

UC Irvine

I.T. in Business

Title

Business Value of Information Technology (Assessment of Information Services)

Permalink

<https://escholarship.org/uc/item/80n2g1zg>

Authors

Kraemer, Kenneth L.
Gurbaxani, Vijay
Dunkle, Debbie
et al.

Publication Date

1996-12-01

SPECIAL REPORT

BUSINESS VALUE OF INFORMATION TECHNOLOGY

ASSESSMENT OF INFORMATION SERVICES

**Center for Research on Information Technology
and Organizations (CRITO)**

Graduate School of Management
University of California, Irvine

and

CSC Index Research and Advisory Services
Cambridge, Massachusetts

1996

Kenneth L. Kraemer
Vijay Gurbaxani
Graduate School of Management

Debora Dunkle
Center for Research on Information
Technology and Organizations (CRITO)
University of California, Irvine

Nicholas Vitalari
Vice President
CSCIndex Research
and Advisory Services

ASSESSMENT OF INFORMATION SERVICES

As part of the IMP Survey, business executives were asked to rate the quality of services provided by the I/S unit that serves them. Specifically, they were asked to: “Compared to I/S units in other business units with which you are familiar, how do you rate the I/S services in your unit in terms of the dimensions listed below.” They were asked to rate the I/S unit in terms of its development activities, operations and overall return on investment. This special report presents the results of this survey. Two issues are considered: 1) the dimensions of information services assessment, and 2) comparison of manufacturing and services industries.

Methodology

The complete set of questions that were asked are included in Appendix A. A factor analysis of the items resulted in a two dimensional solution. The two factors accounted for 70 percent of the variance in the set of items. The factor analysis is based on the responses of 210 executives in 39 companies (25 services firms and 14 manufacturing firms).

The first dimension consists of the assessment of how well the business executives feel that I/S (both development and operations) is in providing service. The business executives did not distinguish between development and operations. The factor loading indicate that the operational aspects rather than application development dominate their assessment.

Exhibit 1. Factor Analysis Rating of Information Services

	Factor I loading	Factor II loading
Assessment of I/S Services		
Users' satisfaction with I/S operations	.88	.27
Helpfulness of I/S (operations) staff to users	.86	.24
Responsiveness of I/S (operations) management to user department requests	.86	.29
Overall quality of (operations) services	.85	.27
Responsiveness of I/S (development) management to user department requests	.65	.46
Users' satisfaction with I/S development	.63	.54
Helpfulness of I/S (development) staff to users	.63	.47
Overall quality of (development) service	.60	.56
Assessment of Business Investment of I/S Services		
Formal evaluation of I/S investments before decision	.13	.85
Contribution to business process restructuring	.31	.78
Return on investment from applications	.27	.77
Linkage of I/S strategy to functional needs of the business	.37	.77
Return on investment/expenses for I/S in general	.42	.75

The second dimension, on the other hand, focuses on the value of information services to aspects of the business. Business executives assess how strong information services is in investment decisions and the linkage such decisions have to the business functions.

The results of the factor analysis indicate that *in assessing information services, business executives do not distinguish between operations and development, but rather consider information services as a unit that is either weakly or strongly functioning and as a unit that either contributes to the business of the organization or does not.*

While development and operations are not highly distinguishable, it is interesting to note that in terms of the factor loading, all operations measures are grouped together and all development measures are grouped together. For this report we constructed an operations assessment scale and an application development assessment scale for description purposes. In Exhibit 2 are listed the three scales along with the reliability coefficient for each of the scales. The three scales form reliable unidimensional scales. The mean response is the mean of the business executives for the 39 firms.

Exhibit 2. Information Services Assessment Scales: Items, Means and Reliability

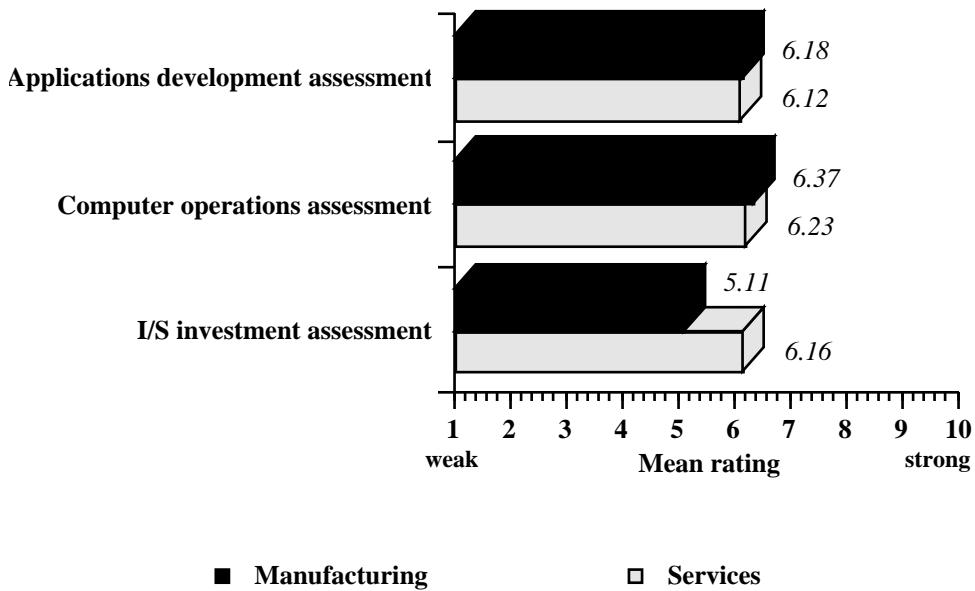
	Mean	Mini- mum	Maxi- mum
Computer Operations Satisfaction (C.R. = .94)	6.28	2.00	7.53
Overall quality of services	6.54	2.00	8.33
Helpfulness of I/S staff to users	6.42	2.00	8.00
Responsiveness of I/S management to user department requests	6.15	2.00	8.00
Users' satisfaction with I/S operations	6.00	2.00	7.78
Application Development Satisfaction (C.R. = .90)	6.14	4.42	7.59
Helpfulness of I/S staff to users	6.61	4.00	8.25
Overall quality of service	6.28	4.00	8.00
Responsiveness of I/S management to user department requests	6.11	3.67	8.33
Users' satisfaction with I/S development.	5.57	3.33	8.00
Business Value of I/S (C.R. = .91)	5.78	2.87	7.80
Return on investment from applications	6.08	2.67	8.13
Linkage of I/S strategy to functional needs of the business	5.87	3.0	8.17
Contribution to business process restructuring.	5.69	2.33	9.00
Return on investment/expenses for I/S in general	5.69	3.0	7.64
Formal evaluation of I/S investments before decision	5.61	1.00	8.10

As has been found in the past, overall, computer operations are rated slightly higher than application development although the mean difference is not statistically significant. On the other hand, business value of I/S is assessed significantly lower than the operating services components.

Manufacturing and services firms.

Exhibit 3 shows clearly that executives in manufacturing and services firms on average do not differ significantly in the assessment of computer operations and applications development. The means for manufacturing firms is virtually identical to the means for services firms for both scales. On the other hand, I/S Investment Assessment differs significantly between manufacturing and services firms. Manufacturing firm executives assign an overall rating which is nearly one point lower than services firms. What is also particularly striking is the similarity in means across the three scales for services firms.

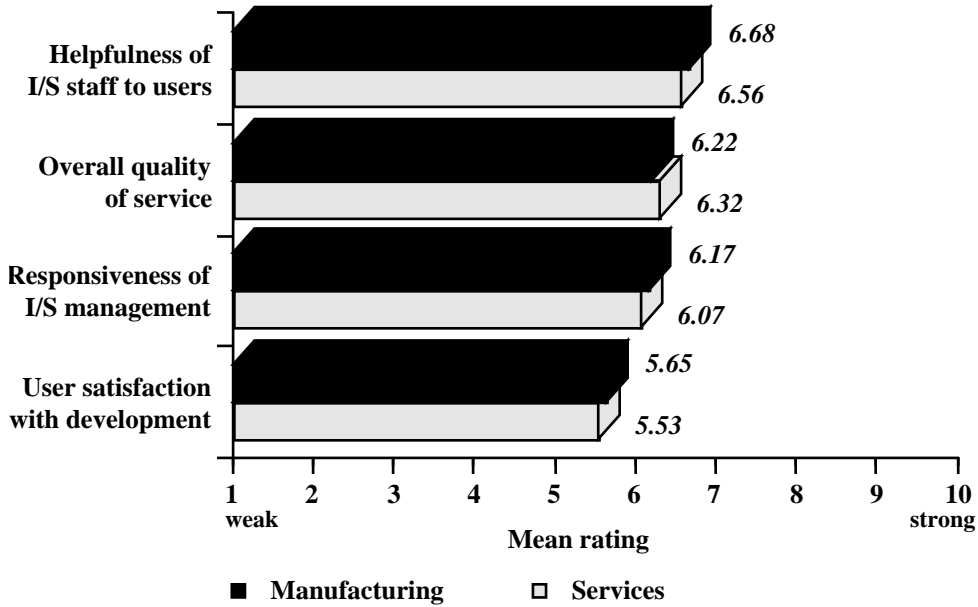
Exhibit 3. Assessment of Information Services: Manufacturing versus Services



Dimensions of I/S Assessments

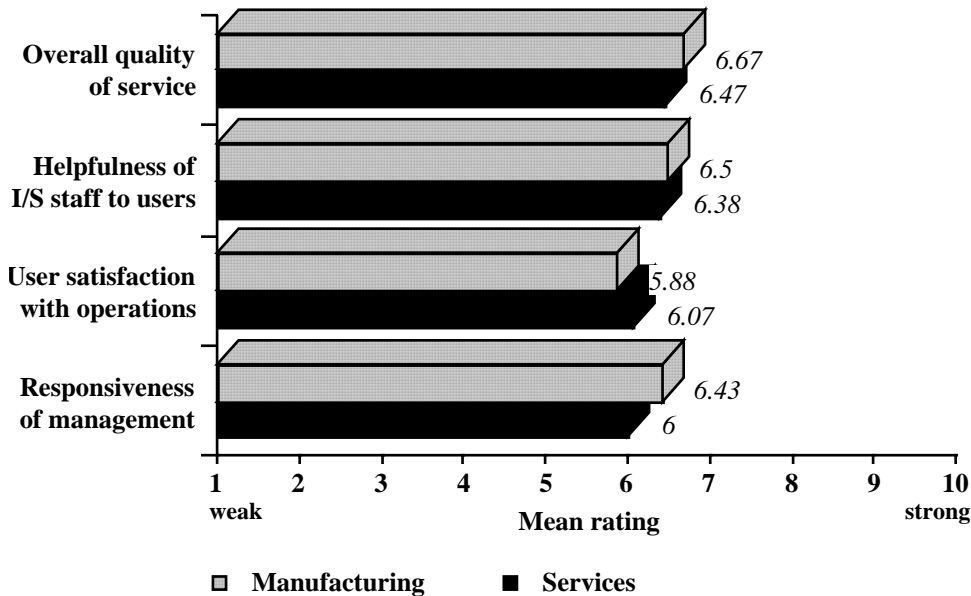
Applications development assessment. The similarity in the overall rating of I/S development between manufacturing and services is consistent for each of the items that form the scale. Of the 4 items in the scale, executives rate 'user satisfaction with development' significantly lower than the other items. This rating is similar for both manufacturing and services firms executives.

Exhibit 4. Applications Development Assessment



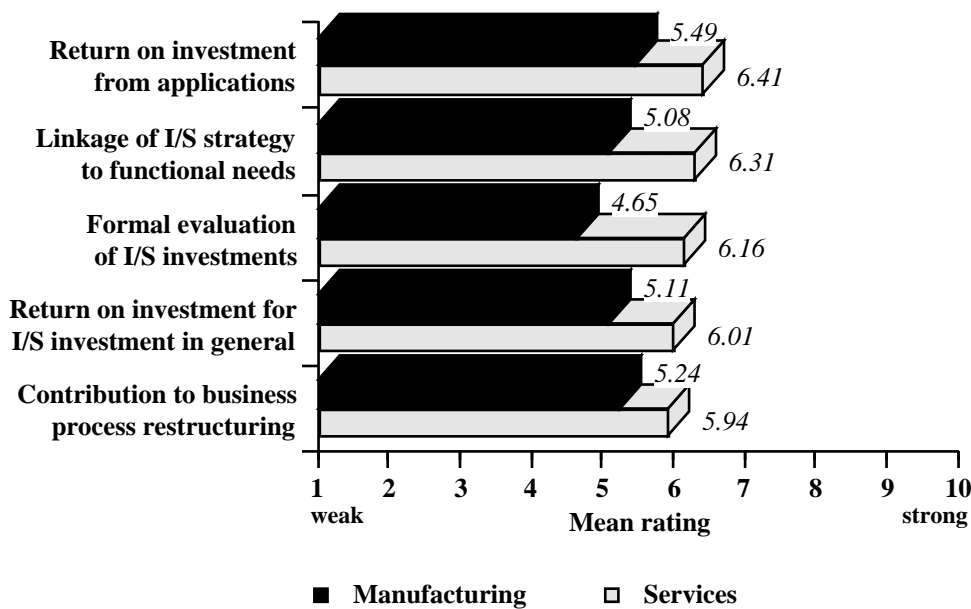
Assessment of I/S operations. Manufacturing and services firms executives rate operations as the highest (strongest) aspect of information systems services.

Exhibit 5. Computer Operations Assessment



Assessment of I/S investment. It is this area in which manufacturing firms and services firms executives appear to differ the most. This overall significant difference is shown for each of the 5 items included in the scale.

Exhibit 5. I/S Investment Assessment



**CSC Index Research and
Advisory Services**

A Company of Computer Sciences Corporation

Headquarters:

Five Cambridge Center
Cambridge, MA 02142
617.492.1500

**Center for Research on Information
Technology and Organizations (CRITO)**

University of California, Irvine
Suite 320, Berkeley Place North
Irvine, CA 92717
714.824.5246
KKraemer@uci.edu