Information Orientation (IO) How Effective Information Use Drives Business Performance

Dr. Donald A. Marchand
Dr. William J. Kettinger

Introduction

What will it take for a company to realize the potential of the information age? How can information be used for strategic advantage and impact the bottom line? We contend that efforts to measure and manage information have been too narrowly focused. Most companies continue to operate on the simple idea that better investment and management of IT alone will result in improved business performance. History tells us these efforts will continue to fail because they to do not explicitly incorporate a fundamental component of effective information use – People!

The people-centric view of information use

There is a human element to the effective use of information. People are continually challenged to interpret events in the business world, and to focus their attention on acquiring the appropriate knowledge –which resides in other people more often than in data warehouses. Effective information use in companies is dependent on the way people sense, represent, and communicate knowledge.

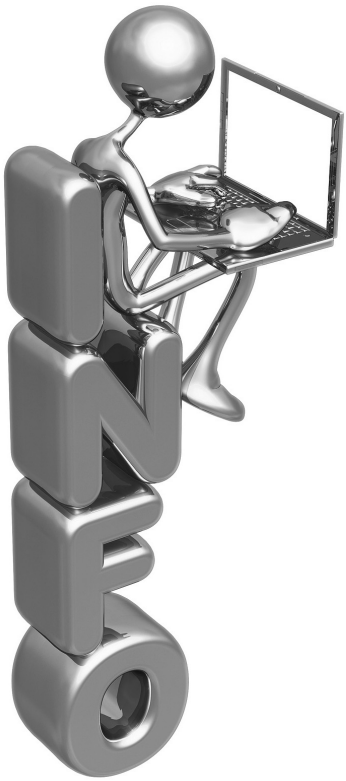
What people do with information and how they take part in its gathering and dissemination is as important as the technology they work with. There is no question that IT plays an important role but it rarely enhances the process of knowledge use. IT may deliver data to the person's desktop but it cannot dictate what they do with it. *People* implement the information management practices used for collecting, organizing, processing and maintaining information. *People* create a proactive culture in which information is used creatively and shared. Cleary, human performance must be an explicit part of the equation if a company is to have mature information capabilities – the prerequisite for success in the information age.

Unfortunately up to this point, academia has not provided managers with a framework that gives equal weight to people in managing information. In the absence of a unified theoretical framework, practitioners took it upon themselves to formalize management practice. Two broad disciplines emerged.

One discipline, often associated with the IRM – information resource management - and knowledge management movements, attempted to improve information usage by formalizing the actual activities associated with information stewardship—namely, the information management discipline. Practitioners associated with this discipline have titles such records manager, corporate librarian, information specialist, data administrator and now, web site content manager.

The other discipline, associated with the computer science and IS fields, formalized practices focused on information use in automated information exchanges using computer and telecommunication technologies—the IT discipline. Practitioners associated with this discipline have titles such as IT manager, programmer, systems analyst, database manager, network administrator, and IS manager.

Improving people's behaviors and values related to effective information use—was never really formalized nor incorporated into these separate management disciplines in a serious way. And, because improving the effectiveness of information use was not a major focus of the human resources, operations, and control disciplines, it has remained a side issue. As we move into the 21st Century, improving how people use information and actively integrate these improvements into information management and



IT practices remains an informal and incomplete management discipline. Our approach states this has to change!

An integrated theory of effective information use must tie these two separate disciplines together and also incorporate a strong people component. It should incorporate a recognition that organizations consist of relationships among people, and how they choose to contribute their knowledge to achieve organizational purposes.

We conceptualize this theory of effective information use as a spiral whereby people's good information usage behaviors and values drive better information management. This, in turn, improves the capability of a company to use IT to support decision-making and problem

solving, which reinforces good information usage behaviors and values (see Figure 1). When one of these links is derailed, the recursive aspects of the spiral are disabled and a company is less effective in using information.

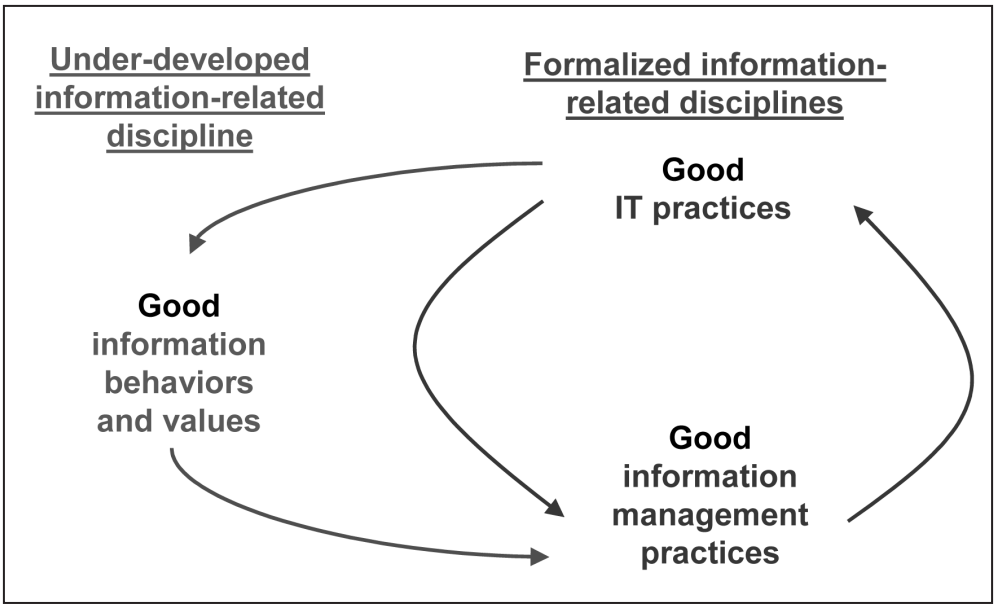


Figure 1: Spiral of effective information use in companies International Research Project.

These concerns led our team of researchers at IMD in Lausanne, Switzerland, to conduct a four-year international research study from 1997 through 2001, to confirm, or refute, this new theory of effective information use. This study examined how the interaction of people, information, and technology establishes an orientation towards the use of information within a company, and how this, in turn, affects business performance.

The core sample for the study and benchmark consisted of 1,009 senior managers from 169 senior management teams in both regional and multinational companies. CEOs represented the highest concentration of responses within an individual management-position category. The majority of responses (58 percent) came from CEOs, executive and senior vice presidents, and general managers/directors. The senior management teams represented companies and business units from 22 countries and 25 industries. Companies ranged in size from small, family-owned businesses to large, global enterprises.

Information Orientation (IO) - The Measure of Effective Information Use

Our findings discovered a new and comprehensive measure of effective information use that predicts business performance. We call this new metric "Information Orientation" or IO. Information Orientation measures the extent to which senior managers perceive that their organizations possess the capabi-

lities associated with effective information use to improve business performance. IO does this by determining the degree to which a company possesses competence across three vital Information Capabilities (IC) (see Figure 2):

- **Information Technology Practices (ITP)** – the capabilities of a company to effectively manage information technology (IT) applications and infrastructure to support operations, business processes, innovation, and managerial decision-making.

- **Information Management Practices (IMP)** – the capabilities of a company to manage information effectively over the life cycle of information use including sensing, collecting, organizing, processing, and maintaining information.

- **Information Behaviors and Values (IBV)** – the capabilities of a company to instill and promote behaviors and values in its people for effective use of information. These include integrity, formality, control, transparency, sharing and proactiveness.

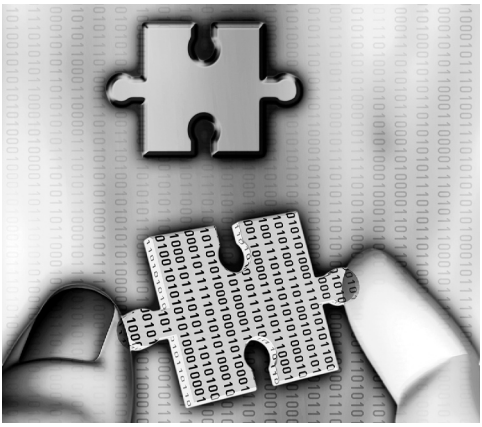
Information Orientation as a Predictor of Business Performance

To address our major research question—*Is competence in all three Information Capabilities required to achieve higher business performance?* — the study team used two proven psychometric analysis techniques, confirmatory factor analysis (CFA) and structural equation modeling (SEM), to analyze the results of the participant data. These techniques are widely used in social science, strategy, and marketing research. CFA was used to determine that the individual measurable ideas were valid and consistently perceived by senior managers.

They were also used to determine whether these validated ideas (constructs) were sub dimensions of larger "higher level" ideas, such as Information Orientation (IO). In essence, CFA provides us with a mental map of how senior managers think about effective information use in their companies. SEM was applied to validate the causal linkages between collections of validated ideas and other collections of validated ideas, such as the casual link between higher IO and higher business performance.

The premise of our measurement model is that IT practices, information management practices, and information behaviors and values together, through a shared and more comprehensive indicator (information orientation), are better predictors of business performance than any one or subset of these capabilities.

Practically, our results indicate that an organization must score high on all three information capabilities to realize superior business performance. In other



words, each of the capabilities alone is necessary but not sufficient for higher business performance. The dimensions within each information capability (see Figure 2) influence an orientation toward information use that is measured as the interaction of the three distinct information capabilities. Being high on this orientation (IO), predicts higher business performance.

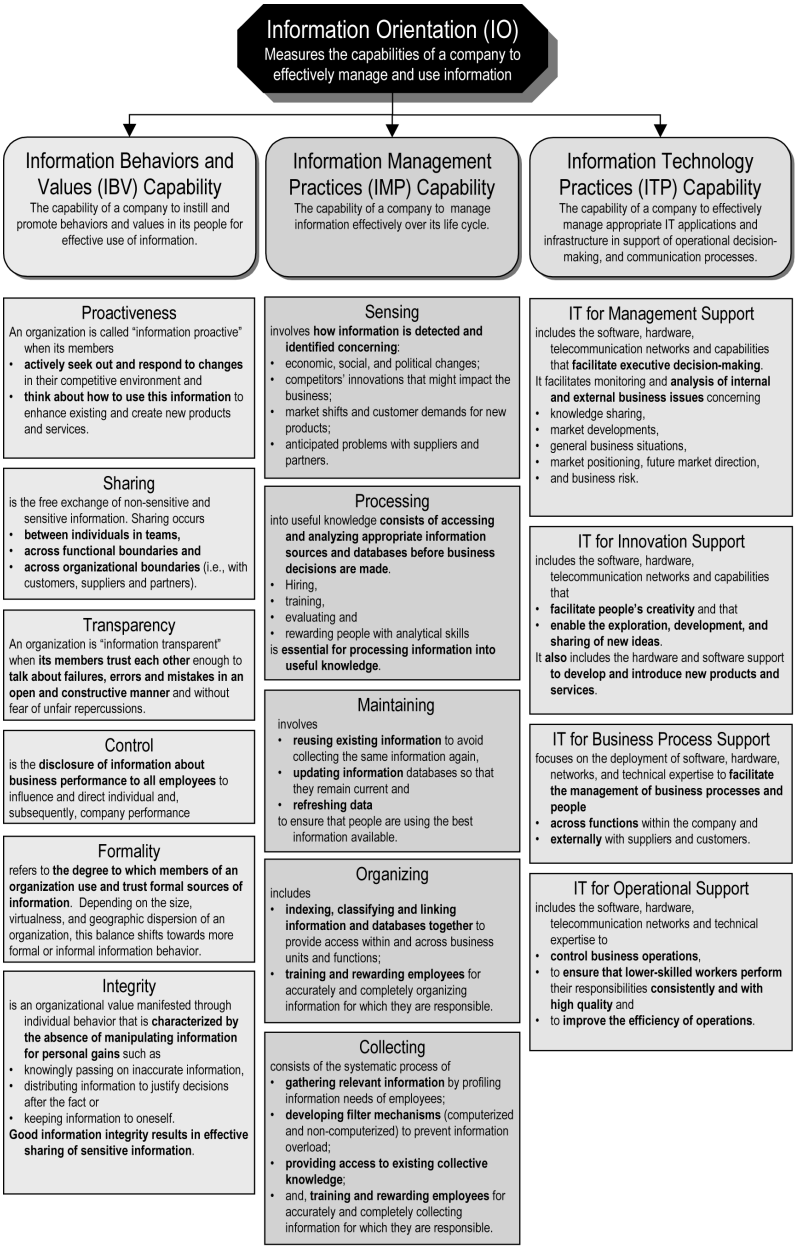


Figure 2: Key study finding Senior managers' mental model of effective information use.

Applying the IO Measure

The new IO metric has several important characteristics:

- Information Orientation is not limited to the IT department or other information management support functions; IO is an organization-wide metric.

- Information Orientation applies universally across international borders. No statistically significant differences exist between the senior manager responses in North America and Western Europe. These findings strongly suggest that the model is applicable to companies operating globally.

- Managers can use Information Orientation as a key performance indicator over time. With it, they can assess how effectively their actions have improved information behaviors and values, information management practices, and IT practices.

The Information Orientation Dashboard – The IO Diagnostic™ Tool

We developed the Information Orientation Dashboard (IO Dashboard™ in Figure 3) as a diagnostic benchmarking tool that senior managers can use to evaluate each dimension of IO in their companies. The IO Dashboard™ gives percentage rankings of each capability relative to our benchmark of global senior management teams.

Since we have found that high IO results in higher business performance, improvement in information capabilities should lead to gains in business performance. In a simple picture it shows companies exactly which information capabilities they need to improve to achieve higher IO. Managers can identify areas of strengths and areas in need of improvement.

The IO Dashboard™ is also a powerful management tool for internal or external bench marking. This diagnostic tool can be used for intra-industry and cross-industry benchmarking. Managers that need a more effective measure of global IO can use the Dashboard as a diagnostic tool in their company for comparing the information capabilities of multiple business units and divisions worldwide.

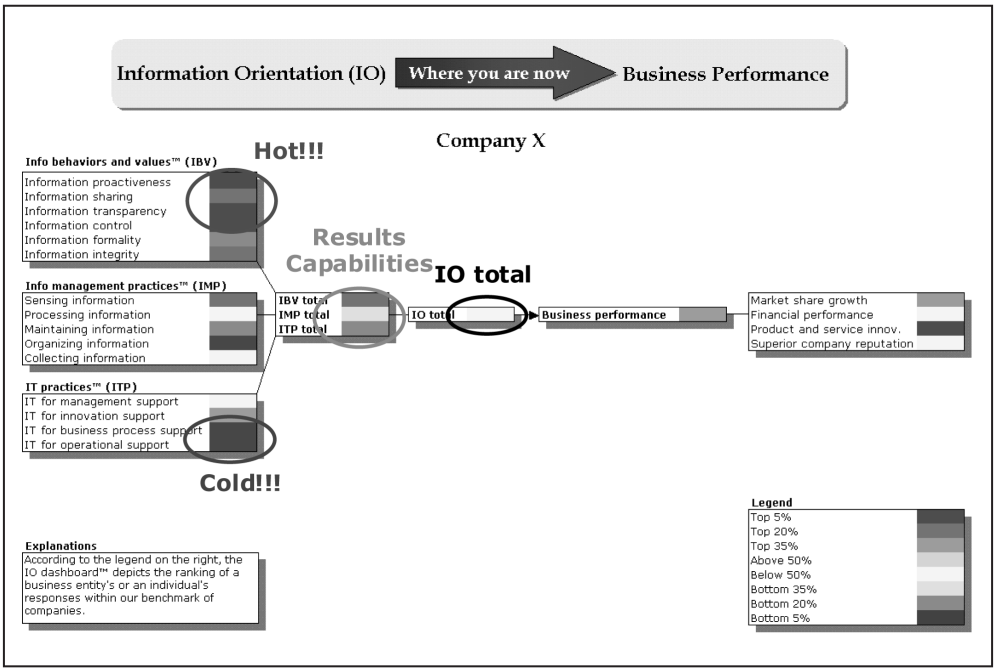


Figure 3: The Information Orientation Dashboard - Company X.

Reading and Interpreting the Dashboard

To read the IO Dashboard™, first look at the legend at the bottom of Figure 3. Note that our benchmark of business entities have been categorized in percentiles, based on their scores relative to the average sample scores across all the measures of the IO Diagnostic™. The legend is color-coded in a graduated scale from dark red (very high = HOT) to dark blue (very low = COLD) relative to the benchmark.

At the far left of the Dashboard are the dimensions. To their right are the information capabilities to which they belong. The total IO score for a business unit/company follows. To the right of the IO total score is the corresponding company's (Overall) benchmarked Business Performance total score. Finally, at the far right of the Dashboard are the items that make up the scores for business performance.

A senior manager can scan the IO Dashboard™ in either direction in order to:

- Get a snapshot of where his/her company stands in using information effectively; and,
- Understand the relationship of the company's information use to overall business performance.

Once a company has identified a problem in a dimension, managers can further ask which of weaker capabilities need to be improved to raise its scores. Since many factors can influence a company's ability to achieve high IO, we suggest periodic assessments.

How Managers Can Benefit from the IO Dashboard™

The IO Dashboard™ offers managers a "reality check" over time. Carrying out the IO assessment periodically permits an evaluation of the journey the company is taking toward achieving more effective information use. With these periodic IO measures, managers can ask the following questions. Which actions to improve information capabilities have worked? Which ones have not? Which dimensions of information capabilities does the company need to work harder on? Did the level of IO to business performance improve or decline?

Moreover, the IO of multiple business units can be assessed on a corporate-wide level. Knowing the relative information capabilities of the business units, corporate and business unit managers can develop a portfolio approach to improving information capabilities and IO levels to raise the business performance of a group or global company. Managers can learn about best practices in managing information capabilities from high-performing business units and transfer them to lower performing business units.

The IO Dashboard™ is more than a new set of operational measures. Managers can employ the IO Dashboard™ as a strategic management approach for linking long-term improvements in information capabilities to business strategies. Companies can employ the IO Dashboard™ to achieve some critical management objectives.

- First, the IO Dashboard™ can help clarify the set of business strategies and capabilities that a company must build over time to succeed. It can be used to plan and set targets to align information capabilities with business strategies.

- Second, the IO Dashboard™ can act as the "cockpit chart" to help people communicate about information capabilities improvement with corporate executives or the company's board of directors and build commitment to a business unit's or company's approach.

- Third, the IO Dashboard™ can enhance strategic feedback and learning over time. It enables managers and employees to monitor and make adjustments in the implementation of IO improvement initiatives. If necessary, fundamental changes to accelerate or redefine improvements can be made over time in response to rapidly changing business conditions. Managers and employees can discuss not only how past initiatives have improved IO and business performance, but also—more importantly—whether expectations for competing with information in the future in their industry or industries remain on track.

Achieving High IO

To enhance our knowledge of what it takes to achieve high IO, the research team analyzed the IO Dashboards of our benchmark to choose a representative set of companies for follow-up interviews. Through these on-site case studies, we gained additional rich insights concerning the fundamental differences between companies with high and low IO. This qualitative cased-based research supplemented our initial quantitative survey approach and helped us identify key

guidelines that companies follow in improving their information capabilities and, ultimately, their business performance.

Conclusion

All business organizations depend on effective information use by their people to succeed. Whether the company is a start-up looking for unprecedented new opportunities or an established business seeking superior performance in established markets, both require excellent information capabilities.

We have discovered how effective information use and business performance are linked through the interaction between people, IT and information. Companies incorporating a people-centric, rather than merely techno-centric, view of information use and which are good at all three information capabilities will improve their business performance. Moreover, if IO is measured periodically, a company can more systematically plot its course to higher performance.

Leading your company on a journey to achieve high IO and attain superior business performance takes hard work, persistence and personal commitment. Knowing this, our intent is not to promote a new management fad or offer a silver bullet solution. To undertake the journey, managers will have to develop the right mind-set about effective information use in their business. Lead and inspire your people along the way—your company will be better for it!

For detailed information concerning study statistics and methodology, refer to:

[1] Sloan Management Review, Information Orientation: People, Technology, and the Bottom Line, Summer 2000, Reprint 4145, mitsloan.mit@edu/smr

[2] Donald A. Marchand, William J. Kettinger and John D. Rollins (2001). Making the Invisible Visible: How Companies Win with the Right Information, People and IT. John Wiley & Sons. ISBN 0-471-49609-X

and

[3] Donald A. Marchand, William J. Kettinger and John D. Rollins (2000). Information Orientation: The Link to Business Performance. UK: Oxford University Press. ISBN 0-19-924067-1

***William J. Kettinger**. Is Professor and the FedEx Endowed Chair in MIS at the Fogelman College of Business and Economics at the University of Memphis. Kettinger's focus is practical, rigorous research appearing in leading journals. He has received numerous honors, such as a Society of Information Management's Best Paper Award, and has directed a SIM APC study of the business drivers of IT value. He consults with global companies such as enterpriseIQ®, AT&T, and IBM. He received his Ph.D. and an M.S. from the University of South Carolina and an M.P.A. from the University of Massachusetts at Amherst and a B.S. from Northeastern University.*

***Donald A. Marchand.** Is Professor of Strategy Execution and Information Management at IMD, Lausanne, Switzerland. He is author or co-author of eight books, over 140 articles, book chapters, cases and reports, and advises leading Designing Enterprise IT Architectures to Optimize Flexibility and Standardization in Global Business global companies. Marchand is also Chairman of enterpriseIQ® which offers proven metrics of how effective companies manage and use knowledge, information and technology. He earned his Ph.D. and M.A. at UCLA, and B.A. at UC Berkeley.*