 1 Define your general market
  – 2 Identify your market segments
  – 3 Argue the segmentation in terms of your strengths and weaknesses (What are the key questions to ask?)
  – 4 Define the nature and relevance of culture and language issues in your market segments

  – **CheckPoint 1**: Express fully your 1st priority segment in one short, simple sentence.
Now Go Towards Positioning

SWOT Analysis

STRENGTHS

Opportunities

WEAKNESSES

THREATS
Plot Competition and You in 2D

Product Positioning Axes

- Product features
- Product benefits
- User category
- Perceived quality
- Perceived user service
- Image
- Price
- Competitiveness

YOU!
Where are You/Your Competitors?

Positioning

High value

Low Cost

High Cost

Low Value

YOU!

YOU!
The Positioning Declaration

Mission Statement

To be the tube fabricator and welding supplier of choice for quality, delivery and price. Driven to fulfill the needs of our customers, employees and shareholders.

Where ideas take shape in tubing!
Positioning

• **What is it?**
  - An organized process for defining the entry point in the mind of your clients and targets
  - A way of thinking about your market and what’s important to the people therein

• **What are its goals?**
  1. To be perceived as “somebody special to some special bodies”
  2. To leverage your insider’s understanding
  3. To contribute to and support your awareness of market
  4. To establish credibility wrt key players in your market target
Positioning

- What to do to position yourself?
  - Prospects clients need to answer at least 3 questions before they consider meeting with you to discuss using your services

  1. *Who* are you?
  2. *What* do you do, and for *whom*?
  3. *What value* can you bring to *their* operation?

- You can help them answer these questions by first determining the answers to your own satisfaction
Positioning

- EXERCISE 4: “Position Your Offerings”

  - Declare your product positioning through 1 *perfect sentence*.
  - Systematically transform your products/services characteristics into customers advantages

  - CheckPoint 2: Can you now answer these 2 questions:

    - “Why do you believe you will succeed in this market? mean: specifically YOU.”
    - “Why customers would choose YOU?”
A Working Fiche

Appropriate analysis of market size
  Definition of “Market niche” and “Mass Market”
  How to know more about the market you are going to address:
    – Statistical analysis
    – Personal contacts
    – Other sources

Factors to classify potential competitors:
  – Geographical markets served
  – Target customer segments
  – Product quality
  – Technology level
  – Cost position
  – Price policy
  – Service

Specific knowledge about expansion
  – Information on the expansion area
  – helps plan future activities and set up specific products and organisation models
  – “capture local customer taste”
  – information on cultural aspects
  – local partnership (distributors)
  – business culture
After Positioning: Differentiate

Differential Advantage

Express what contributes to differentiate your value propositions in business today

Prepare your Differentiation statement

What benefits does a segment of clients value?

What strengths must a firm have to offer these benefits?

Do we have, or can we acquire those strengths?

How do we compare with competitors?

What are the barriers to entry?

What barriers can we erect?
Transform (technical) Features into (differentiating) Benefits

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefit (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved communications</td>
<td>24%</td>
</tr>
<tr>
<td>Better decision making</td>
<td>11%</td>
</tr>
<tr>
<td>Greater efficiency</td>
<td>10%</td>
</tr>
<tr>
<td>Fewer physical prototypes</td>
<td>10%</td>
</tr>
<tr>
<td>Fewer mistakes</td>
<td>7%</td>
</tr>
<tr>
<td>Lower production costs</td>
<td>5%</td>
</tr>
<tr>
<td>Faster time to market</td>
<td>4%</td>
</tr>
<tr>
<td>Improved functionality</td>
<td>3%</td>
</tr>
<tr>
<td>Greater competitiveness</td>
<td>3%</td>
</tr>
<tr>
<td>Improved quality</td>
<td>3%</td>
</tr>
</tbody>
</table>

How would you explain the benefits of your Virtual Reality Rendering System?
Make the Three Legs Stand Firm by Adding More

Displays
Interfaces
Usable Software
Data Analysis
Platform Compatibility

Comfort/Ease of use
Preference
Side Effects
Real world gains

Cost/Benefit Proofs
Usability
Expectations and impressions

Other stuff!
Other stuff!
Other stuff!

From S. RIZZO, 2004
Getting to Your USP - Unique Sales Proposition

Remember

Any one feature may have different benefits

A benefit is not universal: a benefit to person A may be a disadvantage to person B

The personalised benefit is what he/she will buy

Be Unique (= alone) and Leading (= somewhat, somehow, somewhere).
Your USP is Based on the Personalised Benefit that the Customer will Buy

Benefits: What the Client Buys

Feature: what the product is
Benefit: what it does
Personalised benefit: what it will do for him/her

Benefits will normally be ways of improving:
efficiency, performance,
economy, utility, status,
competitiveness, safety
There’s never one only Product!

Speaks about the “Whole Product” concept
Makes think of partnership

Generic product

Expected product

Augmented product

Potential product

The Levitt Model

The Whole Product Concept
Knowing That Value Shifts From Products to Services

Products or Services? The natural shift of usage of business things

OFFERING

% Product % Service

(Innovators) (Conservatists)

TIME LINE
High-tech is About Leadership

Net margin as a function of Market Leadership

You must lead somewhere!

(Average of 168 Product Lines,
Source P. Doyle, Warwick University)

<table>
<thead>
<tr>
<th>Market Position</th>
<th>Net Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>17.9 %</td>
</tr>
<tr>
<td>2nd</td>
<td>5.8 %</td>
</tr>
<tr>
<td>3rd</td>
<td>- 2.8 % (loss)</td>
</tr>
</tbody>
</table>
Estimate Early Pricing tips for your CP’s

• EXERCISE 5: “Value Your Offerings”
  
  – Develop a list of potential value-added solutions from your product
  – Develop an outline for one of the listed solutions
  
  – CheckPoint 3: Can you already answer these 2 questions: “How do I think I will overcome competition? (Market power, techno superiority, marketing strategy, influence…?)
  – “What sets me apart from a ‘me-too’ competition?”

THE CASE STUDY
Estimate Early Pricing tips for your CP’s

• **EXERCISE 6: “Differentiate Further Your Offerings for Value”**
  
  – Consider the solutions list from the previous Exercise
  – For each solution, and in different groups, estimate
    • The “production” price (cost based)
    • The market price (demand driven)
    • The competition price
  
  – CheckPoint 4: Express fully your USP in one simple sentence. Can you answer this question: “My differentiation advantages are… (by price or by value). And my strong message is…”
Getting Your Marketing Mix in Place

Iterate around the 4P’s several times

- **PRODUCT**
- **PLACE**
- **PROMOTION**
- **PRICE**

**TARGET MARKET**

*Differential Advantage*
Getting Your Marketing Mix in Place

The 4Ps must be set in harmony

THE MARKETING MIX

PRODUCT

PLACE

PRICE

PROMOTION

NB. This class won’t talk about Pricing, Distribution or (business) revenue models.
Estimate the (Total) Cost of Appropriation

- Adopting your product/service still needs real effort
- Time to solution can be large, not granted

- Users need be characterised well
- Installation & setup
- Training users is necessary

- Building applications is craft
- It requires careful trade-off:
  COST INCREASE \textit{versus} TIME GAIN

\begin{itemize}
  \item How much will your product concept cost your client?
\end{itemize}

\textbf{Method.} – What are the dependencies for the customer?
Ex: training, other products, servicing, etc.

\textbf{Application.} – Compute the TCO
End up Estimating Cost/Benefits Analysis (*examples*)

**JUST EXAMPLES:**

- How well do the current attributes of your technology fit the needs of the application, approach or target?
- Impact of your equipment on design approach, job profiles…?
- Means higher Cost of Appropriation?
- Liability issues (medical…)
- On-the-Job may disrupt normal operations?
- Minimize Risks due to errors?
- Less labor intensive to administer?
- Less costly than building physical mock-ups?
- Better control of … conditions?
- Better on-going performance measurement?
- Allows for independent practice?
- Etc.
Your Marketing Plan

• THE MARKETING PLAN

  – Guides implementation and control, indicating marketing objectives and the strategy and tactics for accomplishing the objectives

  – Typically includes details concerning targeting, positioning and marketing mix activities

  – Spells out what is going to happen over the planning period, who is responsible and the expected results
Your Marketing Plan

- **TYPICAL CONTENTS OF A MARKETING PLAN**

  - Executive Summary
    - Vision; Mission Statement
    - Major objectives and aims
  - Situation Analysis
    - Target Market (Segmentation and characterisation)
    - SWOT – Positioning - Differentiation
  - Marketing Mix Strategies
    - Product, price, placement, promotion
    - Differentiation. The “Unique Selling Proposition”
  - Evaluation and control
    - Performance indicators
    - Contingency plans
  - Financial projections and budget
5. ON SELLING & SALES PLANS

ESA – ESTEC – FIT, 7-8 June 2007
On the Nature of Selling

“Selling focuses on the need to convert a product or service into cash.”

“Selling is a craft skill and can be an art.”

“A process of communication aimed at establishing a prospect or clients’ perceived needs and translating them into wants for your product or service.”

(Theodore Levitt)
On the Process of Selling

To transform:
- Features into Benefits
- Needs into Wants

Initial requirements for selling

1. Ability to negotiate at high level
2. Territory management
3. Understanding of market requirements and corporate skills
4. Full use of relevant technical support
The Practice of Selling

From Communication

Persuasive communication
Face to face communication
The telephone and its uses
Letter Writing
Prospecting
Call planning
Closing the call

To Negotiation

(“I show up.” W. Allen)
The Practice of Selling

Analysis of sales results

1. Compare results with plan:
   - too ambitious?
   - too broad?
   - too narrow?

   What could you have achieved?
   Is the door still open?
### The Practice of Selling

<table>
<thead>
<tr>
<th>Analysis of Results</th>
<th>2. Was your information correct?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3. Were your tactics right?</td>
</tr>
<tr>
<td></td>
<td>4. Can you do better next time?</td>
</tr>
<tr>
<td></td>
<td>5. What is your next objective?</td>
</tr>
</tbody>
</table>

Improvement is the result of post call analysis

**NB.** Never lie, particularly to yourself
EXERCISE 8

EXERCISE 7: Selling rather means “being bought.”

Aim. – Why should I buy your concept product?

Method. – What is it that you sell? Can you say «Why I need this technology?» How well do the current attributes of your technology fit the needs of the application, approach or target. Analyse the existing competitive approaches (equipment, traditional & cultural products…)

Application. – Express why you and not somebody else.
Cost/Benefits Analysis:
A patient’s view (example)

Ask yourself these questions

• Cancel killing factors e.g. “Why make it simple if I can do it otherwise”

• Can I reach the same objectives with a simpler approach?

• Are some tool more suited to the task performance?

Using the latest in medical technology, modern podiatrists are able to study Phil’s ingrown toenail in virtual reality.
ANNEXES

What to Innovate about?
- Planning Innovation

ESA – ESTEC – FIT, 7-8 June 2007
### What to Innovate About? (1/3)

<table>
<thead>
<tr>
<th><strong>Mechanism</strong></th>
<th><strong>Strategic advantage</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Novelty in product or service</td>
<td>Offering something no one else can</td>
</tr>
<tr>
<td>Novelty in process</td>
<td>Offering it in ways others cannot match – faster, lower cost, more customized, etc.</td>
</tr>
<tr>
<td>Complexity</td>
<td>Offering something which others find it difficult to master</td>
</tr>
<tr>
<td>Legal protection of IP</td>
<td>Offering something which others cannot do unless they pay a licence or other fee</td>
</tr>
</tbody>
</table>
### What to Innovate About? (2/3)

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Strategic advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add/Extend competitive factors</td>
<td>Move basis of competition – e.g. from price of product to price and quality, or price, quality, choice, etc.</td>
</tr>
</tbody>
</table>
| Timing                     | **1st-mover** advantage – being 1st can be worth significant market share in new product fields  
                                **Fast follower** advantage – sometimes being first means you encounter many unexpected teething problems, and it makes better sense to watch someone else make the early mistakes and move fast into a follow-up product |
| Robust design              | Offering something which provides the platform on which other variations and generations can be built |
### What to Innovate About? (3/3)

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Strategic advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rewriting the rules</td>
<td>Offering something which represents a completely new product or process concept – a different way of doing things – and makes the old ones redundant</td>
</tr>
<tr>
<td>Reconfiguring the parts</td>
<td>Rethinking the way in which bits of the system work together – e.g. building more effective networks, outsourcing and co-ordination of a virtual company, etc.</td>
</tr>
<tr>
<td>Others?</td>
<td>Innovation is all about finding new ways to do things and to obtain strategic advantage – so there will be room for new ways of gaining and retaining advantage</td>
</tr>
</tbody>
</table>

Source: Joe TIDD et al., “Managing innovation”, Wiley 2001
With permission Annick CASTIAUX
Fiche for planning innovation (1/3)

- IDEA-PROJECT: ........ Date: .....
- Author: ..........
- What is the type of innovation ..................
- SOURCES OF SUPPORT
  What sources of assistance or of support are necessary in order to realise this innovation?
  - WHO? .......... WHY? ..............................................................
  - WHO? .......... WHY? ..............................................................
  - RESOURCES (€, others): ...........................................................
  - HOW O OBTAIN AND INCREASE THIS SUPPORT?
    ..........................................................................................
Fiche for planning innovation (2/3)

- SOURCES OF RESISTANCE
  What are the brakes to your innovation (people, policies, procedures, etc.) that can put an obstacle to the innovation process?
  - WHO? ............ WHY? .................................................................
  - WHO? ............ WHY? .................................................................
  - WHO? ............ WHY? .................................................................
  - WHAT? (organisational policy, etc.) ...............................................
  - WHAT? (psychological environment, etc.) ......................................
  - WHAT? (other dimensions.) ...........................................................
  - HOW TO OVERCOME THE RESISTANCES?
Fiche for planning innovation (3/3)

- WHA IS THE PLANND OBJECTIVE?
  - IMMEDIATE GOAL: .....................
  - IMMEDIATE ACTION: ..................... DATE: ..................

- WHAT ARE THE MEASURES OF SUCCESS?
  1. .................. 2. ..................
  3. .................. 4. ..................
  5. .................. 6. ..................

- ACTIONS TARGETED AT LONG-TERM:
  - Action : .................. Achievement date: .......
  - Action : .................. Achievement date: .......
Types of projects that can attract funding and gain market share.

Bringing Value
to Your Project Value.

Coached by
Dr. Patrick CORSI
patrick.corsi@telenet.be

ESA – ESTEC – FIT, 7-8 June 2007
Adding value by focused IPR

Tim Wood
• “there are few successful companies that have not followed a well structured approach to IPR”

Sir David Cooksey
Advent Limited
Why do we want IPR?

• To add value to your business
• To increase barriers to entry
• To comfort your investors
What can we protect?

- Invention
- Know how
- What it looks like
- Names, Marks & Brands
- Text, Music, Software
How can we protect it?

• Patents
• Secrecy
• Designs
• Trade Marks
• Registration of your Names
• Copyright, Software rights
Protecting your Invention

• Is it really Patentable?
• Should you patent it? - or
• Should you keep it secret?
• Should you publish it?
• Where should/can you protect it?
• Are you sure it is yours to patent?
Patents

• Is it: New, Novel, Inventive?
  (search: esp@cenet, uspto)
• What can be protected: product, method?
• Incremental value of additional patents
• Giving away your secrets - publication
• Could you make better use of the funds?
Patents – What do they really cost?

• Cost of searches
• Cost of filing first application
• Cost of foreign applications – PCT, European
• Annuities
• Insurance – should you insure?
• Other costs
  – Oppositions, defending your IPR
  – Taking action against an infringer
Protecting what it looks like

- Registered and unregistered rights
- Where to register: national, CDR, US
- Protection is quite specific
- Functional aspects
- Searches: oami, uspto
- Advantages: cheap to obtain and enforce; you get a number
Trade Marks
Developing a Brand

• Distinctive, not deceptive; ‘skilful allusion to the goods’
• Keep number of TMs to a minimum
• Take account of class of goods
• Defensive registration
• Use
• Becomes more valuable with use and time
Trade Mark - practical

- Searches (oami.eu.int, uspto.gov, icimarques.fr, societe.com)
- Choice of protection (national, CTM, Madrid)
- Can be renewed indefinitely
- Can guarantee your domain name
- What does it cost?
- Watching for copies
What about Names

- Company name
- Domain name
- Searches (companies register, CCI, search engines, phone books, etc.)
- Policing your name afterwards
Copyright and Software protection

• Copyright is mostly automatic; it belongs to the author unless assigned
• To take action you must be able to prove copying took place
• Software also enjoys some automatic rights
• Chips also enjoy certain protection
Who owns the IPR?

- Does it belong to your employer?
- Inventor
- Your trading company
- Separate holding company
- Specialist (BTG, Research Corp. Oseo)
- Tax; going bankrupt; off-shore
What about Licensing?

• As an alternative to marketing it yourselves
• To enter additional markets; produce income from remote markets
• To discourage competition
• To swap technology or settle a dispute; cross licensing
Getting started

• Finding a licensee
• What sort of licence (with patents? how much know-how? brand names?)
• Checking your IP protection
• Valuation: R&D, patents, know-how
• Putting a dossier together
• Warranties and due diligence
Licensing conditions

- Payment structure – incremental
- Consultancy
- Exclusive, sole or geographic
- Improvements
- Break clauses, duration
- Minimum royalties, non-performance
- Recording your licence
Conclusions

• IPR may be an unproductive use of capital
• Consider the options; then define a strategy
• Work out the role of IPR in your strategy and act accordingly
• Focused IPR is essential if you intend to raise venture capital
• Keep it up to date; defend and promote it
Finally

• If you are a technology company, focus on multiple patents
• If you market a product, invest in and develop one good brand
• Money spent on searches early on is seldom wasted
• You will probably need specialist advice to maximise your advantage
IPR and BUSINESS

Tim Wood
twood@corpdev.co.uk
BUSINESS PLANNING: AN INVESTOR’S OVERVIEW

Philippe DUBOIS
Agenda

Introduction
- Why write a Business Plan?
- The targets
- The Business Plan in details
  - Contents
  - Executive summary
  - Products
  - Marketing and sales
  - The team
  - Financial package
  - Investment proposal
- Conclusion
- A successful example: Syntem
Mistral is a regional Venture Capital company, created in 1990 in the frame of the European Seed Pilot Scheme and specialised in financing start-ups.

- **Capital:**
  - Entrepreneurs (12): 60%
  - Financiers (4): 18%
  - BICs (2): 22%

- **Unit amounts invested:** €50/150k

- **Areas of Investments:**
  - Sectors: special emphasis on Biotech due to local conditions
  - Geographic area: south of France
Agenda

- Introduction
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- A successful example: Syntem
BUSINESS PLAN: Why?

The BP is a construction tool
First of all, the BP is used to build his project

The BP is a management tool
Then, it is used to monitor the progress
BUSINESS PLAN: Why?

The BP is a marketing tool

Make them dream:
It must please and sell

Make them feel secure:
It must be serious and convincing
Choosing partners is probably the most important decision when starting a company.

What should the entrepreneur look for?

- Money
- Competence
- Credibility
Agenda

- Introduction
- Why write a Business Plan?

The targets

- The Business Plan in details
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- Conclusion
- A successful example: Syntem
BUSINESS PLAN: The Targets

The common entrepreneur’s view of its financial partners

How he should rather look at them!
BUSINESS PLAN: The Targets

Friends
Family

Industrial
firms

Managmt
team

Public bodies

Business angels

Venture capital

Banks
BUSINESS PLAN: The Targets

Investors vs. bankers

- Return vs. security
- Future vs. past
- Shareholders vs. lenders
BUSINESS PLAN: The Targets

What is the recipient interested in?

 fontsize=24>Very often, not what the entrepreneur thinks:

- Limited interest for technical details
- The entrepreneur should then prove his understanding of non technical matters, especially in 3 areas:
  - Business model
  - Marketing
  - Financial
Agenda

- Introduction
- Why write a Business Plan?
- The targets

The Business Plan in details

- Contents
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- Investment proposal

- Conclusion
- A successful example: Syntem
A few hints:

No need for a book – use visual aids

BP must be presented by the boss

Have the complete team present for the 1st meeting

Do not hesitate to present the BP to many potential partners and have it challenged by them
BUSINESS PLAN: Contents

- Executive summary
- Product, Innovation and patents
- Manufacturing
- Marketing analysis and strategy
- The team
- Financial projections
BUSINESS PLAN: Executive summary

- VC’s receive too many proposals
- They reject 9 out of 10
- They primarily look for reasons to say **no**
- One or two pages maximum
- Raise the interest in less than one minute
- Convince the reader to go further instead of “filing vertical”
BUSINESS PLAN: Executive summary

**Business model:**

- What kind of company are we talking about?
- Selling licences?
- Product development?
- Manufacturing?
- Selling to end user?
BUSINESS PLAN: Executive summary

Other points to be presented:

- The product
- The market
- The team
- Financial aspects
- Investment proposal
BUSINESS PLAN: Product/Innovation/Development

- Technology and competitive advantage
- R/D program
- Present development stage
- Intellectual property
- Suppliers and subcontractors
- Manufacturing investments needed
BUSINESS PLAN: Market analysis

- Market summary (indicate sources)
- Market (value and size, national/international)
- Customers (identification, needs, who pays?)
- Competition (identification, SWOT analysis)
- Market share needed to stay alive, objectives
- Official approvals if needed
BUSINESS PLAN: Market strategy

- Distribution channels (national/international)
- Investments needed to create sales channels
- Strategies (prices, services, promotions)
- Communication strategy
- Test markets
- Partnerships needed (if any)
BUSINESS PLAN: The team

- Full coverage of required skills
- Total commitment (including financial)
- Open to suggestions
- Willing to cooperate with shareholders
- Avoid one man (woman) show

An apparent contradiction:
The project must show a team **and** a boss
THE FINANCIAL PLAN

3 years quarterly projections (with options if any)

- Profit and loss (with product cost analysis)
- Balance sheet (with future capital increase)
- Cash forecasts (monthly during year 1)
- Contingency plan in case of slow take off
- Investment proposal
THE FINANCIAL PLAN

Two remarks

✓ VC do not usually welcome loans in a start-up BP except if granted by themselves and convertible into shares

✓ Exit routes not critical: VC make their own opinion on this subject
<table>
<thead>
<tr>
<th>TIME TABLE</th>
</tr>
</thead>
</table>

- Recapitulate the main events to take place during the first year
- These milestones will be used to monitor the progress in the absence of meaningful financial results
- Investors might be willing to bring money according to these milestones reached or not
THE INVESTMENT PROPOSAL

Financial aspects

- Money needed
- Valuation of company shares
- Majority
- Management remuneration package
THE INVESTMENT PROPOSAL

Other aspects

- Statutory act
- Shareholder’s agreement
- Exits
THE BUSINESS PLAN: The success factors

What could make a winner?

- Innovation (not technology)
- An ambitious but realistic plan
- Sufficient demand for funds
- A competent team
- Partnership
Bad market analysis
- Underestimation of marketing costs
- Underestimation of marketing delays
- Poor distribution strategy
- Technology as an objective
- Insufficient financial resources
Some important points to keep in mind

- BP is a very valuable exercise for the entrepreneur
- It is a unique opportunity to ask for more than money
- It is both a marketing and a management tool
- The more it is challenged (including by VC), the better
- It should be business oriented, not technology
- The executive summary is the most important chapter
- A complete team and a boss are key
- Go for a strong financial base
THE END

Thank you for your attention

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Definitions - Potential sources of financing

8 June 2006

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www.assystemuk.com
Definitions: PE and IRR

**Private equity**
Private equity provides equity capital to enterprises not quoted on a stock market. Private equity can be used to develop new products and technologies, to expand working capital, to make acquisitions, or to strengthen a company’s balance sheet. It can also resolve ownership and management issues. A succession in family-owned companies, or the buyout and buyin of a business by experienced managers may be achieved using private equity funding. Venture capital is, strictly speaking, a subset of private equity and refers to equity investments made for the launch, early development, or expansion of a business.

**Internal rate of return (IRR)**
In a private equity fund, the net return earned by investors from the fund’s activity from inception to a stated date. The IRR is calculated as an annualised effective compounded rate of return, using monthly cash flows and annual valuations.
Development stages and Sources of financing
Definitions: Early and Later stages

**Early-stage**
Seed and start-up stages of a business.

**Seed stage**
Financing provided to research, assess and develop an initial concept before a business has reached the start-up phase.

**Start-up**
Financing provided to companies for product development and initial marketing. Companies may be in the process of being set up or may have been in business for a short time, but have not sold their product commercially.

**Later stage**
Expansion, replacement capital and buyout stages of investment.
Expansion capital
Also called development capital. Financing provided for the growth and expansion of a company, which may or may not break even or trade profitably. Capital may be used to: finance increased production capacity; market or product development; provide additional working capital.

Replacement capital (secondary purchase)
Purchase of existing shares in a company from another private equity investment organisation or from another shareholder or shareholders.

Buyout
A transaction in which a business, business unit or company is acquired from the current shareholders (the vendor).

Management buyin (MBI)
A buyout in which external managers take over the company. Financing is provided to enable a manager or group of managers from outside the target company to buy into the company with the support of private equity investors.

Management buyout (MBO)
A buyout in which the target’s management team acquires an existing product line or business from the vendor with the support of private equity investors.

LBO (leveraged buyout)
A buyout in which the NewCo’s capital structure incorporates a particularly high level of debt, much of which is normally secured against the company’s assets.

Development Fund
Venture capital funds focused on investing in later stage companies in need of expansion capital.
## BAs vs. VCs

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Business Angels</th>
<th>Venture Capitalists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal</td>
<td>Entrepreneurs</td>
<td>Investors</td>
</tr>
<tr>
<td>Firms funded</td>
<td>Small, early stage</td>
<td>Large, mature</td>
</tr>
<tr>
<td>Due diligence before financing</td>
<td>Minimal</td>
<td>Extensive</td>
</tr>
<tr>
<td>Investment’s location</td>
<td>Of concern</td>
<td>Not important</td>
</tr>
<tr>
<td>Contracts used</td>
<td>Simple</td>
<td>Comprehensive</td>
</tr>
<tr>
<td>Monitoring after investing</td>
<td>Active hands-on</td>
<td>Strategic</td>
</tr>
<tr>
<td>Exiting the firm</td>
<td>Of lesser concern</td>
<td>Highly important</td>
</tr>
<tr>
<td>Rates of return</td>
<td>Of lesser concern</td>
<td>Highly important</td>
</tr>
</tbody>
</table>
**Business angel**
A private investor who provides both finance and business expertise to an investee company.

**Venture capital**
Professional equity co-invested with the entrepreneur to fund an early stage (seed and start-up) or expansion venture. Offsetting the high risk the investor takes is the expectation of higher than average return on the investment.

**Venture capitalist**
The manager of private equity fund who has responsibility for the management of the fund’s investment in a particular portfolio company. In the hands-on approach (the general model for private equity investment), the venture capitalist brings in not only moneys as equity capital (ie without security/charge on assets), but also extremely valuable domain knowledge, business contacts, brand-equity, strategic advice, etc.

**IPO (Initial Public Offering)**
The sale or distribution of a company’s shares to the public for the first time. An IPO of the investee company’s shares is one the ways in which a private equity fund can exit from an investment.
Sources of information

European Venture Capital Association (EVCA)

European Business Angle Network (EBAN)

European Commission, SME Portal
Community Research & Development Information Service (CORDIS)
Seventh Framework Programme (FP7)

European Space Agency, SME Portal,
Electronic Mail Invitation to Tender System (EMITS)

Gate2Growth (G2G)

TrendChart, country pages and innovation policy knowledge base

National Innovation Agencies (CDTI, Enterprise Ireland, FFG, OSEO, SenterNovem, Sviluppo Italia, UK RDAs, etc.)
Exercise: elevator speech

Elevator Pitch
A term comparing the time an entrepreneur has to gain the interest of a venture capitalist for his business idea with an elevator ride.

An elevator pitch (or elevator speech) is a brief overview of an idea for a product, service, or project. The pitch is so called because it can be delivered in the time span of an elevator ride (say, thirty seconds or 100-150 words). The term is typically used in the context of an entrepreneur pitching an idea to a VC to receive funding. Venture capitalists often judge the quality of an idea and team on the basis of the quality of its elevator pitch, and will ask entrepreneurs for the elevator pitch to quickly weed out bad ideas.

5 tips:

Figure out what is unique about what you do: The whole idea behind a great elevator pitch is to intrigue someone. It's an ice-breaker and a marketing pitch — all rolled into one. Your elevator pitch must have a hook.

Make it exciting: A superior elevator pitch increases your heart rate. It speaks to who you really are and what excites you about your business. It has integrity. What is it about your business that really motivates you?

Keep it simple: A good elevator pitch doesn't try and be all things to all people. Rather, it conveys a clear idea in a short amount of time. It might be a few sentences, but no more than a paragraph or so. Keep it under 30 seconds.

Write it down: Use the guidelines above and take a stab at it. Write down your pitch, say it out loud, re-write it, and then re-write it again.

Practice, and the practice some more: The first few times you try out your elevator pitch may be a bit uncomfortable, but it gets easier. After a while, it will become second nature to you, and when it does, you will be glad you practiced.
The Investment Process

John Tidmarsh
Approaching VCs

- VCs see LOTS of deals
- They are very busy and rushed
- They can only investigate a very few of the most attractive cases
- They have a set of criteria to apply

- Does your proposition fit the criteria?
- What makes it stand out from competing proposals?
Preliminary screening

- Market
- Technology
- IP
- Management
- History
- Business Model
- Financials and projections
- Funds and application
Investment Committee

- Convincing the sceptics
- Championing the proposition
- Providing supporting material
- Answering questions
Due diligence

- Market and customers, references
- Technology and IPR
- Management
- Financial and legal
- Independent reports
Reaching agreement

- Valuation
- Capital structure
- Incentives
- Milestones and tranches
- Control
- Dilution
- Tax position
- Syndication
Motivating Management

- Shares
  - invest some cash to show commitment

- Options
  - no cash investment at start
  - only take the gain on realisation
  - no risk of a loss
  - usually performance related
Equity structures

Considerations

- Management - sufficient % to be motivated and committed
- No one person has control – avoid the maverick
- Fair valuation – based on today’s facts….
  not tomorrow’s promise
- Planning for several rounds of investment
## Success / Failures

<table>
<thead>
<tr>
<th></th>
<th>Completed Investments</th>
<th>Failed Transaction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Valuation</strong></td>
<td>Fair and reasonable</td>
<td>Unreasonable expectations with no sales</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td>Committed, well prepared</td>
<td>Other interests</td>
</tr>
<tr>
<td><strong>Business model</strong></td>
<td>Tested</td>
<td>Selling snow to Eskimos</td>
</tr>
<tr>
<td><strong>Business plan</strong></td>
<td>Complete but concise, Answers all questions, Believable</td>
<td>Waffle</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>Proven, protectable</td>
<td>‘me too’ – lacks uniqueness</td>
</tr>
<tr>
<td><strong>Timing</strong></td>
<td>2 – 3 months</td>
<td>4 months +</td>
</tr>
</tbody>
</table>
Transaction

- Articles
- Shareholders Agreement
- Service contracts
- Directors
- Reserved Rights
- Disclosure file
- Warranties
Legals

- Non-Disclosure Agreements (NDAs)
- Shareholders/Subsription Agreement
- Memorandum & Articles
- Employment Contracts for staff
- Service Contracts
- Sales Contracts
- Property Matters
- Directors Liabilities
Non-Disclosure Agreement (NDA)

1. Define “Project”/“Information”
2. Sign up Company and individuals
3. Indemnity for wrongful disclosure
4. Return of documents
Contents of Shareholders Agreement

- Shareholders
- Voting rights
- Directors
- Company’s business
- Transfers of shares
- Dividend policy
- Duration of obligations
- Warranties about business
- Further working capital
- Service contracts
The function of a Shareholders Agreement is to:

1. Set out terms between parties
2. Deal with future situations
3. Deal with existing business
4. Protect the minority
5. Act as reference points for future matters, eg exit routes
Memorandum and Articles

- Memorandum
  - Defines powers
  - Relevant to borrowing powers and giving guarantees
Memorandum and Articles

- **Articles**
  - Specified share rights – eg right to dividends and assets in winding-up
  - Conduct of shareholders and directors meetings
  - Quorum for board meetings
  - Protection for minority shareholders
  - Pre-emption rights
  - Transfer values
  - Tag-along/drag-along
  - Filed at Companies Registry
Employment Contracts for Staff

- Written statements required by law
- List of terms they must contain
- Get countersigned
- Need consent to change terms [Implied consent by conduct]
Written Statements

- Some terms they must contain:
  - 1. Commencement of employment/continuity
  - 2. Job title/place of employment
  - 3. Salary
  - 5. Holiday – accrued rights
  - 6. Sickness pay
  - 7. Notice period
  - 8. Pension
  - 9. Grievance and disciplinary procedures

*Not* an exhaustive list
Service Contracts

- Includes written statement particulars but also:
  1. Restrictive/non-competition provisions
  2. Intellectual property rights
  3. Confidentiality
  4. Bonus provisions/directors benefits
  5. Notice provisions/Garden leave
Sales Contracts

- “Battle of the Forms”
- “Unfair Contract Terms” [see Industry Standard]
- “ROMALPA/Retention of Title clauses”
Property Matters

- Take advice!
- Landlord & Tenant Act
- Dilapidations/surveys
- Lease/Licence to Occupy
- Planning consents
- Environmental liabilities
Directors

Beware – liabilities on:

- Insolvency
- Statutory Offences
- “Secret Profits”
- Corporate Manslaughter
- Directors & Officers Liability Insurance
Complete Transaction

- Issue standard legal documents

- Due diligence
  - legal
  - financial
  - management
  - technology
  - customers

- Sign legal documents and complete the investment
Timing – average three to six months

Month 1-3

Month 2-5

Month 3-6

Assessment

Negotiate deal

Plan growth support

Completion
Common Misconceptions

- CASH NEED = INVESTMENT READY
- PROTOTYPE = LAB DEMO
- QUESTIONS MAY BE LEFT UNANSWERED
  Must be ready to cover all the bases
- “A GEEWHIZ” TECHNOLOGY WILL MARKET ITSELF
  There are a 100 new techniques for every one that sells
- THERE IS NO COMPETITION
  There is always competition – don’t dismiss it!
  You need to know what you competitor is doing – pick up the phone
- EXAGGERATION / HYPE WILL BE BELIEVED
  Misleading an Investor is an error and one that is likely to be exposed very quickly
- VIRTUAL TEAM WILL DELIVER REAL RESULTS
- PATENTS WILL ENSURE SUCCESS
  Patents are important, but no guarantee of success on their own
- SALES FORECASTS CAN BE UNSUBSTANTIATED
  Projected numbers must be based on defensible data
- INVESTORS JUST PROVIDE FUNDS
  Each investor has different objectives / potential added value
- FORGETTING PERSONAL OBJECTIVES
- INVESTMENT FUNDS ARE INFINITE
• Develop an achievable medium-term vision for the Company

<table>
<thead>
<tr>
<th>DIFFERENTIATORS</th>
<th>• Technology? • Product?</th>
<th>• Design? • Price?</th>
<th>• Distribution? • Customer Service?</th>
</tr>
</thead>
<tbody>
<tr>
<td>VALUE PROPOSITION</td>
<td>• Improves a process?</td>
<td>• Saves money? • Reaches new market?</td>
<td>• Enriches existing products?</td>
</tr>
<tr>
<td>CUSTOMERS</td>
<td>• Who will buy product / services?</td>
<td>• How big is potential market size for your exact product?</td>
<td>• How to maintain customer demand?</td>
</tr>
<tr>
<td>FINANCIAL PERFORMANCE</td>
<td>• What price will customers withstand?</td>
<td>• Profitability? • Cost control</td>
<td>• Sustainable Business Model • Investment Funds expenditure</td>
</tr>
</tbody>
</table>
You do not have a business model until you start to receive sales revenue
- Define the factors that should be considered in making the decision
- Use structured decision making / decision tree to work through these decisions

**SAMPLE**

- **Product A**: Does it fill a market gap?
  - **Yes**: Can I make it profitably?
    - **Yes**: Is the market big enough?
      - **Yes**: PRODUCE
      - **No**: KILL
    - **No**: KILL
  - **No**: KILL
Develop Milestones to Achieve Your Company Vision

- Your Company Today
- Vision $t + 3$ years
Plan clear achievable milestones to build shareholder value
Post investment – Support

- Board position
- Monitoring progress – sales and spend
- Technical progress
- Providing new contacts
- Business planning
- Getting back on plan
- Changing management
- Refinancing
Post Investment – The Money

- Manage the investment effectively
  - Treat the investors money as your own
  - Monitor cash position on a weekly basis
  - Set milestones for the technology, products and sales
  - “Cash is King”

- Investors
  - Keep the them informed
  - They don’t like surprises
Post Investment – The Products

- Get products out to the market
  - Revenue
  - Trials, References and Case Studies (3rd Party Validation)
  - Volume
  - Customer feedback
- Think carefully about consumer and enterprise customers
- Focus on your unique aspects
  - Use your resources effectively
- Continually assess the market
Post Investment – All about Sales

- Get value for money from sales and marketing
  - Choose sales team carefully and set them measurable targets
    - Use simple software package to monitor activity
  - Look at cost effective marketing
  - Access to markets
    - Government/Commercial
    - Direct/Indirect

- What products and services can you sell?

- Monitor the market and your proposition
  - Learn from customer feedback
Post Investment - Summary

Not easy

Manage Wisely

Look after the Cash

Keep Selling

Enjoyable experience

Chance of a life changing sum of money
Divestment

- Exiting
- To whom?
- Preparation and adding value – continuous process
- Finding exit opportunities
- Forced sale
- Agreed sale
- Who gets what
Exit planning

- Before the first round
  - choose the probable route
  - timing, quick return or long term
  - identify possible purchasers, benefits to them and what will they do with your company
  - management’s objectives – continuing roles
  - avoid being pushed in the wrong direction by outside investors
Exit route Options

- Trade sales
- Management buy – outs
- Another venture capitalist
- OFEX
- Licensing
- AIM
- LSE main market

WHICH IS REALISTIC FOR YOU?
Summary

Preparation
- Companies - prepared before embarking on the process
  " Investment Readiness Programme
  " Business Plan
  " Presentation

Transaction
- Valuation - what is an acceptable transaction to you and to investors
- Commitment - hard work for 3 – 6 months
- Investment - follow an established process
  - several rounds maybe needed
- Exit - the ultimate objective
Take the money and do it all again

Thank you

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Valuation methods and techniques

8 June 2007

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www.assystemuk.com

Special thanks to Prof. Felix Janszen of Inpaqt and Hans Haanappel; this presentation is based upon their works
Valuing Research & Development

The Case Study of a R&D project

Featuring:
- Financial terms
- Calculating Net Present Value (NPV)
- Strategic options
Financial terms

EBITDA

Current ratio

NPV

Quick ratio

ROI
# Qualitative valuation: checklists

## ENQUIRY ASSESSMENT

<table>
<thead>
<tr>
<th>Bid Factor</th>
<th>Weighted Decision Criteria</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive</td>
<td>Neutral</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>1. Background (experience)</td>
<td>Strong in-house experience</td>
<td>Average in-house experience</td>
</tr>
<tr>
<td>2. Overall capability</td>
<td>Technically superior</td>
<td>Capable</td>
</tr>
<tr>
<td>3. Proposed team</td>
<td>Best and available</td>
<td>Best available or imported</td>
</tr>
<tr>
<td>4. Facilities</td>
<td>Available and/or favourably located</td>
<td>No impact</td>
</tr>
<tr>
<td>5. S’contractors</td>
<td>Enhancing</td>
<td>No impact</td>
</tr>
<tr>
<td>6. Market intelligence</td>
<td>Inside track</td>
<td>Generally up-to-date</td>
</tr>
<tr>
<td>7. Customer rapport</td>
<td>Good working relationships</td>
<td>Known but not cultivated</td>
</tr>
<tr>
<td>8. Competition</td>
<td>Sole source</td>
<td>Open or unknown</td>
</tr>
<tr>
<td>9. Responsability</td>
<td>Can meet/exceed requirements</td>
<td>Understand the problem and can respond</td>
</tr>
<tr>
<td>10. Price strategy</td>
<td>Honest, credible and within known limits</td>
<td>Reasonable and competitive</td>
</tr>
</tbody>
</table>

**Total Score:**

**Maximum Points Available:**
Simple quantitative method: cost-benefit analysis

This estimated magnitude of various costs of motor vehicle use. Crash damages are one of the largest costs, far greater than traffic congestion or environmental costs.

Sophisticated methods: Net Present Value

Source: The Economics of Forest Management

http://courses.agecon.lsu.edu/3000/AGEC3503/WebUnit3/Web%20Unit%203-2.htm
Net Present Value and Free Cash Flows

Free cash flows

Calculate time value using risk adjusted discount rates

Time
Net Present Value (NPV) and Monte Carlo Simulation
Active against passive management: net present value and real option value

- Value from management flexibility
- NPV
- ROV

Defer or abandon project to limit losses from adverse market developments
Consolidate aggressively to take advantage of favorable future opportunities
Basic assumptions of R&D-project:

- Duration: 1 year
- R&D-investment: €30 million
- Technology success rate: 60%
- Commercialization-investment: €100M
- Discount rate: 10%
- Value after commercialization on launch date:
  - Market developed favorable: €300M with probability 30%
  - Market developed unfavorable: €75M with probability 70%
  - Expected commercialization value:
    €300M \times 0.3 + €75M \times 0.7 = €143M

SHOULD THE FIRM INVEST IN THE R&D-VENTURE???
Example of NPV valuation (II)

\[ \text{NPV}_{\text{now}} = \frac{€ 43\text{M} \times 60\%}{1,1} - € 30\text{M} = -€ 7\text{M} \]

**CONCLUSION:** Don’t invest because NPV < 0

**COMMENT:** Implicit assumption of Static NPV made, because besides deciding on the R&D-investment the firm also decides now on the launch Investment, because the valuation is based on the expected value of the commercialization and did not take into account how the market develops during the year!
Dynamic NPV valuation

\[ \text{NPV}\text{\textsubscript{launch date}} = € 300M - € 100M = € 200M \]

\[ \text{NPV}\text{\textsubscript{launch date}} = € 75M - € 100M = -€ 25M <0 \]

Don’t invest so \( \text{NPV} = € 0\text{M} \)

Dynamic NPV now = 30% \times 60% \times € 200M \div 1,1 - € 30M = € 3M

CONCLUSION: Invest because Dynamic NPV > 0

COMMENT: The firm will decide on the launch investment after the R&D-project is completed taking into account the market dynamics (distribution of the value of commercialization) at that moment in time. The firm only invests in the launch if the market is favorable!
Conclusions

- Difference between static NPV and dynamic NPV of € 10M, reflects the value of managerial flexibility to respond to uncertain market developments.
- Higher uncertainty results in a higher flexibility value.
Example of NPV valuation (V)

Lessons to be learned

- Static NPV implicitly assumes that commercialization investment is *mandatory* after R&D investment, independent on how the market develops.
- Dynamic NPV takes into account flexibility in management decision after the R&D-project *contingent*, based on how the market developed.
- Therefore R&D-investment can be represented as an option on commercialization.
- If the market develops favorable the option should be exercised and if not the option expires worthless.
- Dynamic NPV is more consistent with actual management behavior, and therefore results in more realistic valuations and better decision making!
Comparison of static NPV, dynamic NPV and option value.
Managerial flexibility can be valued as Real Options

An option is a right but not an obligation...

› BY STARTING A R&D PROJECT WE HAVE A RIGHT TO COMMERCIALIZE A NEW PRODUCT

... to take some exclusive action....

› WE HAVE TO MAKE A LAUNCH INVESTMENT OF € 100M

... in the future...

› WE MAKE THE DECISION TO COMMERCIALIZE NOT TODAY BUT AFTER THE R&D-PROJECT IS SUCCESSFULLY COMPLETED

... at a certain costs!

› WE INVEST € 30M IN R&D TO ACQUIRE THE OPTION TO LAUNCH
Several real options are embedded in R&D-projects

Embedded real options:
- option to abandon
- option to speed up
- option to slow down
- option to temporarily stop

Embedded real options:
- option to defer launch

Embedded real options:
- option to abandon
- option to expand
- option to contract
R&D-projects are characterized by:

- Staged investments with embedded flexibility (go / no go)
- High uncertainty which resolves over time and makes flexibility very valuable

**UNCERTAINTY**

Is there uncertainty and will we learn more about it over time?

**STRATEGIC ACTION**

Can we refocus our strategy once we have learned more about the uncertainty?

---

The value of an option comes from the ability to respond to uncertainty!
Real option theory applies very well to R&D-projects (II)

Identifying the most valuable real options

<table>
<thead>
<tr>
<th>Ability to Respond</th>
<th>Uncertainty</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Moderate option value</td>
</tr>
<tr>
<td>Low</td>
<td>Low option value</td>
</tr>
</tbody>
</table>

Option value is greatest when:
- uncertainty is high and it is very likely to receive new information over time
- the ability to respond is great and managers can take the appropriate action to benefit from this information

The option value is greatest when the projects’ NPV without options is close to break even, and the flexibility to change course is more likely to be used!
Strategy as a portfolio of real options

Practical implications

Proactive management

- Research manages the R&D-projects as a portfolio of real options and exercises real options as markets and technologies change.

Risk seeking behavior is “rewarded”

- Higher uncertainty enhances managerial flexibility and real option value: *high risk projects are not discounted to the graveyard as with traditional NPV calculations*
Real option models are not complex

Although corporate finance literature presents real option models as complex and mathematically complicated....

- Stochastic processes (e.g. brownian motions)
- Ito’s Lemma and solving stochastic differential equations

..... you can model and present real option models to management as a simple decision tree.

- Based on a discrete option pricing model
- Solving the problem of the different risk profiles in the different branches of the decision tree
Uncertainty is a fact of life

Uncertainty originates from various sources, such as ....

- Technological uncertainty
- Customer needs
- Level of competition
- Regulations
- .........

But we can predict them!
Management should regard uncertainty as normal

Management can create value by building in flexibility into R&D by using:

- Milestone planning
- Portfolio planning
- Product platforms
- Sophisticated valuation software
Further reading

Real Options Analysis: Tools and Techniques for Valuing Strategic Investments and Decisions, 2nd Edition
Johnathan Mun
November 2005

The Age of Innovation
Janszen, Felix.
1/1/2000
Financial Times Prentice Hall