Strategic planning in industry relies upon a wide range of processes and information systems that provide critical information. But there is a paradox with regard to investments in information technology:

- research has shown no relationship between corporate investments in information technology (IT) and profitability;¹
- other studies suggest little relationship between national investments in IT and economic performance (growth in GDP);
- other research has shown that investments in information technology have led to little or no measurable increases in aggregate white-collar productivity in the United States.²

It seemed reasonable, therefore, to explore how successful corporate planners make use of IT. With this in mind, the study team sought to explore how industry thought about strategic planning and about how best to harness information technology in support of this planning, and what lessons might be useful to the DCSINT in improving support to Army long-range planners.

¹According to Price Waterhouse Change Integration Team (1996, p. 162), few organizations have mastered the ability to develop systems that work, and IT project failure is an issue of great concern to project management:

Some surveys have indicated that as much as 75 percent of the money spent on new systems is expended on applications that either never make it into production or fail to meet the objectives that justified investment in the first place.

COMMON THEMES ON INFORMATION SUPPORT TO STRATEGIC PLANNING

As specialists from Ernst and Young describe it, the fundamental problem for successful investments in IT remains embedding such decisions in an understanding of how technology can assist in providing “the right information, [at] the right time, and the right place”:

This is a definition that can be provided only by those executives charged with making consequential decisions for organizations. The answer, “all the information, right away, and everywhere,” is untenable, no matter how often it is the implicit message in technology sales pitches or lazy information plans.³

Firms derive their information needs from the key performance measures that are used in strategic planning:

Measurements—not data—are the foundation of management practice. Properly designed and used, measures can articulate strategy, drive change, shape behavior, focus action, and align management around activities that lead to success. Without sensible, balanced measurements, most of your organization’s energy and actions are of no value to customers, to shareholders, or to employees. The worst measures (there are many) destroy value.⁴

These measures need to be aligned with business strategies and revisions to strategies, so that the firm can assess its current performance in terms of its goals and objectives while also assessing its ability to achieve the higher levels of performance envisioned in the next period. Put another way, the performance measures need both to reflect the performance objectives of the current period and to provide diagnostic information for the firm’s ability to move to higher levels of performance.

These performance measures should also be balanced and small in number, focusing managers on a few key indicators that capture the essence of the organization’s utility function. The identification of performance measures is best accomplished by filtering prospective

measures through the firm’s objectives and strategies—if they don’t appear to contribute to the bottom line in an important way, they are probably not the right measures.

Finally, as much attention is given to the process of developing performance measures as the measures themselves: it is essential that a consensus on performance measures be built among stakeholders, since a lack of ownership of such measures can cause them to be ignored or subverted. A Delphi or other group decisionmaking process is frequently used to this end, with participants asked to range candidate performance measures on the basis of

• relevance: the degree to which the measure is linked to the company’s strategies and objectives;

• usefulness: how well the measure helps to identify the strengths and weaknesses of underlying business processes;

• understandability: how easily the measure can be understood; and

• availability of data: how easily the necessary data for the measure can be obtained.5

**INDUSTRY CASE STUDIES**

The three industries we chose to study were the computer manufacturing industry, the commercial aerospace industry, and the automobile industry (Table 2). These industries were selected because, like the Army, their firms typically have large budgets, make large investments in research and development (R&D), and operate long planning horizons.

Based upon the data in Table 3 we identified two companies—General Motors and Hewlett-Packard—that appeared to have particularly high absolute levels of R&D spending; with the merger of Boeing and McDonnell-Douglas, it seemed natural to choose Boeing for our commercial aerospace company.

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Accordingly, we reviewed annual reports and other documents for these three companies, and we had a day of meetings with strategic planners in two of them.6

### Table 2
**Industries for Strategic Planning Analysis**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Capitalization</th>
<th>R&amp;D</th>
<th>Estimated Product Cycle</th>
<th>Estimated Life Cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer</td>
<td>High</td>
<td>High</td>
<td>9 months</td>
<td>3 years</td>
</tr>
<tr>
<td>Automobile</td>
<td>High</td>
<td>High</td>
<td>3–5 years</td>
<td>10 years</td>
</tr>
<tr>
<td>Aerospace</td>
<td>High</td>
<td>High</td>
<td>5–10 years</td>
<td>20 years</td>
</tr>
</tbody>
</table>

### Table 3
**Top R&D Spenders in 1996**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Motors</td>
<td>8,900</td>
<td>8.5</td>
</tr>
<tr>
<td>2</td>
<td>Ford Motor</td>
<td>6,821</td>
<td>3.0</td>
</tr>
<tr>
<td>3</td>
<td>IBM</td>
<td>3,934</td>
<td>16.2</td>
</tr>
<tr>
<td>4</td>
<td>Hewlett-Packard</td>
<td>2,718</td>
<td>18.1</td>
</tr>
<tr>
<td>5</td>
<td>Motorola</td>
<td>2,394</td>
<td>9.0</td>
</tr>
<tr>
<td>6</td>
<td>Lucent Technologies</td>
<td>2,056</td>
<td>(23.7)</td>
</tr>
<tr>
<td>7</td>
<td>TRW</td>
<td>1,981</td>
<td>5.3</td>
</tr>
<tr>
<td>8</td>
<td>Johnson &amp; Johnson</td>
<td>1,905</td>
<td>16.6</td>
</tr>
<tr>
<td>9</td>
<td>Intel</td>
<td>1,808</td>
<td>39.5</td>
</tr>
<tr>
<td>10</td>
<td>Pfizer</td>
<td>1,684</td>
<td>16.8</td>
</tr>
</tbody>
</table>


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6Meetings with General Motors strategic planners were held on August 27, 1997, at their offices in Warren, Michigan; meetings with Hewlett-Packard were held on September 2, 1997, at their offices in Palo Alto, California. We were unable to arrange meetings with Boeing’s planners but were sent information on the Boeing strategic planning process.
IMPLICATIONS FOR IDENTIFYING INFORMATION SUPPORT MODELS

Based on our literature review and interviews with corporate planners, Army long-range planning appears to have much in common with the activities that are intrinsic to strategic planning in industry.

A framework for applying what we learned from industry into the Army decision-based planning paradigm follows:

• vision and objectives guide the development of strategies;
• strategies systematically relate means to ends to realize the vision and achieve the objectives;
• plans capture the essential elements of strategies;
• assumptions are made that provide the premises for strategies and plans;
• signposts need to be designed to continuously test assumptions, to make sure that the assumptions (and plans) remain viable;
• information needs can be derived both from the signposts and through the mapping of key decisions that need to be made to their underlying criterion variables;
• information support should be designed to provide for information needs arising from the key assumptions and decisions; and
• information delivery choices—whether to use hard copy reports, briefings, information systems of various kinds, or other channels—should hinge on both the nature of the information and the nature of the audience, its needs, and its technological sophistication.7

COMPARISONS WITH THE ARMY

At systems level, the Army is making progress toward implementing its technical architecture. For example, the DISC4, Army Digitization

7For example, information systems can be designed either to give all users the same information or to allow users to establish profiles that filter through only the information of interest to them. More will be said of this later.
Office, and others have a mature plan for the system and technical architectures to support Army IT. Intelink, a secure portion of the Internet in which classified intelligence sites can communicate and interact, is but one product of this long-term effort, and currently it is available to about half of Army intelligence’s consumers. About 30 percent of all Army intelligence is disseminated via electronic mail or by on-line data bases. Intelligence on demand, an Army program just under way, seeks to make intelligence available to its consumers in electronic form as it is needed. Some progress toward better exploiting IT is being made. But problems persist.

As our case studies from industry noted, successful civilian planners make sure they understand customer needs before turning to IT. The Army has taken a similar approach, establishing the Intelligence Priorities Process Implementation Plan to create “a formal process for the Army to identify and voice its intelligence priorities in support of its Title X mission.” Army Priority Intelligence Needs Surveys (APINS) conducted in 1994 and 1995 provided a formal and high-priority means for intelligence consumers, including the long-range planners, to make their needs known. As the APINS responses made clear, however, ODCSINT did not have the resources to satisfy all customer requirements at once; the customers would have to prioritize their needs to assure that the most compelling were satisfied as soon as possible.

Personnel reductions since 1991 have left ODCSINT and its field operating activities with 30–40 percent fewer analysts than before. But the intelligence problem is more complicated than it was in 1991; when current and futures intelligence are considered together rather than concentrating on the Soviet Union as the principal threat, as the United States did through most of the Cold War, today’s intelligence analysts find themselves facing growing lists of questions about the

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11Estimate from ODCSINT.
world at large. Communications and connectivity technology offers at least the potential to help this smaller cadre of analysts satisfy the growing demands of various intelligence consumers.

Nevertheless, as the project team discovered during its workshops and from canvassing intelligence consumers, many customers, especially in ACQ and FD, remain wedded to paper products, which adds the printing process to intelligence production and creates an obstacle to the full exploitation of IT. Many, especially those involved in threat integration, are frustrated by a lack of timely responses from ODACSINT. Communications and connectivity technology has the potential to address some of these problems, especially if the planners can make the internal administrative adjustments necessary to accept electronic media “soft copies” instead of paper documents, largely a cultural adjustment. Just as the post exchange eventually came to accept credit cards in payment for goods, the various planning constituencies will eventually overcome their demands for paper products for some applications and accept soft copies. The important point is that ODACSINT must continue to prepare itself for the time—not far off—when intelligence on demand and proliferation of intelligence in cyberspace are the norm.

**CHAPTER OBSERVATIONS**

The Army’s IT architectures are maturing and providing the means for easier, faster transmission of intelligence to the planning communities. The planners have some administrative hurdles to clear before they can fully exploit the speed and flexibility that will soon characterize intelligence on demand. Army intelligence must continue its IT efforts so that it is fully equipped to deliver the goods when the planners have overcome their administrative and cultural obstacles to cyberspace.