COMP3219: Engineering Management and Law

Session 02- Management

• Company Lifecycle

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Company Lifecycle
Session Objectives

Describe the typical problems that arise as an organization grows and matures

Discuss theories of organizational growth

Discuss why organizational decline occurs,

Identify the stages of decline,

What managers can do to extend eventual death of their organizations.

Discuss how some of these played out in Nokia’s life-cycle.
**Life cycle**: a predictable sequence of stages of growth and change.
For an organization

Predictable sequence of stages of growth and change.

Four principal stages:

- Birth
- Growth
- Decline
- Death

Predictable???

- When?
- How?
- So why bother???
So why bother?

Extend Company’s productive life.

- Quicken/ Manage Growth
- Avoid/ Reverse Decline
- Prolong life...
- or know when to bury

Birth
Growth
Decline
Death
Birth of Companies

*Previous lecture:*

- Engineers/ Technology changes the society.
- It is more efficient to do so within organizations.

What do we do with new ideas?
(Engineers are full of them)
The Birth of Nokia

1865: Nokia Paper Mill

(Engineers are full of them)

Finnish Mining engineer Fredrik Idestam

- Paper mill in 1865 was obviously great idea.
- Paper mill today- Probably not exactly.
- Why?

How easy was it for the founder?
Where do business ideas come from?  
(Engineers are full of them)

1865: Fredrik Idestam- Nokia Paper Mill

Schools of thought in Entrepreneurship

- Opportunities are inherent in the environment
  - Entrepreneurs **spot them**.
- The environment are devoid of opportunities
  - Entrepreneurs **create (and take) them**.

...and for Idestam and Nokia Paper mill...
Master’s degree in mining
Never thought of starting a business- Dreamt of working in the Finnish Board of Mines (in his fathers shoes).
Job as a mining engineer (dream come true)
Visited a groundwood mill on a return from a trip.
This method of paper production was still very new.
Demand for paper was increasing
Production limited due to raw material shortage (rags)
  How can supply of rags be increased?
An idea occurred to Idestam- Paper from wood is good idea.
He founded Nokia Paper Mill.
Previous Lectures...

Accidental Manager!

- Some of those accidents are here

- So what shall we call Idestam?

- Am I also looking at Accidental Entrepreneurs?

- ...time will tell.
Accidental Entrepreneurs

- Drew Houston - On the bus!
Where do business ideas come from?

(Engineers are full of them)

1865: Nokia Paper Mill

2007: Dropbox

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Why? How easy was it for the founder?

So how easy was it for the founders?

Joys and Sorrows at company birth
Joys and Sorrows at company birth

Birth
Growth
Decline
Death
Joys and Sorrows at company birth

- Enthusiasm
- Entrepreneurial/ Innovative
- Small and Flexible
- Intimacy
- All4One, One4All
- Disorder/ unstructured
- Uncertainty
- Vulnerable
- Credibility Issues
- Inexperience
- Limited Capital

So will the new firm survive?

What are the pointers that the firm will grow?

Is growth always desirable?
Theories of Growth: Gibrat’s Law

Will Nokia grow or will Nokia not grow?
I wouldn’t know; No one knew!!!
Theories of Growth: Gibrat’s Law

Firm growth occurs in ‘random shocks’

– There is no systematic determinants of firm growth.

“firm growth rate is independent of the size at the beginning of the period tested, and the difference are just due to shocks in the system, and therefore the growth in firms is a random process, not depending on firm size or having any correlation over time.”
However...

- This seems more true for larger firms.
- Doesn’t go very well empirically especially for smaller firms.
- For smaller firms size and growth seem in inverse proportion.
- Age is also typically found to be correlated with growth rates.
- Small and young firms experience more volatile growth.
- Gibrat’s law however is a good approximation.
- Demonstrates that chances of firm growth is mostly random.
Following Gibrat:

- Randomness is also observed in patterns of growth
Penrose’s theory
Explains sources and hazards of growth

- Resources available to a firm are indivisible and interdependent.

- Firms grow as a result of the efficiency generated through ‘learning by doing’.

- As managers gain more experience, they become more efficient at what they do and take less time to do their tasks.

- Freed-up managerial resources then go towards value-creating growth-inducing activities.

- May suggest that growth is not necessarily an end itself, rather a result.
...from Penrose (*Hazard- Operating Costs*)

- Growth is limited by the amount of available managerial attention at any period.

- Too much focus by managers on expansion diverts attention from operating efficiency, thus increasing operating costs.

- Hence, above a certain point (optimal growth rate), increases in growth will lead to higher operating costs. *(Due to low managerial attention)*

- Fast growing firms will thus have higher operating costs than their slower-growing counterparts (Penrose Effect).
Growth: Deal or No deal?
Is growth ALWAYS desirable?

- With age, firms will generally increase in size
- Growth is not always desirable
- Growth is NOT irresistible
- It is also NOT inevitable
- Some firms will plan not to pursue growth even when opportunity clearly presents itself.

So why and when may organizations shun growth?
Why do firms seek growth?

• With growth, employees anticipate opportunities for their own growth (promotion, better pay, prestige, etc.)

• With growth work becomes more challenging and less boring as the firms breaks from routinized tasks to new business areas.

• Growing firms find it easier to maintain worker morale.

• Lack of growth could produce the opposite- demotivated uninspiring and stultifying environment.
Marris’ Theory of ‘Managerial’ Capitalism

Explains how the optimal point of growth is (naturally) determined

Managers and shareholders decide the management of the firms.

- The managers aim at the maximizing growth rate while the shareholders aim at the maximizing dividends and share prices.

- Marris growth model balances growth rate and the share prices.

- Managers desire higher growth rate as it enhances their compensation, promotion, position, status, etc.

- To achieve growth, managers will therefore retain and re-invest higher proportion of total profits for the expansion of the firm.

- This drives growth
Theories of Growth: Marris’ Theory of ‘Managerial’ Capitalism

- But reinvesting profit reduces profits (dividends) available to be shared to shareholders.

- Continuous low dividend reduces share prices, resulting in shareholders selling off shares.

- Sale of shares brings about the threat of take-over of the firm.

- Take-over of the firm raises concerns on management about their job security.

- Concerned, management focuses on paying dividends.

- Buy paying dividends limits the resources available for the firm’s growth.
Managers hence will choose that growth rate that maximises the market value of shares, and gives satisfactory dividends to shareholders.

On the other hand, the owners (shareholders/ investors) also want balanced growth of the firm because it ensures fair return on their capital.

Thus the goals of the managers align with that of owners of the firm.

The result is an optimal point for a balanced growth of the firm.
Growth challenges for the managers

• Convincing the market (for innovative product)
• Recruiting a team with entrepreneurial spirit.
• Raising capital - *For a firm struggling with legitimacy*
• Taking/ Managing risks
• To grow or not to grow

How did it go for Nokia?
Growth challenges for the managers

How did it go for Nokia and Dropbox?

- Legitimacy: Although cheaper, Paper mills regarded wood pulp as inferior.
  - Undertook aggressive marketing campaign
  - Won bronze at 1867 Paris exhibition.

- Legitimacy - Raising capital - Read up Dropbox lessons.

What happens when ‘the market’ sees that it works?
Population Ecology Theory

Explains determinants of the rate or birth (and death) of new firms in a population of existing firms.
Company Life Cycles

Population Ecology

• Idestam's manager- Gustaf Adolf Serlachius became Nokia’s first competitor.
• Had inside knowledge of Nokia’s mill
• Serlachius founded his own mill in 1868.
• Another employee Granberg established his in 1871
• Nokia built another in 1868
• By the 1870s, several mills got on ground.

According to the Population Ecology model
• Resources dry up- No longer lucrative.
• Existing firms stand tough against new entrants
• This regulates the size of the industry

• At this next the management is thinking: Where next for survival?
## Sources of capital for growth

Often Capital becomes a constraint to growth

Where could be sources of capital for growth:

<table>
<thead>
<tr>
<th>Investor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equity</strong></td>
<td></td>
</tr>
<tr>
<td>Entrepreneur and team members</td>
<td>The entrepreneur invests his own money in the company, or money he obtained through a personal loan.</td>
</tr>
<tr>
<td>Friends and family</td>
<td>The entrepreneurs’ friends and family</td>
</tr>
<tr>
<td>Business angels</td>
<td>Wealthy individuals willing to invest in small projects</td>
</tr>
<tr>
<td>Venture capitalists</td>
<td>Specialized investors gathering money from non specialists and placing it into bigger projects for a period of 5-7 years</td>
</tr>
<tr>
<td>Other companies/ strategic investors</td>
<td>Other companies can decide to invest in projects they believe have strategic importance to them</td>
</tr>
<tr>
<td>Stock markets</td>
<td>Members of the public invest in the company through a public offering</td>
</tr>
<tr>
<td><strong>Debt</strong></td>
<td></td>
</tr>
<tr>
<td>Banks</td>
<td>Loans</td>
</tr>
<tr>
<td>Leasing companies</td>
<td>Provide equipments and office space to entrepreneurs against lease payments</td>
</tr>
<tr>
<td>Government agencies</td>
<td>Subsidy for particular projects</td>
</tr>
<tr>
<td>Customers/ suppliers</td>
<td>Trade credit</td>
</tr>
<tr>
<td>Bootstrapping</td>
<td>Use of trade credit, credit card and other methods, including working capital management</td>
</tr>
</tbody>
</table>

*Source: Schwienbacher and Larralde (2010) p. 9*
Sources of Capital and its problems- Nokia

• Idestam’s Nokia listed its shares in 1871
• Partnership with Leo Mechelin who attracted capital (legitimacy).
• Partnership meant more structures/ accountability.
• By 1880’s Nokia has became large, owning a number of pulp mills
• Same period Nokia moved from making only pulp to making paper.
• Idestam founded a number of associations to protect the blossoming industry

Decline:
• Nokia is now facing intense competition
• The firm was struggling
• Something has to be done
Organizational Decline and renewal- Nokia

Organizational renewal:
As competition intensified, Mechelen wanted Nokia to venture into electricity generation.

• Idestam refused- Why???
  • Perhaps I love that my ‘paper mill idea’.
  • What do organizations do with young new ideas such as yours?
  • What do you do with them within an organization?
  • Do organizations always value them?
**Organizational Decline and renewal - Nokia**

- 1896 Idestam retired, Mechelen took charge.
- Nokia ventured into electricity.
- Post World war I, Nokia again was struggling.
- At the point of bankruptcy
  - Something has to be done
  - Now out of renewal ideas- Die, get acquired.
  - Nokia was acquired by Finnish Rubber works
  - It also acquired Finnish cable works (a telephony firm).
  - A paper mill became a telecoms firm

- Fast-forward 1990s Nokia was among the greatest telecom firms ever.

- Fast forward 2012- The giant has lost its mind.
- What went wrong?
Weitzel & Jonsson’s 5 Stages of Decline

Can we apply this model to tell Nokia’s final story?

Questions
Next Session

Team Lifecycle
Team Dynamics and Roles

Session led by: David