Integrated Information Management -
Get The Connection?

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INTRODUCTION

Integrated Information Management ("IIM") is a concept that has been derived from the sharing of information. Information sharing that is essential to operating a modern business enterprise. Traditionally, software developers have not provided the ability to share information. Standard access methods to find the necessary information typically require the user to utilize different programs and inquiry screens to determine relationships that must be known to serve a particular request.

For example, a customer service representative may need to know expected delivery dates of a selected inventory item for a particular customer. This request would be difficult to accomplish with non-IIM software systems. The time element involved can be a serious hindrance to answering a customer request. The lack of integration with the corresponding quick access may potentially lead to customer problems such as lost orders, irritated customers and generally unacceptable customer service levels.

One important question to ask is why were systems written in the past that are functional for the areas being accessed such as customer order entry, purchase order entry, inventory control, etc., but are not integrated to each other? The answer to this question is fundamental to this dissertation on IIM. Applications were written for a specific task, for a specific purpose or for a particular user or group of users. No thought was given to integration of the various applications within the overall system being used.

Another question to ask is why haven't IIM systems been developed in the past? The MIS staffs of organizations have been viewed as a service department. Their main responsibility was to "take care of the computer system" and handle the computer needs of the end user. Therefore, since little evidence of IIM is seen, it may be because the user has never asked for it or wasn't aware that IIM can be a reality. Unless management permits the MIS department to take an active role in offering solutions to business problems or to give some incentive for offering innovation, IIM systems of the future will never be possible.

A logical reason for lack of IIM may be found by analyzing the history of computer software systems. The history of computer software systems can be demonstrated in three phases, as follows:

PHASE I:

BATCH-ORIENTED PROCESSING:

Batch-oriented processing was used for very specific functions. These were without any on-line, real-time capabilities or any thought of integration. Software system developers were extremely limited due to the hardware and software technology in existence at that time.

PHASE II:

ON-LINE PROCESSING:

Current software systems utilize on-line processing, but still have roots in the design from the batch-oriented processing. Separate systems are written for specific functions and information relationships are only addressed where necessary to run these specific applications. This often results in a narrow focus with built-in design limitations that may make the IIM concept difficult to utilize around these applications.

PHASE III:

INTEGRATED INFORMATION MANAGEMENT:

Analysis of existing IIM based software supports the statement that it provides organizations the ability to use their information resources to their best competitive advantage.

A symptom of the need of IIM is "I'll have to talk to John over in our purchasing department to find out about delivery on that inventory item" or "I'll get back to you later when I find out all the pertinent facts." How many times have we all heard those types of things being said, been put on hold, transferred to another department or told we would be called back with the information we requested? IIM can put a stop to these issues and improve customer service levels immediately. Frustration and lack of responsiveness to user needs have increased over time and will only get worse if IIM is not employed as soon as possible within the company organization.

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The lack of system integration may have been acceptable in the past, but if we are to be competitive in today's marketplace, it is essential that computer solutions employ the new conceptual framework of IIM. IIM will allow us to move forward with our system development and to meet the challenge for integrated information access. We will be able to use the valuable information which is being collected at all levels within the organization to our fullest advantage.

IIM will be made possible only when information management has taken place and the organizational barriers have been removed. When IIM techniques are employed within the organization and the various company departments are sharing information, dramatic changes may occur. Examples of impact areas that can benefit from IIM are customer service, responsiveness to problems, inventory turns and better purchasing.

There are four major areas for discussion in employing IIM within an organization:

I. SOFTWARE:

Software designers must develop systems that integrate the available information within the organization and also be very user friendly. If the newly developed IIM systems are not user friendly then they will not gain the wide acceptance that must prevail if IIM is to be used to its full potential. IIM systems must be developed by experienced, proven system professionals. Systems should be designed in a cooperative effort between management, department heads, individual users and the MIS staff using the following steps:

A. DEFINITION OF REQUIREMENTS:

This is a difficult step as most systems were developed around a particular application. Brainstorming sessions must be held to formulate which kinds of IIM tools can be developed to use company information to the fullest benefit. The end users and department personnel need to discuss their individual needs as well as the company's needs and expectations. Everyone must close their mind to pre-conceived notions of how systems are developed. User input in areas that may not come under their job description must be considered in overall requirements. Management should encourage them to step outside their normal functions because the best definition of need may come from those that do the majority of the daily workflow. Inter-departmental and inter-user relationships should be discussed and documented to assist in

requirement definitions. Company management must be made fully aware of the urgency of the IIM need so they can utilize it to become more competitive in the marketplace.

B. DOCUMENTATION OF REQUIREMENTS:

Formal documentation procedures should be adopted and established. This may include, but is not limited to, write-ups of job descriptions, organizational charts, management/user objectives, narratives, flowcharts, screen layouts and any other information which may assist in the overall system design.

One important aspect to consider is in the area of user and data access security. This should not be taken lightly as once IIM techniques are employed, access to company information becomes easier. Documentation of security requirements, with corresponding user and management approvals, must be obtained before final system specifications are developed.

C. SYSTEM DESIGN:

System design becomes much more complex as more integration of information is required. Structured system design is highly recommended in order that the integrated techniques and inter-relationships of the data can be fully understood by all system and user personnel.

D. PROGRAMMING:

Access and retrieval speed is mandatory to be as fast as possible under certain hardware/software constraints. Special care should be taken toward selection of the programming tools and languages used so speed can be maximized. Programmers and system designers should be constantly searching and/or developing new tools to provide quicker, easier and more user-friendly access to the data within the systems. Structured coding and programming standards are required when IIM systems are to be programmed. This will make program de-bugging and future program maintenance easier and therefore result in better programs that will run in accordance with specifications. On-line help prompts can be incorporated into the programs to assist users in how to operate the software. Screen printing to a selected printer is also helpful since this provides users with a mechanism to print out pertinent information that they do not have to write down. They will be able to highlight information and pass it on to the proper person for follow-up. This should result in quicker follow-up on problems.

E. TESTING AND DEBUGGING:

Various users can alpha and beta test the software programs as they are developed to ensure that they have been programmed according to the specifications and requirements as presented in A) and B) above. This will prevent some of the lack of integrated system design that has occurred in the past. As users start working with IIM programs, they will continue to modify and enhance existing programs. New programs may be developed as they become more familiar with the endless possibilities now available to them. An information revolution may take place as we make great progress in the IIM area.

F. IMPLEMENTATION AND TRAINING:

Realistic time tables should be set for training and implementing the IIM system. Many good project scheduling and management software tools exist out in the market today that can be used in this area. Training should take on a greater emphasis than it has in the past so that users can get increased benefits earlier in the implementation cycle. User manuals should be developed that demonstrate all the features that are available to the user. Full examples should be provided so the user can follow along with his/her own screen for easy assimilation to a particular environment.

II. DATA:

Policies must be developed for data standards so that information is easily transportable from system to system. This can be on a single CPU or may involve a multitude of systems. Data standards also need to be established for non-EDP data as well. The standardization of the data may also encompass using corporate databases to collect and group data for all entities or a single entity. Access may even be required between the home office and remote sites or vice versa. In many companies, various hardware/software environments exist, which require data standards to be enacted so that all the required information can be accessed from anywhere within the organization.

III. PROCEDURES:

Procedures and policies must be developed for integrated system development. These should be adopted companywide aligning integrated system development strategies.

IV. MANAGEMENT SUPPORT:

Full management support is required for success in order that maximum advantage be taken of the company's valuable information resources.

IIM may require some changes in management philosophies. All pertinent information must be related and integrated. This means that inter-departmental barriers must be broken apart and the information systems linked together. The ultimate purpose of IIM is to make available information that has been created by departments or users that specialize in creating and using that data to all users. Management must adopt a policy of integrating data and systems where possible to bring the entire resources of the company together, much like a conductor who integrates the various instruments together in the symphony.

Management will have to allocate funds for IIM projects in order to be able to reap the tremendous benefits available. Management will have to begin to measure the benefits provided and will see astounding increases in user satisfaction, customer service levels and the cooperation between employees. Management must support IIM fully to maximize the benefits that this kind of technology can provide.

CONCLUSION

IIM poses many challenges to management and system professionals that need to be addressed. When the IIM technology is used in "real-life" situations the results are amazing. We have seen and documented significant productivity increases in companies where IIM has been implemented. IIM systems have been developed which work with existing software technology. IIM is not just a vision, but a reality.