

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/260831095>

MAKING PROMISES—THE KEY BENEFITS OF PROPOSED IS SYSTEMS

Article · January 1993

CITATIONS

8

READS

17

2 authors, including:



[Rajesh Mirani](#)

University of Baltimore

28 PUBLICATIONS 551 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



(To be Decided) [View project](#)

Making Promises: The Key Benefits of Proposed IS Systems

.....
Rajesh Mirani
Albert L. Lederer

The identification of the benefits of proposed information systems is a key to their approval and funding. Proposed systems that change the way the organization conducts business, enable easier access to information and enable faster retrieval of information are capturing the attention of information systems managers, and attracting the funding of top management.

A pressing concern for both corporate and information systems management is the justification of new information technology proposals. The costs of new projects and their potential to impact the organization favorably have risen dramatically in recent years. At the same time, the risks of failing to implement them are great, especially when competitors appear to be installing them with alarming speed. Thus, justifying the appropriate projects has become increasingly critical to the success of the organization.

To justify proposals, management typically gives serious consideration to both the anticipated costs and benefits of the completed projects. If the expected benefits exceed the expected costs, then funding is certainly more likely, but if the anticipated costs exceed the anticipated benefits, funding is probably doubtful. Much has been written about the process of estimating the costs of new information technology projects but less has appeared about the identification of their benefits.

However, because the identification of benefits is an integral component of the justification process, it is important that systems managers know more about it. This study describes a number of large projects that were recently justified successfully, and was done to determine the particular benefits that today's firms seek from new information technology. The study shows the benefits that are both capturing the imagination of today's information systems management and attracting the funding of today's business management. With this knowledge, systems managers can better understand where to seek benefits from information technology and how to present them better to their management.

The Importance of Benefits Identification

The justification process includes the evaluation of the costs and benefits of a new information technol-

ogy project. This typically forms the core of a feasibility study at the commencement of a project and is the basis of the management decision to fund or reject the project. Systems managers are typically very attentive to attempting to avoid cost overruns. However, perhaps because benefits are often not quantitatively tracked, systems managers can more easily overlook the impact of mistakes in their identification on the entire systems development effort. It is important to clarify expected benefits for the following reasons:

- ***If systems management fails to propose potential, achievable benefits, the project will not be funded.*** The organization will lose important opportunities. As a result, systems management will miss a key role in the success of the organization.
- ***Proposed benefits give top management a basis for assessing systems management's performance.*** If a project forecasts substantial benefits, then top management expects the final system to provide significant impact on the organization. If the project delivers these benefits, management will be pleased, but if the project fails to deliver them, then the systems managers responsible for the identification of the benefits and the development of the system may be required to explain their failure to predict accurately or to deliver the promised results.
- ***Proposed but undelivered benefits give top management reason to distrust systems management's performance on future projects.*** Undelivered benefits on a current project may inspire management to distrust those who identified the benefits and those who developed the system. This may further result in lack of management support for future projects, and in some particularly severe cases, can precipitate the termination of information systems managers.

• **Proposed benefits give users a basis to assess systems management's performance on future projects.**

If a project proposal forecasts extensive benefits, users may expect significant improvement in their current work. A successful project facilitates good user relations, but if that improvement fails to materialize users may be disappointed and complain to management about the project's failure. Furthermore, they may be incredulous about future project proposals and may even seek their information technology support from outside consultants.

• **Proposed benefits give systems managers a basis for performance reviews for analysts and developers.**

Predicted benefits also provide a means for measuring analysts' potential achievement. They can thus permit information systems managers and others to evaluate their accomplishments during regular performance reviews. Projects that deliver their proposed benefits can affect favorable performance reviews while others can cause unfavorable reviews.

Hence the identification of proposed benefits is very important. In sum, the expected benefits must be sufficient to outweigh the costs or the project cannot be funded. At the same time, the benefits must not be so excessive that they create unachievable expectations. As a result, the success or failure of the systems department as well as the entire organization may hinge on the accurate and convincing identification of proposed systems benefits.

The Process of Benefits Identification

Typically, a feasibility study initiates a project by identifying its expected costs and benefits. In some organizations, a system may change substantially during its analysis, design, and construction. Some sub-systems may be dropped and others added. Anticipated costs may be reevaluated and, at the same time, benefits may be reassessed too. Hence, to some extent, the identification of benefits is critical at the commencement of a project but may also be an ongoing activity.

This activity typically stems from one of two possible broad, conceptual approaches. The first approach is based on the principle that benefits are achieved by automating existing processes. In this case, analysts study existing processes with plans to improve them by providing users with new screens and

reports. They expect this new information typically to result in the redesign of individual users' jobs and thus increase their efficiency.

The second approach is based on the principle that benefits are achieved by thoroughly redesigning existing business processes. Analysts typically take a broad look at the organization's business objectives and procedures. They then identify old business processes to eliminate and they conceive new, automated ones to meet the objectives. Business process re-engineering has become popular lately. In Michael Hammer's 1990 *Harvard Business Review* article, "Re-engineering Work: Don't Automate, Obliterate," he contrasted the two approaches, and denigrated the automation of existing processes business as "paving the cow paths." Business process re-engineering is often expected to result in extensive business re-organization and workforce reduction.

Depending on the approach, analysts follow a variety of activities. To redesign existing processes, they frequently develop models of the entire enterprise or large portions of it. They may also review existing information systems and in doing so, may focus on current bottlenecks in existing processes and other similar problems. With either approach they may observe users as they perform their current tasks and interview them about those tasks.



**TO ORDER OR FOR
MORE INFORMATION
CALL 216/243-6900
EXT. 153**

**Joint Application Design (JAD)
Fundamentals**

ASM and The Computer Channel, Inc. **CCI** have teamed up to present **Joint Application Design (JAD) Fundamentals** in a two-hour videotape presentation featuring Dorine C. Andrews.

This videotape presentation introduces the fundamentals of successful JAD projects. It will provide viewers with a first-hand look at business area analysis workshops and the best of JAD at work. This program will also feature JAD experts discussing the "tough situations" and how best to handle them.

It will supply a framework for understanding what JAD is, JAD benefits, and how the role of JAD is changing with the continued development of information engineering, CASE tools and rapid applications development approaches. System developers, project managers, programmers, analysts, and business professionals can watch this session and:

- ✓ Understand the theory and practice of JAD.
- ✓ Find out how to use JAD to increase user involvement, improve quality and increase the speed of systems design.
- ✓ Take a first hand look at a business area analysis workshop and see JAD at work at its best.
- ✓ Get views from several JAD experts discussing "tough situations" and learn how experienced JAD facilitators react.

Analysts may use focus groups of local users and delphi studies of distant users to identify potential benefits. They may study corporate objectives and business plans to develop broad ideas about possible benefits. They may consider new developments within their own industry and within other, related industries. They may also examine new software products to help them formulate their own ideas.

A final step in the identification of benefits is to associate a value with each benefit. Sometimes, this can be a tangible, financial figure. Analysts try to combine all of the quantifiable benefits along with expected costs to express one financial figure such as a net present value or a return on investment.

Often benefits cannot be quantified. In these cases, management may need to rely on qualitative descriptions of them. In some organizations, top management may be much less reluctant to fund projects based on such intangible benefits, but many firms today advocate taking qualitative benefits more seriously.

Thus, the initial identification of benefits requires imagination and foresight. The subsequent analysis to confirm that the benefits will be achieved may also require careful measurement and prognostication. Prototypes may be helpful, but guesswork may also play a significant role.

A Comprehensive List of Potential Benefits

Table 1 shows a comprehensive list of the potential benefits of proposed information systems developed from an extensive review of articles on the subject and comments from several information systems professionals. (The categories and sequence of this list will be discussed later.) Randomly selected members of an association of information systems managers and other IS professionals identified the importance of each benefit on a scale of 1 (not important) to 7 (very important) in terms of the most recent project that the organization considered a large project. Large projects were considered to avoid responses about insignificant projects for which formal benefits analysis need not have been done. As a result, the 50 largest projects were not trivial: They had estimated costs averaging over \$6 million with a range of \$250,000 to \$100 million. Table 1 on page 20 shows the benefits ordered by the average rating of their importance for the 50 projects. The top ten benefits are now elucidated.

• Change the way the organization conducts business

The emergence of this item as the single most important benefit demonstrates that both information systems and corporate managers take a broad view of information technology in its role in providing goods and services, selling them, collecting and disbursing funds and managing the workforce. In effect, the prominence of this item may indicate that executives today increasingly perceive the advantages of information technology from a business

perspective rather than from a narrower, more technical, traditional perspective. Apparently, information systems managers present the benefits of new proposals in this context and top management extends its approbation.

In addition, "change the way the organization conducts business" may also connote major changes in business processes. Hence, the emergence of this item may also validate the growing importance of business process re-engineering. The old approach of automating existing processes to improve individual worker efficiency is apparently yielding to the broad, new approach of attempting major new initiatives to eliminate unnecessary functions while reorganizing the business and reducing the workforce.

• Enable easier access to information

Organizations often suffer from having information spread across many platforms and databases. Users must flip from screen to screen or page to page to integrate data mentally or to jot notes on paper for their further examination. For years, users have complained that they were burdened with detailed data but deficient in useful information. The high rating of this item may show that today's information technology proposals frequently attempt to remedy that situation. Its ranking might also show a growing interest in developing corporate-wide information architectures.

• Enable faster retrieval/delivery of information

The development of new reports and screens has long resided with information systems professionals. As a result of their backlog of development and maintenance responsibilities, it has frequently been difficult to provide users with timely information. The emergence of this benefit suggests that new databases accessible through fourth generation languages and other, similar contemporary application development tools may be expected to alleviate that predicament.

Moreover, the response times of large, shared computer systems have been generally variable and especially slow during peak work hours. The high ranking of this benefit may suggest that emerging client/server architectures - which place much of the processing on the desktop rather than on an overburdened shared host - are expected to remedy that problem.

• Align well with stated organizational goals

In recent years, information systems managers have grown increasingly interested in contributing to their firm's corporate strategy. They have begun to believe that if they make their goals congruous with those of top management, then information technology can make a more significant contribution to the organization. Hence, they have sought to learn more about organizational goals and objectives and to envision applications that support them. Many carry out lengthy and complex planning activities to enable

them to understand and align with these organizational goals. The prominence of this benefit attests to those information systems management ambitions to achieve alignment.

• **Enhance competitiveness/create strategic advantage**
Ever since American Hospital Supply placed terminals in its customers' sites, the use of information technology for competitive advantage has preoccupied the thoughts of information systems and corporate management. In the same sense, many managers have attributed the success and failure in various industries (such as the airlines) to their automated systems and have come to believe that a major benefit of new information technology can be to create a strategic advantage over their competitors. The importance of this benefit substantiates the fact that both systems and corporate managers believe that information systems can create such potential advantages.

• **Enhance employee productivity or business efficiency**
Both business and information systems managers have long expected computer applications to improve employee productivity. In fact, from the early days of computing when the first payrolls were automated, observers have discussed this as a major, anticipated benefit. The prominence of this item suggests that today's managers still see computing in that light. Moreover, today's competitive economic conditions may have forced employers to be more concerned than ever about employee productivity and efficiency.

• **Improve information for management control**
The use of information systems for control is a long-recognized benefit of computing. Information technology permits top and mid-level managers to observe and analyze variances in sales, production, human resources and other key areas of the organization. These systems thus permit them to take action to correct the problems. The prominence of this item suggests that managers recognize the value of information systems in facilitating management control.

• **Enable organization to respond quickly to change**
In recent years, rapid changes have begun taking place in the business environment. Global competition has escalated while large corporations have downsized dramatically. Changes in legislation, vendors' procedures and customers' preferences have motivated changes in corporate practices. For example, some industries now require electronic data interchange in order to do business with them. In other industries, sophisticated decision support systems as well as improved external intelligence through on-line databases and executive information systems are needed to play a critical role in responding to business change.

At the same time, many new information technologies (and old ones with plunging costs) such as

client/server, imaging, voice recognition, graphical user interface, multimedia and object-oriented technology are emerging. Moreover, many experienced computer users have become more sophisticated. The prominence of this benefit acknowledges that information systems managers are presenting proposals in terms of their ability to respond to these dramatic changes in information technology.

• **Improve information for operational control**
In addition to permitting top and mid-level management to control the organization (as mentioned above), information systems permit operating management to do so too. The appearance of this item among the highest ranked benefits suggests that operational control may be nearly as important as management control in proposals for new information technology applications.

• **Improve customer relations**
In recent years, observers have noted that information systems have been increasingly used to improve customer relations. Retailers have installed point-of-sale systems to make their customers more comfortable and their products more marketable. Repair firms use information technology to keep up-to-date information about their services and products. The emergence of this item signals a growing recognition of the ability of information systems to improve customer relations. It also indicates a growing recognition of the increasing need to please the customer in light of today's spiralling business competition.

Actions for Systems Managers

The importance of the potential benefits described in this article suggest some important actions for information systems managers.

First, Table 1 shows the benefits in order of importance to top management. As such, it shows the benefits that information systems managers should consider including in new project proposals. After all, these are the benefits that top management is approving. As a result, Table 1 gives rough guidelines to other information systems managers for possible benefits to stress in their own cost-benefit studies. For example, in order to attract top management funding, orient a new proposal around the means whereby the proposed project can change the way the organization conducts business, or will provide easier access to information, or enable faster retrieval/delivery of information.

Second, the findings suggest a general theme that information systems managers may want to incorporate into their cost-benefit analyses. Specifically, top management may not be as interested in direct financial savings as in broad business advantages. The absence of any explicit mention of direct financial savings in the top ten items in Table 1 suggests this theme (although many of them may imply it). Benefits explicitly mentioning the saving of money

Table 1: Benefits for 50 Largest Projects

TOP TEN

- Change the Way the Organization Conducts Business
- Enable Easier Access to information
- Enable Easier Retrieval or Delivery of Information or Reports
- Align Well with Stated Organizational Goals
- Enhance Competitiveness or Create Strategic Advantage
- Enhance Employee Productivity or Business Efficiency
- Improve Information for Management Control
- Enable Organization to Respond More Quickly to Change
- Improve Information for Operational Control
- Improve Customer Relations

ALSO CONSIDERED

- Improve the Accuracy or Reliability of Information
- Increase the Flexibility of Information Requests
- Provide Better Products or Services to Customers
- Speed Up Transactions or Shorten Product Cycles
- Present Information in More Concise Manner or Better Format
- Improve Management Information for Strategic Planning
- Save Money by Reducing Modification or Enhancement Costs
- Save Money by Avoiding Need to Increase workforce
- Enable Organization to Catch Up to Competitors
- Provide the Ability to Perform Maintenance Faster
- Enhance Credibility and Prestige of the Organization
- Provide New products or Services to Customer
- Save Money By reducing Workforce
- Help Establish Useful Links with Other Organizations
- Provide Greater Data Security
- Allow Other Applications to be Developed Faster
- Increase Return on Financial Assets
- Increase the Volume of Information Output
- Allow Feasible Applications to be Implemented
- Save Money by Reducing Communication Costs
- Facilitate Organizational Adherence to Government Regulations

do not appear until the bottom half of Table 1 in "save money by reducing modification/enhancement cost." This may suggest that information systems managers should frame their cost-benefit studies in terms of broad business advantages rather than dollars and cents. While the items at the top of the list might be quantifiable, their prominence in the rankings suggests a possible trend toward a growing interest advocating benefits in less tangible terms. While information systems managers should not ignore the quantifiable benefits of new information technology, stressing a business orientation with non-quantifiable benefits may have some merit.

Finally, this study provides a comprehensive checklist of potential benefits of new information systems. Information systems managers can review new proposals and compare their projected benefits against those in Table 1. They might reconsider the potential of a given project to provide each benefit in the table and if it is relevant, discuss it in their cost-benefit study. If a proposed project can provide a significant benefit - even one at the bottom of Table 1 - then perhaps information systems management should elucidate it in its cost-benefit study. • • •

Reference

Hammer, Michael. Re-engineering Work: Don't Automate, Obliterate, *Harvard Business Review*, July/August, 68(7/8), 1990, pp. 104-112.

Rajesh Mirani, PhD.

is Assistant Professor in the Information & Quantitative Sciences Department, Merrick School of Business, University of Baltimore, Baltimore, MD.

Albert L. Lederer

is Professor of MIS and Chairman of the Department of Decision and Information Systems at Oakland University, Rochester, MI.