Information Politics

Thomas H. Davenport • Robert G. Eccles • Laurence Prusak

*I*NFORMATION TECHNOLOGY WAS SUPPOSED TO STIMULATE INFORMATION FLOW AND ELIMINATE HIERARCHY. IT HAS HAD JUST THE OPPOSITE EFFECT, ARGUE THE authors. As information has become the key organizational "currency," it has become too valuable for most managers to just give away. In order to make information-based organizations successful, companies need to harness the power of politics — that is, allow people to negotiate the use and definition of information, just as we negotiate the exchange of other currencies. The authors describe five models of information politics and discuss how companies can move from the less effective models, like feudalism and technocratic utopianism, and toward the more effective ones, like monarchy and federalism. ?%

Thomas H. Davenport is a partner and director of research at Ernst & Young's Center for Information Technology and Strategy in Boston. Robert G. Eccles is professor of business administration at the Harvard Business School. Laurence Prusak is a principal, also at the Center for Information Technology and Strategy.

"Information is not innocent."

— James March[1]

During the past decade, many firms have concluded that information is one of their most critical business resources and that broadening information access and usage and enhancing its quality are key to improving business performance. The "information-based organization," the "knowledge-based enterprise," and the "learning organization," forecasted by management experts, all require a free flow of information around the firm.[2] The computers and communications networks that manipulate and transmit information become more powerful each year. Yet the rhetoric and technology of information management have far outpaced the ability of people to understand and agree on what information they need and then to share it.
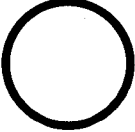
Today, in fact, the information-based organization is largely a fantasy. All of the writers on information-based organizations must speak hypothetically, in the abstract, or in the future tense. Despite forty years of the Information Revolution in business, most managers still tell us that they cannot get the information they need to run their own units or functions. As a recent article by the CEO of a shoe company put it: "On one of my first days on the job, I asked for a copy of every report used in management. The next day, twenty-three of them appeared on my desk. I didn't understand them. . . . Each area's reports were greek to the other areas, and all of them were greek to me."[3] A more accurate metaphor might be that these reports each came from a different city-state — Athens, Sparta, Corinth, Thebes, and Peloponnesus — each part of the organization but a separate political domain with its own culture, leaders, and even vocabulary.

We have studied information management approaches in more than twenty-five companies over the past two years. Many of their efforts to create information-based organizations — or even to implement significant information management initiatives — have failed or are on the path to failure. The primary reason is that the companies did not manage the politics of information. Either the initiative was inappropriate for the firm's overall political culture, or politics were treated as peripheral rather than integral to the initiative. Only when information politics are viewed as a natural aspect of organizational life and consciously managed will true information-based organizations emerge.

Furthermore, a good argument can be made — and there is increasing evidence for it — that as information becomes the basis for organizational structure and function, politics will increasingly come into play. In the most information-oriented companies we studied, people were least likely to share information freely, as perceived by these companies' managers. As people's jobs and roles become defined by the unique information

O ne reason the stakes are so high in information politics is that more than information is at stake.

they hold, they may be less likely to share that information — viewing it as a source of power and indispensability.— rather than more so. When information is the primary unit of organizational currency, we should not expect its owners to give it away.[4]

This assertion directly contradicts several academic and popular concepts about how widespread information and information technology will affect organizations. These thinkers have hypothesized that as organizations make widespread use of information technology, information will flow freely and quickly eliminate hierarchy. Mention is rarely made in such accounts of the specter of information politics.[5] Although this optimistic view has widespread appeal, it is not what we see today in companies.

When owners of key information resist sharing it either outright or, more commonly, through bureaucratic maneuvers, they are often dismissed as unfair or opportunistic. Yet they may have quite legitimate reasons for withholding the information. Political behavior regarding information should be viewed not as irrational or inappropriate but as a normal response to certain organizational situations. Valid differences in interpretation of information, for example, may lead to apparently intransigent behavior. At an electronics company we once worked with, the marketing organizations for direct and indirect channels could never agree on what constituted a sale. Getting the product to the end-customer was direct marketing's sale; getting it to the distributor, even though it might return eventually, was how the indirect group wanted to measure its success. When the indirect channel was the dominant one for

the company, this group's view of sales prevailed. Later, as more product moved directly to buyers, end-customer sales became the official definition. In information politics, might makes right. As a result of losing influence, however, the indirect group wanted to create its own sales databases and reports. Political disputes of this type will often arise when there is no consensus around the business's information needs.

One reason the stakes are so high in information politics is that more than information is at stake. In order to arrive at a common definition of information requirements, organizations must often address not just the information they use, but the business practices and processes that generate the information. Most firms have not recognized the linkage between processes and information, but there are a few exceptions. At a fast-growing specialty manufacturer, CEO-appointed information "czars" are responsible for ensuring consistency in the information-generating activities of their areas. For example, the order-processing czar mandated common companywide practices for assigning customer and product numbers, recognizing revenue, and determining contract prices. At IBM, eighteen key business processes (e.g., "customer fulfillment") are being redesigned to build a new information infrastructure. Out of each new process will come information on its performance — how long it takes, how much it costs, how satisfied the customer is with it — as well as the more traditional results-oriented information such as sales and profitability. At Dow Chemical, managers believe there must be common financial processes around the world in order to create common measures of financial performance.

The overall organizational climate is also a powerful influence on information politics.[6] Unfortunately, the very factors that make free information flow most desirable and necessary also make it less likely. An organization that is highly unstable and operating in an uncertain business, in which employees are uncertain about their job security and place in the hierarchy, needs as much information as possible about the environment and its own performance. Yet this type of organization is most likely to engender information politics that inhibit sharing.

Our purpose is to help companies understand information politics and manage them. In the next section, we classify the major models of information politics we have seen in client companies and firms we have studied. Following that, we present a set of approaches to managing information politics at both a strategic and a day-to-day level.

Models of Information Politics

We have identified five information models (or, to continue the political metaphor, "states") that are representative of the practices we have observed (see Table 1). Three of these, technocratic utopianism, anarchy, and feudalism, are less effective than the other two, monarchy and federalism.[7] After we define each model, we will evaluate their relative effectiveness along the dimensions of information quality, efficiency, commonality, and access.

Any organization is likely to have proponents for more than one of these models. Sometimes the models conflict, and sometimes one model predominates. Table 2 shows the distribution of models among the companies we studied. The first step in managing information more effectively and realistically is explicitly recognizing these existing models and then choosing a single desired state. Maintaining multiple models is confusing and consumes scarce resources. Once a model has been selected, an organization can manage the daily politics of information, just as an alderman manages a ward.

Technocratic Utopianism

Many companies have a strong bias toward approaching information management from a technological perspective. This approach eschews information politics, assuming that politics are an aberrant form of behavior. It is usually driven by a firm's information systems (IS) professionals, who see themselves as the custodians, if not the owners, of the firm's information. Their technological efforts to alleviate information problems often involve a considerable amount of detailed planning and revolve around modeling and efficient use of corporate data. Their goal is to plan a technology infrastructure that can deliver information to each individual's desktop and then to build databases with the correct structure to store this information without redundancy. Some technical efforts around information management are reasonable; however, when the technological approach to information predominates, the company's model of information management can be described as technocratic utopianism.

Although neither the IS professionals nor the users may be consciously creating a technocratic utopia, there is an underlying assumption that technology will resolve all problems and that organizational and political issues are nonexistent or unmanageable. In fact, information itself — its content, use, and implications for managing — receives little attention in this model. The focus is instead on the technologies used to manipulate the information.

We found technocratic utopianism, either by itself or alongside another model, in almost a third of the firms we analyzed. The model usually coexists, however uneasily, with other models; in fact, the technocratic utopian model is often held by a small group of technologists supported by many technical journals, consultants, and technology vendors. While the technologists plan a utopia around the free flow of information, the senior executives for whom they work usually ignore, or are ignorant of, their efforts. Because these technical models are difficult for nontechnologists to understand, managers outside the IS function are rarely active participants. If a technocratic utopia is the only political model, it is probably because senior managers have abdicated their roles in selecting and managing information.

Technocratic utopians often have three factors in common: they focus heavily on information modeling and categorization; they highly value emerging hardware and software technologies; and they attempt to address an organization's entire information inventory.

A key emphasis in most technocratic utopias is information modeling and categorization. Once a unit of information is represented in an "entity-relationship model" or a "data-flow diagram," all problems in managing it have been solved, according to the extreme utopians. They consider such modeling and categorization a key aspect of the engineering of information (indeed, "information engineering" is an established discipline within the IS profession). In this ideal world, information flows like water, and the only task is to construct appropriate canals, aqueducts, and dams in order for information to flow freely to those who need it. Information sometimes feels as common in organizations as water; since it is so plentiful, there is a natural instinct to try to channel it rather than drown in it.

Information engineering is important, of course, but

> Information sometimes feels as common in organizations as water; since it is so plentiful, there is a natural instinct to channel it rather than drown in it.

Table 1 Models of Information Politics

Technocratic Utopianism	A heavily technical approach to information management stressing categorization and modeling of an organization's full information assets, with heavy reliance on emerging technologies.
Anarchy	The absence of any overall information management policy, leaving individuals to obtain and manage their own information.
Feudalism	The management of information by individual business units or functions, which define their own information needs and report only limited information to the overall corporation.
Monarchy	The definition of information categories and reporting structures by the firm's leaders, who may or may not share the information willingly after collecting it.
Federalism	An approach to information management based on consensus and negotiation on the organization's key information elements and reporting structures.

the political aspects cannot be neglected. Information may flow like water, but in the real world even water doesn't flow without political assistance. Those knowledgeable about the back-room politics involved in bringing water to Los Angeles or about Robert Moses's political steamrolling in New York's water management will understand the role of politics in managing a "natural" resource like information.[8]

Technologists also frequently assert that new forms of hardware and software are the keys to information success. Executives often hear that they will get the information they need "when our new relational database system is installed" or "when our new network is complete." The coming panacea for many organizations is object-oriented technologies, in which information is combined with application functions in reusable modules. Too often, however, when the silver bullet arrives it does not have the intended effect. No technology has yet been invented to convince unwilling managers to share information or even to use it. In fact, we would argue that technology vendors suffer from the same political forces as do data modelers. The failure of the "diskless workstation" to thrive in the marketplace may well be due to individuals' reluctance to lose control of their information.

Finally, utopians focus on all information throughout the corporation — at least all that can be captured by a computer. A common example is the creation of an "enterprise model" — a structured inventory and categorization of all data elements used throughout the firm. Such modeling exercises often take years and yield vast amounts of detail. Although their purpose is often to eliminate redundant data storage, they often yield little

real business value. Several MIT researchers have chronicled their failure.[9] Like most utopias, they lead to nowhere (or, in Samuel Butler's famous utopian novel, *Erewhon* — nowhere almost backwards).

Technocratic utopians assume that managing information is an exercise without passion. Their rallying cry is an uninspiring, "Data is a corporate asset." They believe, consciously or unconsciously, that information's value for business decisions is not only very high but also self-evident. They assume that employees who possess information useful to others will share it willingly. They assume that information itself is valueless, or at least that its value is the same to all organizational members. If they are conscious of the relationship between information access and hierarchy, they assume that those high in the hierarchy would not restrict the free flow of information for any reason other than corporate security. These assumptions resemble human behavior found only in utopias.

Anarchy
Some firms have no prevailing political information model and exist in a state of anarchy. Rarely do organizations consciously choose this state, in which individuals fend for their own information needs. Information anarchy usually emerges when more centralized approaches to information management break down or when no key executive realizes the importance of common information. Information anarchy was made possible — and much more dangerous — by the introduction and rapid growth of the personal computer. Suddenly individuals and small departments could manage their own databases, tailoring their own reports to their own needs at any time and at minimal cost.

Although several firms we researched have allowed anarchy to survive, we found only one firm that had consciously chosen it. This software firm had previously tried to develop an overall information management structure by asking key managers what information they needed to run the business. When the firm could not achieve consensus, it determined that a bottom-up structured exchange of documents across its network, using a new software technology developed for this purpose, would yield all of the required information. Even here, however, an alternative information model flour-

ished in some quarters; as one senior executive put it, "I get all the information I need in breakfast meetings with the CEO."

The long-term shortcomings of information anarchy are obvious. Technologists might worry that so much redundant information processing and storage is inefficient, but anarchy has more serious shortcomings. When everyone has his or her own database, the numbers for revenues, costs, customer order levels, and so on will diverge in databases throughout the company. Although anarchy is seldom chosen consciously, its effects are not uncommon; we know of several firms in which it was the source of late or inaccurate quarterly earnings reports. A firm cannot survive for long with such information discrepancies. The desire for information that leads to anarchy should quickly be harnessed into a more organized political model.

Feudalism

The political model we most often encountered was feudalism. In a feudal model, individual executives and their departments generally control information acquisition, storage, distribution, and analysis.[10] These powerful executives determine what information will be collected within their realms, how it will be interpreted, and in what format it will be reported to the "king" or CEO. They can also decide what measures are used to understand performance as well as what "language," by which we mean a common vocabulary, is used within the realm. Different realms often end up with different languages, and the subsequent fragmenting of information authority diminishes the power of the entire enterprise — just as the growth of powerful noblemen and their entourages inhibited the king's power in medieval times.

Feudal actions diminish the central authority's power to make informed decisions for the common good. Key measures of the enterprise's health often are not collected, reported, or even considered beyond roll-up of financial outcomes, further diminishing the central authority's power. Corporatewide performance is of interest only to those within corporate headquarters, and its indicators may poorly reflect what is actually happening around the firm.

Feudalism flourishes, of course, in environments of strong divisional autonomy. When divisions have their own strategies, products, and customers, it is almost inevitable that their information needs will differ. Furthermore, they may also be reluctant to fully disclose potentially negative information at the corporate level.

At a major consumer electronics firm's U.S. sub-

sidiary, the feudalism was quite overt. The firm was organized along product lines; product division heads were informally referred to as "barons." Each had his or her own financial reporting system, with only the most limited amounts of data shared with the subsidiary head. The latter executive eventually brought in consultants to give a seminar on the value of common data and systems — all, the last we heard, to no avail.

> Feudal actions diminish the central authority's power to make informed decisions for the common good.

At a large consumer goods firm organized by distribution channel, each channel had its own measures of performance that it thought were important. This information autonomy had prevailed for years and was tolerated because the firm had long been profitable using any set of measures. A new CEO arrived at a time when profits were down, and he felt he had no way to manage across the entire firm. He mandated the development of a common information architecture. Unfortunately, the IS group charged with this initiative began to create a technocratic utopia. We suspect that the feudal culture will eventually prevail.

We have also seen a few examples of functional feudalism, in which financial and operational functions have their own information architectures and cannot achieve consensus on what should be monitored and how. In one high-technology manufacturing firm, for example, the quality function head created an executive information system that reported on operational performance and quality data. The IS director, and the CFO to whom he reported, strenuously opposed the system, arguing that the firm's traditional financially oriented reporting approach should be the only one. The quality-oriented system was building adherents (and product quality) until the quality director left for a summer vacation. When he returned, he found that the IS head and CFO had enlisted sufficient support from other executives to shut down the system. The battle over which type of system will eventually predominate is still raging.

Despite these battles in feudal environments, some degree of cooperation can emerge. Powerful executives can create strategic alliances to share information or establish a common network or architecture, just as feudal lords banded together to build a road or common defense wall, go to war, or plan a marriage for mutual

enrichment — although such communal efforts rarely include all of the lords. It is also possible that, as in Renaissance times, the proliferation of patrons will encourage innovation and creativity within each realm —for example, the development of a particularly useful quality information system by one division.

Monarchy

The most practical solution to the problems inherent in the feudal model is to impose an information monarchy. The CEO, or someone empowered by the chief executive, dictates the rules for how information will be managed. Power is centralized, and departments and divisions have substantially less autonomy regarding information policies.

Much depends on the approach the "monarch" takes to managing the realm's information. A more benign monarch (or enlightened despot, as they were called in the eighteenth century) will tilt toward freer access and distribution of key information and may attempt to rationalize and standardize the parameters used to measure the state's health and wealth. This top-down model may be most appropriate for firms that have difficulty achieving consensus across business units.

The rapidly growing specialty manufacturer mentioned above is an example. The CEO, who felt that information flow was critical to developing a flexible organization, decreed a policy of "common information" to bring about access to consistent information by all who needed it. His appointment of czars to define and implement common information policies reflected his belief in the importance of information management issues. Currently efforts are underway to embed this decree into a set of business practices and a technical architecture. This top-down approach is an example of enlightened monarchy at its best, since the action was taken not in response to a specific crisis but as a well-considered response to a broad organizational objective.

A progressive further step is a constitutional monarchy. Constitutional monarchy can evolve directly from feudalism or from the more despotic forms of monarchy. It is established by a document that states the monarch's limitations, the subjects' rights, and the law's authority. As a model for information management, this means that dominion is established over what information is collected, in what form, by whom, and for what ends. The chart of accounts becomes the realm's Magna Carta ("great charter"), a document establishing rules that will be enforced by processes and enabled by an information technology platform. A common vocabulary is developed so that the information's meaning is consis-

tent and has integrity throughout the firm. The financial functions at both Digital and Dow Chemical are establishing constitutional monarchies for financial information, with strong support from the CEOs.

We have seen several firms in which the installation of an executive information system (EIS) was the occasion for an attempt at constitutional monarchy. The CEO is usually considered the primary user of such a system, although some attempt is usually made to solicit

---

A n enlightened despot will tilt toward freer access and distribution of key information and may standardize the parameters for measuring the company's health and wealth.

---

the information requirements of other executives. The exercise of building consensus on the system's content can help to build a constitutional monarchy. However, the effort is not always successful. At one insurance company we studied, an EIS intended for the entire senior management team was never used seriously by anyone other than the CEO. Other executives were concerned about how their units would fare under close analysis, and they kept their own feudal information sources.

One drawback to any information monarchy is the simple fact of mortality. When a monarch dies or is overthrown, new governments can be imposed. Likewise, retirement or turnover of CEOs and senior executives can open the door to very different approaches to information, even in the most constitutional of monarchies. Cultures and traditions take years to solidify in an enterprise. In one high-tech manufacturing firm, the founder CEO's retirement led to information anarchy for many years; only now is the firm beginning to establish a more structured environment. The short reigns of most monarchs bodes poorly for the growth of persistent information traditions.

Federalism

The final information state, federalism, also has a number of desirable features, and in today's business environment, it is the preferred model in most circumstances. Its distinguishing feature is the use of negotiation to bring potentially competing and noncooperating parties together. Federalism most explicitly recognizes the im-

portance of politics, without casting it in pejorative terms. In contrast, technocratic utopianism ignores politics, anarchy is politics run amok, feudalism involves destructive politics, and monarchy attempts to eliminate politics through a strong central authority. Federalism treats politics as a necessary and legitimate activity by which people with different interests work out among themselves a collective purpose and means for achieving it.

Firms that adopt or evolve into this model typically have strong central leadership and a culture that encourages cooperation and learning. However, it takes tough negotiating and a politically astute information manager to make the federalist model work. Such an information manager needs to have the CEO's support (although not too much support, or a monarchy emerges) as well as the trust and support of the "lords and barons" who run the divisions. He or she needs to understand the value of information itself as well as of the technology that stores, manipulates, and distributes it. Such skills are not widely distributed throughout organizations, even (or perhaps especially) among IS executives.

An executive who has this perspective can then use cooperative information resources to create a shared information vision. Each realm contracts with the executive and with other realms to cede some of its information assets in return for helping to create a greater whole. This is a genuine leveraging of a firm's knowledge base.

At IBM, the former head of corporate information services, Larry Ford, concluded that the firm needed to manage information in a dramatically new way. Ford and his organization produced an information strategy that focused on the value that information can bring to all of IBM. The strategy was refined and ratified by all of the senior executives, and now Ford, his staff, and the divisional IS executives have gone out into the field to negotiate with senior managers about sharing their information with others in the company. "Would you share your product quality data with the service organization? How about sales?" Eventually all the important information will be in easy-to-access "data warehouses." Information management at IBM has become very per-

Table 2   Models Observed in Research Sites

25 Companies Studied	Federalism	Monarchy	Technocratic Utopianism	Anarchy	Feudalism
Chemicals					
Company A			✓		✓
Company B	✓	✓			
Company C	✓		✓		
Computers					
Company A	✓			✓	✓
Company B	✓		✓		
Consumer Goods					
Company A			✓		✓
Company B					✓
Direct Marketing		✓			
Electronics					
Company A					✓
Company B					✓
Entertainment					✓
Financial Services		✓		✓	✓
Gas Transmission		✓			
Information Services					
Company A			✓		
Company B	✓				✓
Insurance					
Company A		✓	✓		
Company B	✓				✓
Company C					✓
Medical Supplies					
Company A			✓		
Company B	✓				✓
Office Products	✓		✓		
European Office Products			✓		
Software					
Company A		✓		✓	
Company B				✓	
Specialty Manufacturing		✓			
Total	8	7	9	4	12

sonal politics, like the ward politician campaigning door to door.

Of course, the politician has only so much time to ring doorbells. A division may have hundreds of important data elements that need to be shared. IBM is finding that the time to educate and persuade information owners of their responsibilities is the biggest constraint to implementing a federalist model. Ford's departure from IBM to head a software firm may also place the federalist initiative at risk.

Managing Information Politics

Given these options for building an information polity, how do firms begin to effectively manage information? The first step is to select the preferred information model, as discussed in the next section. Following that, we present other principles of politically astute information management, including matching information politics to organizational culture, practicing technological realism, electing the right information politicians, and avoiding empire-building.

Select an Information State. The first step in managing information politics is figuring out which models people in the firm hold, which model currently predominates, which is most desirable, and how to achieve it. As we have noted, adopting multiple models will needlessly consume scarce resources and will confuse both information managers and users. Therefore, a firm should choose one model and move continually toward it, however long it takes.

We believe that there are only two viable choices among the five models: monarchy and federalism. In a business culture that celebrates empowerment and widespread participation, federalism is preferable, but it is harder to achieve and takes more time. Federalism requires managers to negotiate with each other in good faith while avoiding the temptation to use and withhold information destructively. Most firms we know of profess a desire to move toward a federalist model. But a firm that has difficulty getting consensus from its management team on other issues may find that federalism is impossible; a benevolent monarchy may be almost as effective and easier to implement.

Table 3 summarizes our assessments of the five political models along four dimensions: (1) commonality of vocabulary and meaning; (2) degree of access to important information; (3) quality of information — that is, its currency, relevance, and accuracy; and (4) efficiency of information management. These dimensions can be useful for evaluating a firm's current model and its effectiveness.

Commonality refers to having a set of terms, categories, and data elements that carry the same meaning throughout the enterprise. The desirability of common discourse may appear obvious, but in our experience it does not exist in many large firms. Even the definition of what a "sale" is can be variously interpreted by different divisions, to say nothing of more ambiguous terms such as "quality," "performance," and "improvement."[11]

The degree of information access is another good indicator of political culture. Many firms proclaim that all employees should have the information they need to do their work well. However, in making the choices about who actually needs what information, firms are making political decisions, whether or not they acknowledge it. The technocratic utopians focus less on what information is accessed by whom and more on the mechanisms of distribution.

In many ways the quality of information is the most important of these indicators. Information quality is achieved through detailed attention to its integrity, accuracy, currency, interpretability, and overall value. As with other types of products, the quality of information is best judged by its customers. Even companies that declare themselves as firmly in the Information Age, however, rarely have measures or assessments of their information's quality.

Efficiency is often the objective of technologists who wish to minimize redundant data storage. The incredible

Table 3   Ranking Alternative Models of Information Politics

	Federalism	Monarchy	Technocratic Utopianism	Anarchy	Feudalism
Commonality of Vocabulary	5	5	3	1	1
Access to Information	5	2	3	4	1
Quality of Information	3	2	1	2	2
Efficiency of Information Management	3	5	3	1	3
Total	16	14	10	8	7

Key: 5=high   3=moderate   1=low

improvements in price-performance ratios for data storage technologies have reduced this issue's importance somewhat. However, there is still the human factor. Multiple measures of the same item take time to analyze and synthesize. Effective management requires focusing on a few key performance indicators. Computers and disk drives may be able to handle information overload, but people still suffer from it.

Federalism has the potential to be effective on all four dimensions of information management. A common vocabulary emerges through negotiations between levels and units. This makes possible the widespread access and distribution of meaningful information, which is then used for the benefit of the whole enterprise. Federalism strikes a balance between the unintegrated independence of the feudal baronies and the undifferentiated units under monarchy. Although satisfying all constituencies may require gathering more information than is absolutely necessary (hence decreasing efficiency), and the necessary compromises may reduce quality, federalism scores higher in the minds of the managers we interviewed than any other model.

Because federalism explicitly acknowledges the important positive role that information politics can play, it is apt to be the most effective model for companies that rely on individual initiative for generating collective action. This is most likely to be the case for companies operating in complex and rapidly changing competitive environments, which create a high level of uncertainty. The federalist approach supports both autonomy and coordination. Accomplishing it, of course, requires negotiating skills and the willingness of managers to take the time to negotiate. Not all companies have executives with the ability or the commitment to do this. The temptation always exists to look to a strong monarch to resolve the endless negotiations by fiat, to fall prey once more to the alluring utopian vision painted by the technologists, to fall back into a nasty and brutish condition of feudal conflict, or to dissolve into the chaos of anarchy. Firms may want to pursue alternative models, in case federalism fails. In fact, as Table 2 shows, many of the firms pursuing federalism were also pursuing other models, either consciously or implicitly as a backup strategy. Sooner or later it is obviously best to settle on one model, though most firms find this difficult.

An information monarchy solves some of the problems of managing information throughout the enterprise. A strong, top-down approach ensures that a common language — in both vocabulary and meaning — underlies the information generated. Little unnecessary information is collected or distributed, guaranteeing a

high level of efficiency. The monarch and his or her ministers mandate and oversee the right processes to generate the right information to be used in the right way — all enhancing information quality, at least as

---

In the information-based organization, information becomes the primary medium of value and exchange, and who would give it away for free?

---

they perceive it. These advantages, however, are often gained at the expense of information access. It is the rare monarch who has enough democratic ideals to make information as broadly available as in a federalist state.

Technocratic utopianism focuses on using information technology to dramatically improve data distribution. Efficiency is high, at least in terms of a lack of data redundancy. Information access is also relatively high, at least for technologically oriented users. Because technocratic utopians do not concern themselves with the processes that produce information, the quality of information remains low. Further, the quality of information usage is inhibited by technocratic efforts such as complex data modeling that are often not understood or appreciated by line managers. As a result, the informtion produced by computer systems and the information actually used to manage the company are decoupled. Although this model scores high in principle, many of these initiatives fail. Commonality, access, and efficiency in a failed utopian scheme may actually be as low as in feudalism or even lower.

Although few executives would consciously adopt anarchy, it is not the lowest-scoring model. Commonality and efficiency are the lowest possible, of course, but at least individuals have easy access to the data they need. The customer controls information, thus its quality is likely to be high — unless the customer is an executive trying to take an organizationwide perspective.

Feudalism is the least effective political model along these dimensions. The existence of strong, independent, and often warring fiefdoms prevents the development of a common vocabulary and shared meaning. The feudal lords restrict access to and distribution of information under their authority. Feudalism gets only middling marks for quality; it may be high for individual divisions, but it is low from the corporate perspective. Finally, because some information is duplicated around

the organization, efficiency is also only moderate. Feudalism is the least desirable yet the most common state in the organizations we researched; when more difficult and effective models fail, it is easy to fall back into the feudal state.

The key in managing information politics is to know which political model is currently in ascendance within the firm and to which the organization should be moving. Most firms we know of profess a desire to move toward a federalist model, while currently operating in a feudal or technocratic utopian environment. But a firm that has difficulty getting consensus from its management team on other issues may find that information federalism is impossible; a benevolent monarchy may be almost as effective.

Match Information Politics to Your Organizational Culture. It is no accident that democracy emerged in eighteenth-century America, a sprawling continent with vast resources and an ethic of independence and self-sufficiency. Similarly, a firm's culture must be conducive to participative information management and free information flow before they will happen. Put another way, information flow does not make an organizational culture less hierarchical and more open; rather, democratic cultures make possible democratic information flows. When faxes were flying to and from pre-Tiananmen China, some observers argued that the free flow of information was leading to a more open society; now that the faxes and those who faxed are silent, we know that the causal relationship was in the other direction.

Information policies, we have found, are among the last things to change in an organization changing its culture. We have never seen increased information flow leading to elimination of a management layer or a greater willingness to share information. When these latter changes happen, they happen for reasons unrelated to information: restructurings, tighter cost control, external events (e.g., the 1970s' oil shocks or the current banking crisis), and so forth. Several companies, however, state that their new organization could not have survived without new information policies. Phillips Petroleum, for example, radically reduced its management ranks after a raider-forced restructuring. A new information policy was the key to its functioning.[12]

We observed this relationship between organizational culture and information politics in two computer companies. One firm was a fast-growing personal computer (PC) manufacturer when we studied it; since then, its growth has slackened. The other firm was a large manufacturer of several types of computers that was experiencing financial problems when we visited it. Their cultures seemed similar at first glance; they both had tried to develop cultures in which information was shared freely throughout their organizations with little regard to level or function. However, two key aspects of their cultures — their organizational structures and their relative financial success — had led to radically different information politics.

The PC firm had a traditional functional structure. According to the executives and employees we interviewed, information flowed relatively freely in the company. The firm had an explicit ethic of open communications, stressing early notification of problems and a "don't shoot the messenger" response. As a key U.S. executive stated, "Someone in international can request any piece of data and ask us to explain it. Allowing others access to information requires a lot of trust, but that trust seems to exist here." However, the firm is beginning to face more difficult competitive conditions, as PCs increasingly become commoditized. In more difficult times, with new management, the open information environment may not persist.

The other firm had a "networked" organization, with ad hoc teams assembling to address specific tasks. This structure, which made the firm flexible and responsive, also seemed to hinder the flow of important information. Several managers we interviewed reported that hoarding of valuable information was common. The ad hoc teams often resisted sharing their unique information. The managers we interviewed speculated that this was because a team that shares its information fully may lose its reason to exist. This is particularly true during the economically difficult times now facing the company. If an organizational structure is defined by information nodes, then those who freely surrender information may lose their place in the structure. Put more broadly, in the information-based organization, information becomes the primary medium of value and exchange, and who would give it away for free?

How do you know when your culture is right for more democratic information politics? There are a number of indicators. We have noticed, for example, that companies that successfully implement quality programs have to deal with many of the same issues affecting information flow. They have to empower front-line workers to make decisions, work cross-functionally to improve processes, and remove as much as possible the use of fear as a motivator. Similarly, companies highly attuned to customer satisfaction must be able to deal

with negative results in a positive fashion — a trait highly necessary in an information democracy.

Not surprisingly, in an era of mergers, acquisitions, and global management, most large organizations have multiple political cultures. A newly acquired firm may resist adopting the information-sharing norms of its acquirer (or even, as seen in *Barbarians at the Gate*, of its potential acquirers attempting to perform due diligence).[13] Poorly performing divisions will rarely be as enthusiastic about new information reporting initiatives as long-term strong performers. And geographic differences affecting the willingness to share information are legendary; how many times has it been uttered, "We're having problems getting data from our French subsidiary."

Practice Technological Realism. Although technology will not lead us to an information utopia, there are still important technological factors to consider. Information engineering should be highly focused, information should be in units that managers can understand and negotiate with, and technology platforms should be as common as possible.

Previously we pointed out the folly of trying to engineer an organization's entire information inventory. We (and other researchers) believe that focused, less ambitious information management objectives are more likely to succeed, given that the volume of information in corporations is too great to be rigorously categorized and engineered.[14] This is particularly true in a federalist environment, in which each key information element will require substantial negotiations. Information management efforts must be directed at only those information elements that are essential to implementing strategy and to running the business day to day. At IBM, for example, the firm's internal information strategy focuses primarily on customer and market information and secondarily on process quality information.[15] Although this approach includes a great deal of data, it also excludes a considerable amount.

It is also important to acknowledge that not all information will be managed through technological means, just as most of the water around us does not run through our water meters. Only about 5 percent to 10 percent of the information in most firms is in electronic form. According to a recent study of information use by managers, even computer-based data are often preceded by word-of-mouth renditions of the same information.[16] The verbal and visual information that informs all of us is not totally unmanageable, but it cannot be modeled and categorized through technological means.

Companies may also find it useful in negotiating on information to use a larger unit of information than the data element. Most managers do not think in such narrow terms; as one executive said, "Don't give me all the molecules; tell me the key compounds they can form." A more relevant unit of information may be the document — form, report, or memo. Technologists must concern themselves with the data elements that appear on documents, but managers will normally be happy not to delve below the document level in developing a common information language. Xerox, having designated itself "The Document Company," is beginning to explore how business processes can be supported through documents.[17]

A key aspect of making information more widely available, ineffective technocratic utopias to the contrary, is the nature of the information technology platform. Specifically, technology for widespread information use must be common, easily used, and interconnectible.[18] Technological realists recognize that their computers may not be best for all applications, but they meet basic needs. Common, standardized technology is essential if the same information is to be presented in the same way all around the company. Aetna Life & Casualty, American Airlines, Du Pont, IBM, and a large consumer products firm are all initiating efforts to build and operate a common platform for information distribution. This may seem obvious, but few companies can send a piece of data to all their workstations without considerable machinations to address different products, protocols, and other technical particulars. These companies are discovering that the same federalist approach required for achieving consensus on information meaning is also required to achieve consensus on a standard technology platform.[19]

Elect the Right Information Politicians. Along with having a suitable political culture and technology environment, companies desiring to change their information politics must elect (or otherwise get into office) the right information politicians. We find that the information politician role — not the owner of information but the manager with primary responsibility for facilitating its effective use — is still up for grabs in many companies, despite some pretenders to the throne. In one fast-growing software company, for example, problems with information flow were widespread, but no one below the CEO took any ownership of the problem.[20] One would assume that CIOs would own this domain, but until now they have not necessarily been the best choice.

Until recently, most CIOs were selected for technical

acumen rather than political skills. Few would have embarked on initiatives to improve the way information — not just information technology — is used and managed. Only a few IS function heads have the political clout to persuade powerful barons to share their information for the good of the entire kingdom. Still, this is changing. At companies such as IBM, Xerox, Kodak, and Merrill Lynch, recent CIOs have been fast-track executives with records of managing important non-technology aspects of the business. If these nontechnical managers can master the considerable technical challenges in creating an information infrastructure, they will likely have the skills and influence to bring about a political environment in which the information can be shared and used.

The CFO is another candidate for information politician. Most CFOs, however, are solely associated with financial information. In order to take on broader responsibility for information management, they must at a minimum convince operational executives of their ability to understand and manage operational performance information. We have found a few CFOs with the sincere desire to do this but have seen no examples of a CFO becoming a successful information politician.

The CEO is perhaps best positioned to lobby for a particular information environment; indeed, in an information monarchy, the CEO is the only politician who counts. In more democratic environments, such as federalism, the CEO must appreciate the importance of information and communicate it throughout the firm. The time demands of day-to-day information negotiation may require that the CEO delegate political authority to other managers.

Like real politicians, information politicians must be good at both charismatics and organization. They must be able to persuade both individuals and the masses of the importance of information management and the correctness of the chosen political model. They must also organize collections of "advance agents" and "ward heelers" to work every day at building coalitions, influencing opinion leaders, and swaying recalcitrant members of the electorate.

Avoid Building Information Empires. Because information is such a powerful tool, federalist organizations will inherently resist or distrust managers who try to build an empire by controlling information. Concentration of all responsibility for collecting, maintaining, and interpreting information in one person, regardless of position, is too much power in any organization with democratic leanings. In fact, the concept of information

ownership is antithetical to federalist information management. Rather, companies should institute the concept of information stewardship — responsibility for ensuring data quality — with ownership by the corporation at large. Stewardship of information, again perhaps at the document level rather than for individual data elements, should be assigned widely throughout the organization.

The IS organization should be particularly careful to avoid building an information empire. It may already wield considerable power by virtue of its technical custody of information. We have observed organizations that cede control over information to this "independent" third party, assuming that it will not use information for political gain. But the IS function may have its own interests to advance, its own kingdom to build.

For example, at a major direct marketing firm, nontechnical executives were intimidated by technology, and control over the firm's sixty-million-name database was ceded to IS. As a result, access to the database had to be on terms acceptable to IS. This often meant denial and delay to managers wishing to exploit the database for valid business purposes. IS built a proprietary database management system, further reinforcing the walls around the database. When the CEO himself was denied a report, the IS head was deposed and replaced by a trusted nontechnical associate of the CEO. Yet because he could not understand the technology, he could not dismantle the walls around the data. A new IS vice president was brought in from outside the company with an explicit mandate to open up the empire.

Conclusion

Explicitly recognizing the politics of information and managing them constructively is a difficult, complex, and time-consuming task. It will not happen by itself, nor will the problem go away. Effectively managing information politics requires a shift in organizational culture; new technology and even new executives alone are not enough to make this happen. Information management must become something that all managers care about and most managers participate in. They must view information as important to their success and be willing to spend time and energy negotiating to meet their information needs. As in real democracies, democratic information models like federalism require informed participation of all organizational citizens.

Unless the politics of information are identified and managed, companies will not move into the Informa-

tion Age. Information will not be shared freely nor used effectively by decision makers. No amount of data modeling, no number of relational databases, and no invocation of "the information-based organization" will bring about a new political order of information. Rather, it will take what politics always take: negotiation, influence-exercising, back-room deals, coalition-building, and occasionally even war. If information is truly to become the most valued commodity in the businesses of the future, we cannot expect to acquire it without an occasional struggle. ◆

References

1. J.G. March, *Decisions and Organizations* (Cambridge, Massachusetts: Basil Blackwell, 1988).

2. For example: M.S. Scott Morton, *The Corporation of the 1990s: Information Technology and Organizational Transformation* (New York: Oxford University Press, 1991);

P.G.W. Keen, *Shaping the Future: Business Design through Information Technology* (Boston: Harvard Business School Press, 1991); and

D.R. Vincent, *The Information-Based Corporation: Stakeholder Economics and the Technology Investment* (Homewood, Illinois: Dow Jones-Irwin, 1990).

3. J. Thorbeck, "The Turnaround Value of Values," *Harvard Business Review*, January-February 1991, pp. 52-62.

4. J. Pfeffer, *Power in Organizations* (New York: HarperBusiness, 1986).

5. See articles in W.G. McGowan, ed., *Revolution in Real-Time: Managing Information Technology in the 1990s* (Boston: Harvard Business School Press, 1991). A notable exception to the apolitical perspective is found in

M.L. Markus, "Power, Politics, and MIS Implementation," Communications of the ACM 26:6 (June 1983): 434-444.

6. J.G. March, "The Business Firm as a Political Coalition," in J.G. March (1988).

7. A term similar to "technocratic utopianism" has been defined, without reference to information management, by Howard P. Segal. See:

H.P. Segal, *Technological Utopianism in American Culture* (Chicago: University of Chicago Press, 1985).

8. See R.A. Caro, *The Power Broker: Robert Moses and the Fall of New York* (New York: Random House, 1975); and
Chinatown, the film.

9. See D.L. Goodhue, J.A. Quillard, and J.F. Rockart, "Managing the Data Resource: A Contingency Perspective," *MIS Quarterly* (September 1988), 373-392; and

D.L. Goodhue, L. Kirsch, J.A. Quillard, and M. Wybo, "Strategic Data Planning: Lessons from the Field" (Cambridge, Massachusetts: MIT Sloan School of Management, Center for Information Systems Research, Working Paper No. 215, October 1990).

10. Some interesting examples of feudalism, again largely outside the information management context, are described in:

J. Pfeffer, *Managing with Power* (Boston: Harvard Business School Press, 1991).

11. Some of the reasons for these discrepancies are described in:

S.M. McKinnon and W.J. Bruns, Jr., *The Information Mosaic* (Boston: Harvard Business School Press, 1992).

12. L.M. Applegate and C.S. Osborn, "Phillips 66 Company: Executive Information System," 9-189-006 (Boston: Harvard Business School, 1988).

13. B. Burrough and J. Helyar, *Barbarians at the Gate* (New York: Harper & Row, 1990).

14. See Goodhue et al. (1988) and
Goodhue et al. (1990).

15. "Using Information Strategically: A Road Map for the 90s," Information and Telecommunications Systems, IBM Corporation, 15 November 1990.

16. McKinnon and Bruns (1992).

17. See the proceedings volume from the Xerox Document Symposium, March 10-11, 1992, Xerox Corporation, Stamford, Connecticut.

18. L. Sproull and S. Kiesler, *Connections: New Ways of Working in the Networked Organization* (Cambridge, Massachusetts: MIT Press, 1991).

19. See J. Linder and D. Stoddard, "Aetna Life & Casualty: Corporate Technology Planning," 9-187-037 (Boston: Harvard Business School, 1986).

20. J. Gladstone and N. Nohria, "Symantec," N9-491-010 (Boston: Harvard Business School, 1990, revised 4 February 1991).

Reprint 3414