ing members of the netizen caste freedom in their information-related activities. The fifth principle - universal service - can be construed as a position designed to help pre-empt any new rifts along class lines, namely, between the 'information-rich' and the 'information-poor'.

The Current Scene in Japan and Some of the Challenges Ahead

Cast against the controversies and developments I have outlined in my remarks to this point, it can be seen that Japan quite simply lags far behind America in terms of either dimension of the modern Information Revolution, as well as in its efforts to address issues of importance in either theoretical or practical terms. In the 1960s, Japan actually led the world in coming up with such concepts as 'informatization' and the 'information society'. It is thus all the more disheartening to see it fall so far behind, especially since the late 1980s.

For now, Japan should devote all its energy to the task of closing this gap. Toward that end, first of all, it is imperative that Japan develop a clear understanding of the implications behind the GII initiative, and in particular, of the insights and strategies behind America's actions in that undertaking. Viewing America as a country bent on imposing its own standards on the rest of the world in a bid to dominate global markets is one interpretation that is probably mistaken. Washington's apparent reluctance to commit itself to international regimes to reign the telecommunications that have existed up to now should be seen not as a manifestation of American 'unilateralism', but rather as an acknowledgment that the dynamics of the Information Revolution are prompting qualitative changes in the very mechanisms for the cultivation of global standards, not to mention the nature of cooperation itself.

Second, Japan must on the above awareness move swiftly to build a national information infrastructure of its own that is open to the world at large. In parallel with that effort, moreover, it should study effective methods of putting its infrastructure to work. Over the longer term, we should seriously contemplate changes in our models of society and language and experiment with educational and administrative strategies that could conceivably pave the way to innovative new breakthroughs in technology.

Third, Japan has to be determined about how it is going to involve itself in efforts to establish the GII. Ultimately, this will demand that it be definitive about its role in the Asia-Pacific, a region destined to be a key global center of growth on into the century ahead. In other words, while the time for these decisions does not as yet appear ripe, Japan will be compelled to more clearly identify its stance relative to America in regional and world affairs. ■

References

[1] *Committee for the Promotion of Advanced Information and Communications Infrastructure (Cabinet Office Affiliate):* Fundamental Policies for the Creation of an Advanced Information-intensive Society, unofficial translation, INFORUM report of February 21, 1995.

[2] *Aizu, I.:* Community Networking in Japan.

[3] *MITI:* Program for Advanced Information Infrastructure.

[4] *Telecommunication Council:* Reforms toward the Intellectually Creative Society of the 21st Century.

[5] *Kumon, S.:* A Japanese Perspective on the Significance of the Information Revolution (http://www.glocom.ac.jp).

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Corporate Handling of IT Applications - Selection Procedures and Controlling Tools

In dealing with the corporate handling of IT applications, selection procedures and subsequent controlling constitute a major challenge for users. The study presented here the present situation regarding these topics in Switzerland and the Principality of Liechtenstein. It aims at contributing to the awareness of the necessity of decision-making. Feedback information to the survey disclosed that theory is expected to provide appropriate and operable instruments to enable greater sophistication in complex decision-making situations.

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The benefit assessment of extensive IT applications is generally difficult and limited to a certain extent. According to a study conducted by the Institute of Technology in Darmstadt/Germany roughly two thirds to three fourths of the benefits generated by CIM implementations are intangible [1].

Furthermore, prospective users must deal with a myriad of new and altered questions during the decision-making process regarding the implementation or modification of such applications. Some of these questions are:

- *Leadership/Management:* New critical success factors, interorganizational and new strategic success positions..?
- *Form of external organization:* Clan, strategic network, enterprise system..?
- *Make or buy:* Customer service, information logistics, commissioning..?
- *Standards/Initiatives:* UN/EDIFACT, STEP, ACIS kernel, etc., CALS (Continuous Acquisition and Life-cycle Support), IMS (Intelligent Manufacturing Systems).. ?
- *Financial topics:* Use of EDI-generated data for consolidated financial statements, cross-border leasing, factoring..?
- *Enhanced functionality:* Computer-based marketing, online recording/use of operational data..?

First of all, the analysis of the survey was to provide data to outline the users' handling and remain subjective to interpretation according to different needs. Hence, no effort was made to comment on the outcome in general terms.

Statistical Returns

About 520 companies, public services and educational establishments in Switzerland and the Principality of Liechtenstein were asked to submit a statement describing their currently applied selection methods and controlling tools concerning IT applications (Tables 1 and 2). From August through December 1994, more than 100 questionnaires were returned, out of which 79 fit the requirements for analysis. The spot check covers all relevant branches of industry except banking which was removed due to modest participation. Companies' sizes were measured by the number of employees, ranging from 1 to 36,000. The analysis of selection methods and controlling tools shows the number of times a specific item was mentioned. Multiple answers were allowed and should be taken into consideration while interpreting the results.

Fifty users specified themselves explicitly as VANS and/or EDI users, either with or without additional CIM-related applications. The following statements

are restricted to this specific group of participants.

Application Trends

The survey's outcome shows two basic types of VANS/EDI users:

- *Industry-oriented users* tend to apply VANS/EDI along with CIM-related applications. More than two thirds of the usersspecifying CAx (CAD,CAM, CAE etc.), shop floor control and CIM applications also use VANS/EDI. In view of initiatives like CALS [2] or IMS [3], this share is expected to soar. Twenty participants belong to this type.
- *Service-oriented users* of VANS/EDI in general do not use CIM-related applications. Thirty participants come into this group.

Selection Procedures

Just 16% of the VANS/EDI adopters proceed without selection methods. None of the participants who returned the questionnaire is using the ecological balance sheet, fuzzy sets or methods of chaos research referred to for selection purposes (Table 1). At a glance, one notices the absence of the transaction cost analysis, an extolled theory for decision-making in this context. Actually, two replies admit applying the initial stages of this theory but they are not part of the spot check. In general, all users who do not dispense with methods or succumb to market pressures apply a mix of methods. Merely one fourth of survey participants restrict this mix exclusively to financial matters.

The participants were also asked to state their main criteria in the evaluation process. Regarding the supplier, the most frequent criteria mentioned are 'a strong partner' and 'reliability'. The product to be chosen is first of all judged by the 'circulation area', 'monetary criteria' and the 'features provided'. The only significant difference between users from the industry and service sector exists in criteria regarding their own institutions. Industry-oriented users rate 'integration ability' (e.g. standards, corporate guidelines) higher, whereas the 'resources' criterion prevails in the service sector.

Properties depending on ...	...purpose			...size (e.g. amount to be invested)	
Methods	concepts	hardware	software	large	small
No methods used	11	8	8	4	12
Choice due to market pressure	4	3	6	5	3
Study of applicability / feasibility	14	7	10	13	3
Value chain analysis (M.E. Porter)	1	-	-	1	-
Technology portfolio	4	2	2	1	1
Effect nets (University of St.Gallen)	2	-	-	1	-
Effect chains / process transition costs	1	-	-	-	1
Methods of industrial and organization psychology	5	2	3	3	1
Present-value model for investment planning: - Cost comparison method	7	12	10	5	7
- Simple profit account	1	2	3	1	2
- Simple yield account (accounting rate of return)	3	3	4	2	4
- Return on investment	7	8	9	11	3
- Simple payback method	4	10	11	9	2
- Net present value	2	2	2	1	-
- Annuity method	3	2	2	2	-
- Internal rate of return	2	3	3	4	1
- Dynamic payback method	1	2	2	2	1
Final-value model for investment planning	1	4	4	5	2
Budgetary planning	8	6	7	9	3
Ratio pyramid (e.g. Du Pont)	2	-	1	2	-
Cross-link philosophy (University of St.Gallen)	4	1	2	3	1
Kepner Tregoe method	3	3	3	2	-
Benefit analysis	13	12	11	6	4
Sensitivity analysis	3	1	2	3	-
Risk analysis	5	1	4	6	-
ABC analysis (e.g. inventory control system)	5	3	4	4	4

Table 1: Selection methods

Controlling

Compared to the selection procedures, subsequent controlling of IT applications is at a very early stage, with only a handful of users applying sophisticated tools. 40% of the participants do not engage in controlling at all. From the tools listed in the questionnaire not a single participant mentioned normal costing on absorbed-cost basis, modified budget cost accounting on absorbed-cost basis and project cost accounting (Table 2). ■

Applications / Controlling tools	VANS	EDI	CIM-Modules	CIM-Concept
No use of tools	11	11	7	8
Historical cost accounting	7	10	2	-
- Direct costing	1	2	1	-
- Analysis of fixed-cost allocation	1	2	1	2
Normal costing on full-cost basis	4	5	7	2
- Fixed budget cost accounting	-	-	1	-
- Modified budget cost accounting	-	1	-	-
Activity-based costing	2	1	1	1
Target costing	2	1	1	1
Product life-cycle costing	2	2	-	-

Table 2: Controlling tools

References

[1] *Schulz, H.:* Wirtschaftlichkeit von CIM-Investitionen, in: io Management Zeitschrift 5/1991, p. 72.

[2] *Chevalier, P.:* CALS et les systèmes d'informations électroniques, Paris 1994.

[3] *U.S. Department of Commerce:* IMS - Intelligent Manufacturing Systems, Final Report of the International Steering Committee adopted at ISC6, Hawaii, 24 - 26 January, 1994.

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