03-READING Summaries

READING SUMMARIES

A model for investment justification in information technology projects: A. Gunasekaran, Peter E D Love, F Rahimi, R Miele

To remain competitive in a sophisticated marketplace business must invest in IT to survive in long-term.

IT is a generic term fo convergence of computers/hardware/software/telco/Internet/Electronics and resulting tech.
IS is a wider concept of how information flows are designed in an organisation.

Expenditure trends managers facing:

- Identify what their competitors are doing with IT
- Determine whether to remain competitive
- Evaluate how IT adoption can improve performance

For justification of IT various appraisal techniques used:

- IT budgeting
- IT investment management
- IT project planning
- Investment budgeting
- Payback period performance metrics
- Return on investment

IT is a complex issue due to many intangible and non-financial benefits which are inherent in the implementation of IT.

Companies that used traditional approaches indicated a degree of uncertinty about how to measure full impact of their investment.

2.0 Justificaton of investments in IT

Carefully selected and focused on meeting business mission needs that can have a positive impact on an organisation's performance.

Poorly managed can hinder and even restrict an organisation's performance.

Lack of solid but easy to use management tools for evaluating, prioritising, monitoring and controlling investments in IT. Most technology focused investments fail due to organisational problems.

Companies should identify opportunities for making investments in projects pertinent to

the objectives of their business, and that investment decisions should not be made on the sole basis of a monetary return alone.

When organisations do not have necessary techniques for alternative evaluations, or they lack confidence in them, they prefer to keep their tried and tested formulae.

Less optimistically, criteria used to measure internal effectiveness such as capacity utilisation, employee productivity, scrap level, etc. may have the effect of restricting and biasing the evaluation process.

Management and Financial controller's attitudes have changed towards the IT investment criteria.

- IT is seen more as a support function, rather than a strategic tool
- Executives are unsure how IT may be effectively implemented
- Most view IT from a technical rather than a business approach
- Managers found difficult to justify the cost associated with IT purchase
- Difficulties in measuring benefits and costs
- There should be methods other than financial critieria
- Current financial justification methods are inadequate
- Intangible benefits are valuable assets
- IT investments should be part of infrastructure investment

3.0 A conceptual model for evaluation of IT projects

Lack of strategic integration and ignoring the intangibles and non-financial performance measures. A conceptual model benefits of strategic, tactical, operational, financial and intangible investment appraisal techniques is presented in Fig below.

3.1 Strategic Impact

Inputs into corporate strategy needed to be linked into the objectives of the business. The essential nature of this tie-up is two fold. Firstly it provides the basis for establishing a clear strategic direction for the business. Secondly it will define the boundaries and mark parameters against which the various inputs can be measured and consistency established, thus providing the coherent corporate plan.

<u>Tactical Considerations</u>

A Model for Investment justification in IT Projects

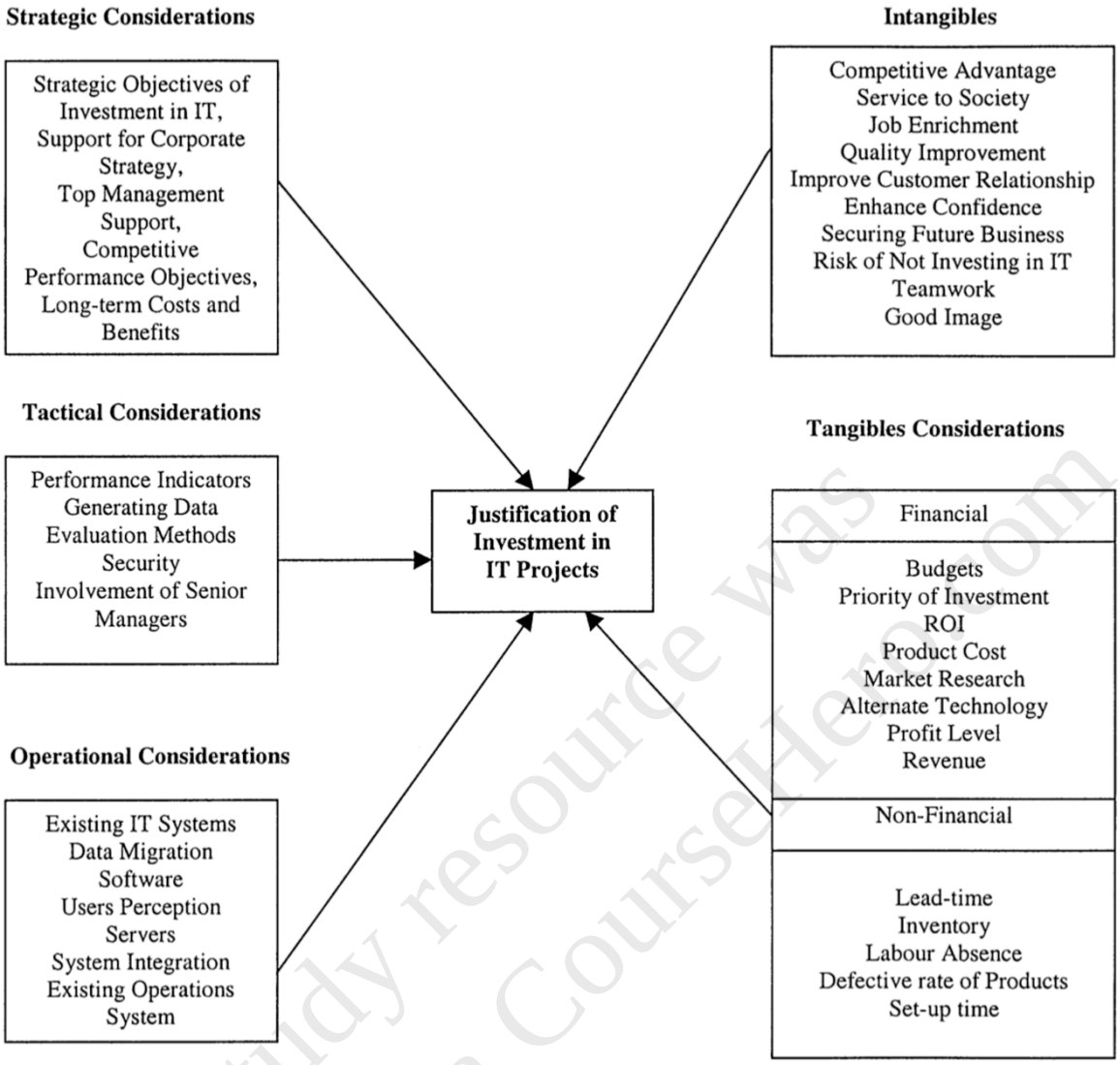

Fig. 1. A model for investment justification in IT projects.

Ensure CSFs (Critical success factors) are achieved, otherwise will be an obstacle to corporate progress.

Even though the strategic perspective may not have the non-financial indicators, the tactical dimension will have a combination of both tangible and intangible measures. It is essential to develop appropriate mechanisms for quantification of tangible measures.

3.3 Optimal Performance

Day-to-day operational level CSFs. Once identified, appropriate micro performance measures must be detailed. Eg: IT and IS are being developed with the IT or IS department working closely with the business functions; Operational justification: existing IT infrastructure operation has to be considered to resolve integration problems. Need for training, skills/roles, servers/licenses should be considered.

3.4 Financial considerations and justification

- Can the company make the investment?
- Sources of finance or capital budgeting?
- Does the investment fits with the company's overall strategy?
- What is the overall outcome of the IT/IS investment? (Increased Profits/ROI etc)
- Once finances are agreed and in place, the objective is to then match the most appropriate financial appraisal technique to the characteristics of the project being implemented.
- Project characteristics effect the way in which an investment decision is made
- Examine the financial performance to see if suggested financial returns achievable and meet specific requirements of the organisation
- This is essential as high startup/installation costs when combined with over-optimistic forecasted savings and ambitious benefits could ultimately result in the project being considered a failure.
- As a successful investment decision must yield a return in excess of the cost of capital invested.

3.5 Intangible benefits

- Rate of return (ROI) methods are based on an investment view of decision making. Managers are viewed to have certain amount of money under their control so they can invest on the projects that returns the most revenue.
- This process sometime has the sophistication of a hurdle rate, which is the minimum rate of return from a project before it can be approved.
- Some decisions do not fit in with this 'investment' view of the business world.
- Due to the nature of inherent dynamism of IT investments, evaluation must be regarded as a continuous process. Without regular re-evaluations, potential benefits may be missed because:
    - Technology itself may develop to a stage where cheaper solutions are viable
    - Users may outgrow the current system
    - The market that company operates may change where older systems do not address current needs
- Lack of relevant and regular evaluation procedure may lead to loss of control of IT investments. Hence development of a regular evaluation procedure to avoid acts of faith or to not loose the benefits.

6.0 Analysis of data

Case study, ICL results ::

6.1 Strategic

- Being an IT company, ICL is of the view that IT is vitally important and plays and essential role in the survival of any business in todays competitive market.
- Effectiveness of IT investments can undoubtedly be maximised through better strategies
- Sales people should be able to get into the network anytime through firewall, so PCs don't help as much as laptops.
- It is a matter of writing a short report informing the director of amount needed to carry out ajob, the reason for this is that if there is no chance of getting the money, the time spentpreparing a formal report will not be wasted.
- one of the ways ICL do cost justifications is to estimate the **cost of not doing it**
- Mistake: Implement the word process in lieu of the ability to run with less staff
    - Consequence: Lost two top resources, lost experience, loyalty and implanted fear for future IT implementation into other staff.

6.2 Intangibles

- Expectation from new investment was to gain competitive advantages
- Aim was do do something faster with improved quality and accuracy and by doing it better ICL hoped to be able to respond better than their competition
- However it was quite difficult for ICL to determine the cost of such projects.
- Job enhancement is another advantage of IT investments, keeping people knowledgeable and learning new techniques all part of ICL's competitive advantage.
- In the past ICL measured on its stock but today measured by how much their people know (Intellectual Capital), which of course is difficult to quantify.
- IT Project Management staff knew the company's direction, and by implementing Management Information Tools ICL was able to work towards providing commercial directors capacitiy to make strategic decisions and move towards faster responses to customer needs and there by improve relationships.

6.3 Cost related

- ICL had a capital budgetary procedure for investment in IT
- Aimed to focus Proj Owner's mind in the way they are aiming to use IT and how the performance of projects was monitored
- Specific performance indicators were used by mgt to make a decision as to whether full fund
- If indications were negative, even though the budget may well have been allocated to the project, management had the right to withdraw the funding
- Eg: ROI calculations looks good, but risk management may say otherwise.
- IF the project is not progressing well, then its when project costs will be taken into consideration.
- For example when customer is signed up for one product, related other products can be marketed to the same

6.4 Tactical

- Customer perception was very important for the ICL. So they decided to use the right technology at the right time for the right customer. This is part of the strategy. This will increase the confidence of customer and ICL's capabilities.
- An evaluation process was carried out at several stages of purchasing new IT.
- Depending on the level and size of purchase, many different layers of management were involved in ensuring that the new purchases were in line with the company's strategy.

6.5 Operational

- At one stage IT departments didn't work with the business functions.
- Main aim and objective of ICL Is to improve the quality of service it provides to customers
- Failure of projects primarily contributed to bad communication between customer and account team, requirements not being understood and risk analysis not being carried out properly
- ICL takes proactive role in IT. Company sees IT as an essential part of infrastructure of the business rather than a mere tool.
- They facilitate their management to have a right medium to have access to right information which would lead to strategic decisions and win contracts.
- ICL has a comprehensive IT strategy which it has to comply with.
- Traditional methods such as RIO and payback period are not carried out for justifying IT investment but there are procedures, which include preparation of a report which address the issue of the cost of not investing in IT.

7. Conclusions

The findings from the case study have indicated that the current accountancy evaluation process, for investment justification in IT such as ROI is not sufficient to warrant an investment decision. There are many intangible benefits offered by IT, which are not of a quantifiable nature but essential to the endurance of a company. When implementing IT overall consideration must be given to the company's organisational strategy and full support and commitment of the company must be in place before commencing any projects. In particular, an organisations IT manager should have full knowledge of the company's strategy, commitment from management employees are also some of the important issues that need to be considered when contemplating an investment in IT. Tactical considerations are equally consequential in the success of an IT project, as there should be measures to monitor the success of the investment. These **performance measures should be constantly monitored** to ensure that the project is progressing in line with the **aim and objectives of the project as well as the organisation's strategy**.

Using IT to drive Operational Efficiency in the OR

Implementing an anesthesiology information system and redesigning workflowprocesses helped one hospital improve its operational efficiencies and the hottom line

Complex and fast moving, the operating room (OR)/perioperative service area has long heen rife with operational and clinician workflowinefficiencies and particular patient safety chal- lenges.
As a result, the efficiencies brought about by the use of new periop- erative IT, coupled with changes in workflow,when driven by strong clinician leadership, can have a positive impact on a hospital's bottom line.
The system implemented at UCI includes numerous other modules that have since heen implemented. These include preadmission scheduling, surgery scheduling, clinical documentation for anesthesia, preoperative care, interoperative care, postoperative care, nursing documentation, an analytics module, a surgeon preference card module, a web-based scheduling and schedule-viewing application, and a resource and tracking system. Clinicians have also intro- duced husiness analytics to the overall system.
The primary challenge facing Kain and his team was to transform the perioperative and anesthe- siology department to provide measurable improvements in operational efficiencies and quality-of-care improvement through the use of workflowprocess redesign supported hy IT.
Clinicians and managers at UCI have also begun to delve into the process of applying data analyt- ics software to analyze outcomes of work flow processes and improve them.

It's rela- tively easy to find the low-hanging fruit that you can knock off pretty quickly when you have the data.
core chal- lenge is improving communication among the surgeons, anesthesiologists, and staff
Stone also says that with an automated perioperative system, nurses require less time to complete their post-surgical documentation, which improves efficiency, clini- cian effectiveness, and job satisfaction.
"the perioperative system is far more than just a com- munications tool. It's about theflowof cases, billing, compliance, and instruction.