INFORMATION MANAGEMENT IN AVIATION INDUSTRY

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Abstraet

The paper examined the implieations of information as a strategic tool for the survival and development of the Aviation Industry (AI). The role of Information System (IS) in information gathering, processing and dissemination as well as strategies for information generation have been highlighted. It concludes that the survival and development of AI is largely a function of how the AI is willing and able to effectively and efficiently utilize the information.at its disposal.

INTRODUCTION

Information is vital and necessary for the survival of any society, establishment, industry and system irrespective of the level of its development. It is required to set and modify the goals and aspirations of a people or society, an establishment and a system. It serves to balance or restructure their operations, obligations, responsibilities, the rights and privileges of people therein and also set their short and long-term plans.

In a typical formal establishment such as the Aviation Industry (AI) or system, information is required to design or modify its general and specific organizational structure, determine its hierarchical levels of leadership, division of labour amongst the workers, rules and regulations governing its operations and inter relationships with other establishments or systems within and outside its environment, etc. Even in a non-formal establishment or system, information is still needed to survive as it would be necessary to know what is happening in the neighbourhood, what should be done to avoid the risk of getting exterminated, subjugated or overshadowed by others, how it can maintain the lead or dominate others, and most importantly, how it can harmoniously exist within its immediate and remote environment.

The Implication of Information to Management

Before the advent and proliferation of Information and Communication Technology (ICT) as a facilitator for information acquisition, storage, retrieval, dissemination and utilization, information was not conceived as a vital tool for managers and administrators in decision-making and planning as it is currently. Information is today increasingly affecting how policy makers and manager plan and decide on staffing, finance, production, services, and strategic development of their establishments. With

and act as a leader and liaison officer within and outside the establishment.

b) **Information worker** where he/she serves as the management/system's spokesman and disseminator of information within and outside the establishment; and

c) **Decision maker/policy maker** where he/she serves as a crisis manager, systems director and planner, and resource allocator.

These important roles are performed better with the establishment of an Information System (IS) for acquisition, storage, retrieval and dissemination of information for easy utilization. By the intended audience, department, unit, section, etc. In simple term, IS can be considered to be a set of defined procedures for collecting, storing, processing and disseminating relevant information necessary to support and enhance the operations, decision making and control of a system or establishment. By and large, a typical IS for AI and indeed for other information dependent organization can be in any of the following function:

1. **Informal Information System (IIS)** when it is basically based on undefined norms of behaviors and attitudes in information provision such as rumour mongering and gossip network among workers or individuals in the establishment.
2. **Formal Information System (FIS)** where information provision is based on accepted and relatively fixed conception and definition of procedures for collecting, storing, processing, disseminating and using relevant data/information
3. **Computer-Based Information System (CBIS)** where with the assistance of computers and other ICT facilities and in conformity with predefined rules, information provision and utilization is facilitated through structured procedures

and operations for acquiring, storing, processing and disseminating it. The CBIS can be in form:

(a) **Executive Support System (ESS)** useful for aggregate data analysis from both internal and external sources. It is usually processed and presented in graphics, simulation or interactive forms for the executive and senior managers of the establishment. It is useful for strategic plans, and projections and implementation.

(b) **Decision-making Support System (DSS)** useful for low-level data analysis. It is processed in interactive and simulation form for professional staff and managers. It is useful for preparing special reports, response to queries and decision analysis.

(c) **Management Information System (MIS)** useful for summary of events, transaction data and high-value added data. It processes and presents routine reports of the day-to-day or periodic activities of the establishment. Its provision of summaries and specialized reports made it more useful to the middle-level managers of an establishment.

(d) **Office Automated System (OAS)** for the processing and storing of office documents and schedules. Information are usually word processed and stored for easy retrieval in form of documents, graphic records, schedules and mails. It is useful for the clerical staff and bench managers.

(e) **Transaction Processing Systems (TPS)** useful for monitoring and recording the establishment's operations and activities. It sorts, lists, merges and updates information on the activities taking place. Its useful to the operation personnel and supervisors due to its capacity to provide detailed reports, lists and summaries of events and transactions. Examples of TPS include:

i. **Marketing System** for sales management, marketing resources and services, sales promotion and pricing. It provides information on sales order, market research, price systems, etc

ii. **Production Systems** for operations schedules, purchasing, inventory control and engineering operations. It provides information useful for material resource allocation, inventory control, quality control, planning systems, etc.

iii. **Financial Systems** for budgeting, billing, cost accounting and general ledger. It provides information on accounts receivable/payable, budgeting and budget control, general ledger and general funds management systems.

iv. **Personnel Systems** for keeping records of personnel, payroll, training and development, fringe benefits, and labour matters. It provides information on the employees' records, payroll, career opportunities, personnel planning, benefits, etc.

Because both public and business oriented outfits such as the AI are usually composed of different levels of administrative structures, specialties and interests which may sometimes be conflicting each other in different perspectives and dimensions, I.S, particularly the CBIS would be required to provide relevant information to these seemingly divergent interest groups in an organization. In effect therefore, there can be as many ISs as there are different interests, specialties and administrative levels/ structures in an establishment. For instance, at:

1. **The Management Control Level System** where there could be such ISs as management Information Systems (MIS) and Office Automated System (OAS) for data and operational analysis of, say, flight scheduling, production, inventory control, annual

budgeting, contract agreements and monitoring, resource allocation and relocation, capital investment and costs control, sales, etc. These systems are basically useful for monitoring, controlling and decision making on administrative functions and activities of an establishment. Thus, while the MIS provides periodic summaries of the activities and transactions useful for monitoring and controlling the levels of operational activities of the establishment, the OAS facilitates the processing, and provision of the relevant information to the appropriate quota within and outside the establishment. Therefore, questions related to the overall and periodic performance and efficiency of the establishment can easily be answered.

2. **Operational Level Systems** where there could be such IS as Transactional Processing Systems (TPS) for keeping track of such routine and elementary activities and transactions of the establishment. They include among others credit decisions, cash and bank deposits, payroll and auditing, accounts payable and receivable, training and development, order processing and tracking, machine control and plant scheduling, material movements and inventory control, staff records keeping, tax and VAT reporting, cash movement control, etc. The TPS basically serves to answer routine questions on the operations of the establishment, the employees' contributions and their welfare, tracking the flow of its financial and non financial transactions and monitoring of its human and material resources contributions irrespective of the level.

3. **Executive/Strategic Management Level Systems** where such ISs as Executive Support System (ESS) and Decision Support Systems (DSS) for the provision of information for developmental, operational and financial plans and forecasting are necessary. The ESS and DSS are basically aimed at supporting non-routine and less

structured decision making based on unclear information requirements to answer conditional questions (such as "whenever," "what of" "if', 'what if' "How can "When shall", etc) or satisfy some conditionality. The ISs tries to focus on strategic issues and long term phenomenon in the organization's internal and external environment that are of vital importance and interest to the executive and senior management. They allow for the matching of the interval and external environment that are of vital importance and interest to the executive and senior management. They allow for the matching of the internal and external environmental changes in the establishment.

The foregoing suggests that there is rarely an omnibus IS that can exactly fit all types of establishments even in standardized routine job such as the payroll. Therefore, different IS may have to be established by different establishments, perhaps, for the same functional areas due largely to their differences in goals and objectives, organizational/managerial structure, interests, specialty, etc.

Information Systems Management Expectations

What is however important to note as regards which type of IS an establishment such as AI should decide to adopt is the fact that:

1. ICT particularly computer is rapidly changing. Thus ISs can easily be technically obsolete shortly after installation. Hence, to reduce costs, the ISs so chosen by the management should stand the test of time before further plans to go for other advanced systems.
2. The value of information generally fades away with time. Thus, there is the need to device quicker ways and means of acquiring timely information for quick processing and use by the management. As obsolete information may only be

useful for historical and statistical analysis, strategic planning and routine management control rather for quick solutions to impromptu accidentals. For instance, information about the defect of planned products and services is more pertinent and useful before the take-off of the exercise.

3. The immediate and remote environment in which an establishment exists is dynamic and so it should be with the establishment in order for it to be relevant. Thus, information systems adopted in an establishment must be dynamic-oriented to accommodate the continued changes of its information requirements and needs.
4. The continued dependence on ICT particularly computer application has stimulated rise in the shortage of skilled and qualified systems managers. Consequently therefore, this gives rise to the maintenance and retention costs of systems personnel. Thus, it is important to establish short and long-term plans for the training, development and retention of systems personnel in the establishment.
5. The value of any information is largely a function of the type of analysis, interpretation, explanation and understanding given to it. Hence, any information acquired, stored, processed and disseminated should be based on specific context so as to ensure proper utilization. In effect therefore, the context within which information is acquired should guide the mode of its analysis and interpretation.
6. The perfection of ISs comes with time after series of trial attempts to cope with the increasing and varied information needs of the establishment it is meant to serve. The management should therefore develop the capacity to bear with the IS's inadequacies particularly at its toothing stage. The systems personnel need to

have the prerequisite skills and know-how to develop the system to full capacity utilization.

7. Not all information acquired for use are really relevant after a given period of time. While the value of some information may be permanent, others might be only transient. Hence, systems managers should have the capacity to synthesize which information should be stored in the system and for how long. This is necessary to avoid overloading of the system's memory store with unnecessary information packages.
8. There is the need for an established system of preventing the IS from all sorts of disaster. For instance, computer hardware and software, data files and other related equipments including the ICT gadgets can easily be destroyed through fire, power failures/fluctuations, radiations, heat, dampness etc. Such disasters can disrupt the normal operations of the systems or even bring it to an entirely standstill position.
9. There is the need for defined method of IS management especially with the evolvement of an ICT or information management policy, particularly as it relates to issues of privacy, security and confidentiality of information contained therein.

There should be defined rules and regulation, or rather policies on:

i. the limits on the information to be stored acquired and disseminated to whom and by whom;
ii. the rights of the individuals to access, review and challenge the information provided;

iii. responsibility for ISs management particularly as it related to information gathering, organization, currency, accuracy, security of the system and compliance with the principles of privacy enshrined in the systems regulations and policies.

There should therefore be adequate provision for systems control measures for the computer hard and software, data security, administrative systems etc.

Conclusion

Attempt has been made to justify the essence of information in the AI and indeed in any type of establishment. The types and roles of IS in the provision of information for the survival of the AI and any establishment has been highlighted. The paper posits that the extent of the AI and indeed of other establishment's survival and development in any environment and circumstances is largely a function of the extent of information available at its disposal for use and how far it is willing and able to utilize the information to its advantage.

References

Alter, Steven and Michael Ginsberg "Managing Uncertainty in MIS implementation" Sloan Management Review Vol. 20(1) 1978.

Earry G.A. and Morton, M.S. "Framework for Management Information Systems Sloan Management Review Vol. 13 (3) 1971.

Mintzberg, Henry. The Nature of Managerial Work, New York: Harper & Row 1973.

Davis, Gordon B. and Olson, Margrethe H. Management Information Systems: Conceptual Foundation, Structure, and Development. 2nd ed. N.Y. McGraw-Hill, 1985.