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# THE IMPACT OF INFORMATION RESOURCES MANAGEMENT UPON ORGANIZATION PERFORMANCE

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**Abstract:**
Information Resources Management (IRM) is a concept that defines information as a major corporate resource and it states that it must be managed by using the same principles used to manage other assets. IRM is a process that links needs for business information to information system solutions. Nevertheless, there is no step-by-step guideline for implementing IRM, and in this paper I'll pinpoint some aspects of how enterprises can use information to empower their people, how a linkage between key data and the corporate strategies can influence organizations to gain or not benefits by managing their information.

*Key words:* ***Information, management, organization performance, performance measurement.***

## Introduction

*"Information is everything…and everywhere. It's a simple idea: If you want people to solve problems in real time, give them real-time information" [1]*

There is an increased interest to find as more precisely the role and purpose of information resources management in the government institutions as well as in private companies. Long time ago information management was assimilated with paper work or records management. From this point of view, the information management purpose was considered a necessary evil that was conducted in the background of organizational life. Within the last twenty years, however, information management has been importantly affected and shaped by innovation in computer and communications technologies. The ongoing revolution in micro-processing; the increasing sophistication, ease-to-use, and availability of packaged software; and the expansion of networks for voice and data communications, all have implications for managers and executives in government. Furthermore, the potential impacts extended beyond the ranks of traditional data processing (DP) managers to "functional" or "program" managers and senior policy executives. Indeed, recent innovations software-those sets of instructions that "tell" the computer what to do – are distinguished from past innovations in that they permit the extension of computing power into the hands of line personnel directly responsible for executing the department's or agency's mission.

## 1. Evolution in Information Resource Management (IRM)

Information Resource Management (IRM) is a matter of the present. While the notion has been around for more than 10 years, recent developments in the field of

information processing have shed a new, more imperative and viable light on the concept and the philosophy behind it. Interpreted "mot a mot", IRM implies that information should be assimilated as a valuable entity, in non-influenced buy the technology that manipulates it. Due to that fact, it is acknowledged as a major organizational resource in much the same way as human resources, technology, infrastructure, and capital. Therefore, information should receive a proper management approach. Two factors are responsible for the increasing of the role of IRM. The concept of knowledge work appeared in the 1960's followed by the notion of the "post-industrial society" in the early 1970's.

The first attempt to place information and knowledge in an economic context of importance to business and administration, and established the theory of information economy was made by the Princeton economist Fritz Machlup in 1962. But Adrian McDonough – Micro economist - Economics & Business Management is the person that understands the primary role of information for the economic performance and said in 1963: "Treat information as a resource". In 1973, Marc Uri Porat – Economist - U.S. Department of Commerce, defined the U.S. information economy and measured the U.S. information economy. Information economics contributed the argument for treating information as a resource. These characterizations were popularly described in the 1970's as "the information age" and the "information economy" but Information Resources were not yet managed. Such phrases acknowledge that information processing has become a fundamental component of industrialized nations. Since information handling has become such an important component of economies, it is understandable that more attention is paid to it, so from here result the need of a theoretical and legal framework related on Information Resources Management

**1. 1. Driving the need for managing information**

*How fast the volume of information is growing?*

This year's study titled "The digital Universe of Opportunities: Rich data and the Increasing Value of the Internet Things" with study and analysis by IDC (International Data Corporation), reveals how the growth of wireless technologies; smart devices and software-defined business are playing a essential role in blasting the volume of world's data.

As much as the physical universe is large, the digital universe is also huge– by 2020 will contain almost as many digital bits as there are stars in the universe. It is doubling in amount every two years, and by 2020 the digital universe – the information we create and copy annually – will reach 44 zettabytes, or 44 trillion gigabytes.

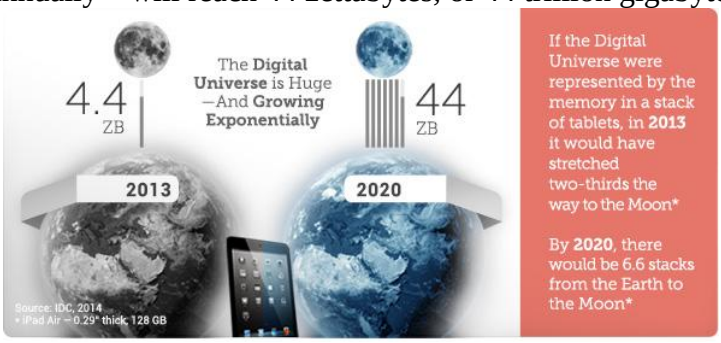


Fig.1 Digital universe

For Perspective:

- The amount of information in the digital universe would fill a stack of iPad Air tablets reaching 2/3 of the way to the moon (157,674 miles/253,704 kilometers). By 2020, there will be 6.6 stacks.
- Today, the average household creates enough data to fill 65 iPhones (32 GB) per year. In 2020, this will grow to 318 iPhones.
- Today, if a byte of data were a gallon of water, in only 10 seconds there would be enough data to fill an average house. In 2020, it will only take 2 seconds.[2]

This phenomenon will present radical new ways of interacting with customers, streamlining business cycles, and reducing operational costs, stimulating trillions of dollars in opportunity for businesses. Conversely, it presents significant challenges as businesses look manage, store and protect the sheer volume and diversity of this data.

*Do we finally mange to adapt at this fast grow?*

A group of authors generally from the information sciences take a holistic view on information management integrating more or less all the aspects discussed above. Though there is not a standard term, these approaches are related to as information resources management in the following. According to Bergeron (1996), IRM is deeply rooted in the following assumptions: identification of information as a resource, an integrative management perspective, management of the information life cycle, a connection with strategic planning.

The surroundings information resources give worldwide information about a variety of topics. These are frequently considered to be basic data sources, meaning that they provide essential facts and knowledge that can be used as a foundation for one's research. A few seconds spent in analyzing information resources can save a tremendous amount of time and money also when searching in databases and more subject-specific resources.

Information Technology and Communications has begun to be incorporated into the environment and objects in current use, and its use is so "friendly" in relation to the man, so that it can no longer realize that it uses. A driver at the wheel will be able machine misinterpreted and request information on condition of the road and the weather patterns, receiving immediately the answer. He will act so without may realize that in this way he uses recognition systems and synthesis of voice, a mobile communications system connected via the Internet, a global positioning system, etc.

The Internet, whose development is done using a logarithmic ration, made to be born a new world: - CYBERSPACE - which can be accessed, within certain limits, at any time and by anyone who has a computer connected to a network. So cyberspace extends from the simple PC, possibly also comes with a digital camera to take pictures, up to the huge computers of national systems: banking, defense, energy, transport auto, naval or air, etc. These enormous sources of information, which could be accessed from any PC interconnected in a system, made available to the interested parties a volume of information so varied and large, and that the practical use of information accessed cannot be even approximated and, as far as possible, be valued.

In these circumstances when such an enormous wealth can be used, potentially bearing, a participant in a system, it is, of course, understood that outside users are used to it, so fond of colder illegal or criminal activities, but especially secret services of espionage, lead a struggle 24 of 24 hours, in order to retrieve information of public utility and especially to penetrate codes and access passwords secret report includes the data banks of giants operators or military.

### 1.2 Information Management in organizations: origins and destinations

The organizational factors play a major role in what type of information is to be processed and communicated to the decision-makers. These factors include nature of the organisation, category of the organisation, structure of the organisation, size of the organisation and the management style followed in the organisation.

Information is the primary tool that will help the management, its products and services in the competitive environment. It should be clearly understood that the information technology and quality information are not the goals but merely the competitive weapons that support the organisations in their activities. Without quality information, organisations are operating in a world of uncertainty, and quality information could be produced by taking a number of steps and making sure that the information generated and presented to the decision-makers is accurate, timely and relevant.[3]

Along with the other terms which are used to communicate the goals of IRM is the term information management. Even if it not used as frequently in information management as in records management, it reveals the fact that all information needs to be properly managed. In this regard, better attention has been given to strategic planning for information systems. Information is perceived not only as a resource but as a means throughout an organization can gain strategic advantage in a specific domain. Like a part-cover with database management, a wide view of corporate data is described by the terms information architecture and information engineering. The first represents the enterprise's information and the last one is a technique for implementing the resulting data model.

## 2. The impact of IRM upon organization performance

*"Between theory and practice lies performance."- Michael West*

According to Wiktionary.org, one definition for "performance" is the act of performing; carrying into execution or action; execution; achievement; accomplishment; representation by action; as, the performance of an undertaking of a duty. [4]

In this regard, just setting out an organization objective will not automatically lead to strategy execution. A method to assess whether or not you are actually achieving the objectives and advancing towards execution is what's needed in this case, and that is what we can call to be the performance measure. Performance measures it's defined as standards used to evaluate and communicate performance against expected results.

Performance management consists of a set of management and analytic processes, supported by technology, that enable organizations to define strategic goals and then measure and manage performance against those goals. Core organization performance management processes include financial planning, operational planning, organization modeling, consolidation and reporting, analysis, and monitoring of key performance indicators linked to the organization strategy. [5]

The Wiktionary.org definition for "performance" that is most useful in defining organizational performance, is the definition given for "performance" in the context of computer science: *the amount of useful work accomplished by a computer system compared to the time and resources used. "Better performance"means more work accomplished in shorter time and/or using less resources.* It's an appropriate analogy to compare a computer system with an organization; both are systems. The computer system is really a system of systems: hardware systems, firmware systems, software systems (codified human thought), internal interfaces, and interfaces to other systems. The modern organization is also a system of systems: people (social) systems, technology systems,

and process systems, with internal interfaces between people, technology, and processes, and interfaces to other organizations.

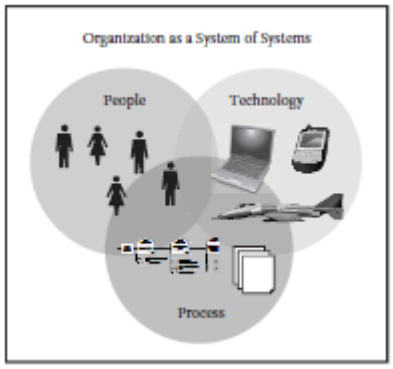


Fig. 2 An organization as a system of systems

If we accept this premise as logical and sound, there are many ways for an organization to improve its performance in most organization vectors, but all of those paths to improvement can be related to one of three general categories:

(1) improve the workers;

(2) improve process, or

(3) improve technology.

Albert Einstein states in this regard *„If I had an hour to save the world, I would spend 59 minutes defining the problem…and one minute finding solutions."* The key to the success of any performance improvement initiative is understanding what to improve and why. Business performance management involves consolidation of data from various sources, querying, and analysis of the data, and putting the results into practice. [5]

**"Business intelligence (BI)** is an umbrella term that includes the applications, infrastructure, tools, and best practices that enable access to and analysis of information to improve and optimize decisions and performance." [6]

**"Enterprise Information Management (EIM)** is an integrative discipline for structuring, describing and governing information assets across organizational and technological boundaries to improve efficiency, promote transparency and enable business insight." [6]

My point of view it's a little less complicated based on what I've learned on MRI course:

**Business Intelligence (BI)** empowers the *right people* to receive the *right information*, at *the right time*, allowing them to make *the right business decisions*.

**Enterprise Information Management (EIM)** provides the stone of foundation for the business to operate like a real "*intelligent enterprise*".

Enterprise information Management (including Data Quality Management and Data Governance) is the single most important prerequisite to a Business Intelligence implementation.

"Without the proper data, or with too little quality data, any BI implementation will fail. Before implementation it is a good idea to do data profiling; this analysis will be able to describe the "content, consistency and structure" [7]

**2.1. Civil organizations perspective of IRM**

Information management approach cannot be done without an analysis of digital technologies involved in this complex and difficult process of digital society. I started from the premise that the development of digital played and plays a key role in affirming a new model of the information management, centered on an increase of unprecedented access to information and on a nation-wide participation of citizens in the communication of the public space. As a result, institutional systems - at national, regional and global -

have been the subject of important changes in the field of technology, changes which have developed new models of interaction with its own users.

Information Management has become the starting point of an unprecedented technological development, which has led to an increase in the quality information and to better cooperation with users, but has also become a place experimentally, in which models and innovative instruments have tried and are trying to associate in experiences of participation and inclusion. It appears that the technology is not, here, a simple factor added, but a condition of qualified private and changing process of public awareness.

According to a Gartner research, Business Intelligence continues to be the top priorities for the CIOs across the globe [8]:

| CIO technologies | Ranking of technologies CIOs selected as one of their top 3 priorities in 2012 | | | | |
|---|---|---|---|---|---|
| **Ranking** | ***2012*** | **2011** | **2010** | **2009** | **2008** |
| Analytics and business intelligence | 1 | 5 | 5 | 1 | 1 |
| Mobile technologies | 2 | 3 | 6 | 12 | 12 |
| Cloud computing (SaaS, IaaS, PaaS) | 3 | 1 | 2 | 16 | * |
| Collaboration technologies (workflow) | 4 | 8 | 11 | 5 | 8 |
| Virtualization | 5 | 2 | 1 | 3 | 3 |
| Legacy modernization | 6 | 7 | 15 | 4 | 4 |
| IT management | 7 | 4 | 10 | * | * |
| Customer relationship management | 8 | 18 | * | * | * |
| ERP applications | 9 | 13 | 14 | 2 | 2 |
| Security | 10 | 12 | 9 | 8 | 5 |
| Social media/Web 2.0 | 11 | 10 | 3 | 15 | 15 |

*Not an option that year

Fig.3 Top CIO's priorities

**70%** of companies employ metrics that lack statistical validity and reliability[9], While **95%** of companies forecast cash flows, only **14%** of cash forecasts are accurate[10], so they seams to look for the wrong information.

According to KPMG International, the execution of business strategy is often hampered by a lack of reliable information [10]:

- Fewer than 10 percent of organizations have successfully used BI to enhance their organizational and technological infrastructures.
- More than 50 percent of business intelligence projects fail to deliver the expected benefit.
- Two thirds of executives feel that the quality of and timely access to data is poor and inconsistent.
- Seven out of ten executives do not get the right information to make business decisions.

Another issue that the organizations encounter is to ensure the accuracy of the information reported form a business intelligence system. Integrating information from across companies while keeping the quality of data intact "from record to report" has revealed a range of problems not previously revealed.

The executives are now focused on making their BI solutions more reliable by through an information management agenda.

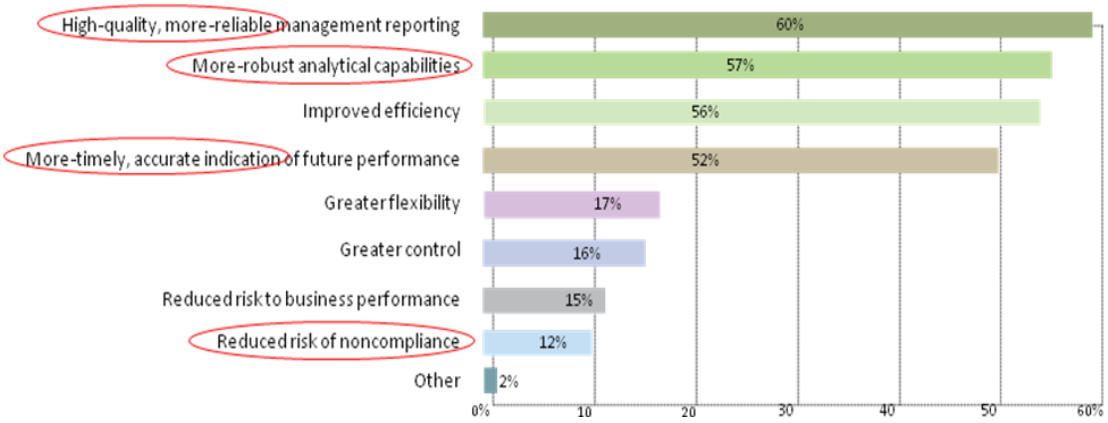


Fig.4 Area of prioritized spend [11]

Organisations are using an "information agenda" to plan for the future:

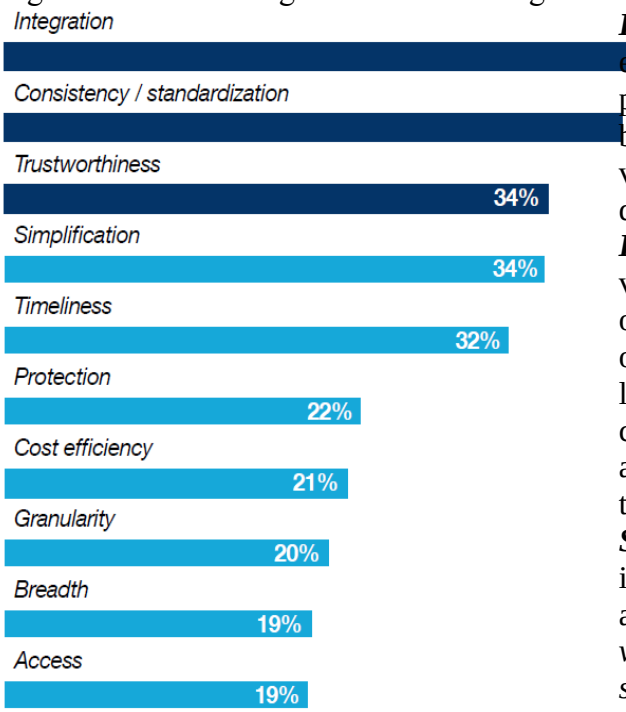


Fig.5 Highest data priorities for Organizations [12]

***Information Integration:*** Managing data effectively and being able to rely on its precision is now even more decisive to businesses due to the fact that the sheer volume and types of data an organization deal with has grown enormously.

***Information Governance****:* To create truly values via business intelligence, organizations must clearly state who owns, uses, and produce information legally. Such rights of ownership and control must contribute to the achievement of precise and consistent and to permit fair comparison of performance.

***Simplification*** is a one of the most important component of the information agenda. *"Complexity should not be viewed as a burden to be avoided; it should be seen as a catalyst and an accelerator to create innovation and new ways of delivering value" [13]*

There are many benefits to the business at the surface; however a sustainable and defined infrastructure and governance framework is required to support the consistent delivery of effective Business Intelligence and Performance Management information.

**Valued Business Information:**

- Dashboards, monitoring, insight
- KPIs, scorecards
- Real time reporting

**Supporting Framework**

- Data Governance
- Data Quality
- Information Integration
- Reporting and Data Management Platforms
- Infrastructure – Database, Security, ETL…

All most all executives within your organization are affected by the quality of your organizational data. For industries that process huge amounts of data on a daily basis, Data Quality can make or break an organization. Some of the key information management challenges faced by organizations are:

**CEO -** receive a multitude of reports with conflicting information so we waste time debating which measures are correct instead of making decisions;
*Root Cause: Data Quality, Data Standardization and Master Data Management.*
**CFO -** can't get the information needed quickly enough to react to the events and changes in the market conditions;
*Root Cause: Data Governance Framework & Organisation Structure, Data Ownership and Stewardship and Data Flow Analysis.*
**CIO -** It is too difficult to obtain all the information they need to make better decisions;
*Root Cause: Data Classification, Data Flow Analysis, Data Mapping and Data Modelling.*
**CxO -** don't have enough confidence in some of their information to make critical decisions
*Root Cause: Data Quality Management and Enterprise Information Strategy.*
**Board & Management –** running their business by "gut feel" rather than facts.
*Root Cause: Data Quality Management, Information Integration and Distribution.*
**Associates -** found that majority of their analyst's time is spent gathering data instead of analyzing and the information to create insights.
*Root Cause: Data Quality and Data Ownership/Stewardship.*
**Customers & Suppliers –** can feel that your organization does not understand the full breadth of the relationship your customers and suppliers have with you.
*Root Cause: Master Data Management, Data Flow Analysis, Information Lifecycle Management and Enterprise Information Strategy.*

Why is information resource management so important for organizations?

Many organisations fail to effectively manage their data, resulting in greater risks to the business and missed opportunities for commercial and competitive advantage.

Effective and innovative data governance and data quality management can help organizations to reduce the risks and realise the true potential of organisation's information:

- **Improved customer profitability** and product coverage through single customer view and product insights.
- **Reduce risk** (financial and reputational) through improved data quality, control and security.
- **Better informed planning** based on accurate operational and forecast data
- Enhanced **anti-fraud measures** through linking and forensic analysis of structured and unstructured data.
- Auditable **regulatory compliance** and repeatable decisions on large data-intensive.
- **Early risk warning systems** to continuously monitor and improve operational efficiencies and profitability.
- Technology-enabled-solutions that are tailored to your needs and enables you to **focus on the most relevant information.**

### 2.2. IRM influence upon a military organization

The level of ambition of the NATO Alliance and of the EU Member States makes it a direct environmental requirement for operational dynamics, with a decisive impact upon the concepts of command and control at strategic and operative level. Technological developments in the field of communications and information technology have caused the emergence of modern concepts made planning focused and aimed at, more than ever, the

new approaches, corporate and comprehensive. The modern organizations feel a compulsive need for "information, at the right time, in the right place and in a form more appropriate".

Organizations today face daily challenges in efficiently managing an increasing amount of information and knowledge. Effective management of this information and knowledge can help to increase commanders' and military personnel's situational awareness, enabling them to make better decisions with a greater understanding of a particular context.

Recent experiences, as well as theoretical approaches in the last few years have demonstrated that efficient management of information resources plays an essential role in increasing organizational performance. This finding lead, logically, to the conclusion that the information and correct management can and must contribute to the development and effective organizations in general and, in particular, specific structures of the national defense system.

In general, the purpose of the management activity consists in providing information with maximum efficiency and accuracy of the information and data required masters, State major and all factors with powers of decision, for a better knowledge of economics and efficiency of carrying out tasks assigned to their own units and those in current activities carried out in time of peace and war. In fact, efficient and effective management of information is a critical factor in obtaining success in all of the areas of activity of Romanian army.

By applying the principles and methods of management information is aimed at:

- ensure to obtain *superiority of environmental information* through the use of shared network for the collection, processing and dissemination of uninterrupted streaming of information and/or the prohibition same skill sets his opponent;
- ensure *efficient use of resources* during the performance information on missions;
- ensure *identification and preservation information* with permanent value.

By means of the management structure of specialized information, as well as the communications and information technology has acted and is acting for carrying out the following objectives:

- carrying-out of a unified information system, which will permit the integration and correct interpretation of data that is used in all of the areas of activity in Romania's army;
- establishment of flows and circuits optimal information, as well as elimination duplication in data collection, compilation, storage, distribution and processing of the data and information;
- ensure the quality characteristics of information processed and disseminated;
- ensure the aggregated data required the leaders of the army to merits decisions;
- Simplification, reducing the number and the volume information by formalize and typing them, for the purpose of diminishing time required bodies and administrative activities for the routine and increase of the activities of design, coordination, command and control;
- Develop IT systems performance and premises for generalization automatic data processing in the main areas of activity of the army.

In this respect, in the past few years, efforts to implement an effective management of resources, information laid down in a pragmatic way, on the basis of the resources available to them, they have been concentrated on:

- update and the harmonization of legislative framework, which the present shortcomings as regards dealing with information in electronic form on all their life cycle;
- Implementation of the measures and procedures "low-cost" on the migration of correspondence in electronic environment, which have had the effect:
  - a significant reduction in the movement of documents in paper format on the inside and between structures;
  - shorten times of movement of information by ensuring access at the same time, multiple users to documents;
  - elimination of activities of a binder and lightening the enumeration of documents, after their archival storage immediately after the scan;
  - easy access to information and to the increase in collaborative character in working with documents;
  - reduction of costs resulting from the multiplication of paper documents;
  - waiver of use in excess of the solutions fax;
- create premises for the implementation of future modern systems of:
  - Management of resources inform-governance;
  - Management of knowledge with collaborative tools.

The top of the political ladder was the appearance, in July this year, doctrine information management within the Romanian army, which introduces new concepts and principles of the decree for the organization and planning the process of the actions for achieving the ambitions information management in modern military environment and which incorporates the best practices which have been validated in contemporary realities conditions within NATO, as well as in some of allied forces.

Further more, this doctrine introduces functional responsibilities and powers to specialists, identified as "managers of information", "managers of electronic records" and reaches a target toward which tended natural for many years, namely, formalized concept of strategic director for the management of information resources - CIO (Chief Information Officer), whose importance has proved to be the ever-increasing, as we have been witnessing an increase of the role of which the information and the means of information technology more effectively in decision-making, for the purpose of meeting the requirements imposed by the war based on the network, and effects-based operations, as well as for the provision of information in accordance with strategic objectives and vision.

Comprehensive approach and discrimination effects depend on the analysis and understanding of complex situations. Work collaboratively, based on sharing information and knowledge in "near real time", provides risk assessment and decision-making, at a higher level. Also, quick access to information allows you to zoom in cycle-tempo decision-making process.

## 3.Tendencies in Information Resource Management.

I've started this paper with a forward word – "information is everything…and everywhere" – I'll complete it with another true "information is power". In that regard I think that the future of IRM is directly influenced by evolution of information technologies facing nowadays economic global issues challenges.

The future success of IRM will increasingly depend upon an organization's ability to shift its management focus from the information professionals to end users. The objective will be to achieve the benefits of end user computing without losing data consistency and integrity that information managers have worked so hard to establish.

The information processing domain of the future will be a distributed one, in which the technology, the data and operational procedures will, to some degree, be under the control of end users. Results of a survey of the management domain of IRM bear this out.

## Conclusion

The achievement of IRM represents considerable challenges to management, education, and the individual information disciplines. Nevertheless, the environment of the future demands the perspective that IRM provides. Until now, the proponents of IRM had to sell the concept on its logical merits. The increase in end user computing, however, is creating grass roots pressure for change. The traditional "fire fighting" mode of information management has no choice but to give way to a framework based upon comprehensive planning and effective feedback. The disciplinary focus on single technologies has led to information gaps, redundancies and the failure to satisfy the user community. An interdisciplinary perspective no longer must be argued from a theoretical viewpoint.

The integration of technologies requires a similar perspective. If evolutionary development is accepted as an element of IRM then the efforts of the past decade can be viewed as the conceptual phase. The upcoming decade can then be seen as the implementation phase.

Today, IR planning and implementation are receiving immense attention in both civilian and military organizations alike, because they touch almost everyone's lives. IT projects are managed for business, financial, academia, government, military and even non-profit organizations.

In my opinion there are five most significant issues for the success of IRM:

1. *Measuring productivity*. Better measures are needed in order for IRM proponents to demonstrate real benefits because the traditional measures are not appropriate in an end user context where the goal is the improvement of productivity without hard work involved.
2. *Determining the appropriate mix of control;coordination, and decentralization.* A equilibrium must be targeted between worker(individual) control of information processing and a level of centralization needed to achieve the goals of IRM wich should be aligned to the organization goal. Control activity to intervene only in establishing and enforcing hardware and software standards and data quality assurance.
3. *Accountability.* Increased user accountability should come with increased user control. This is, in fact, one medium for quality assurance in cases where an end user downloads data from the corporate central processing unit to a personal device for unfair activities.
4. *Providing appropriate access.* The huge amount of resources available for information access is both a benefit and a potential risk. The- capability to present information in various shape (e.g., graphic vs. textual) and the alternate technologies in existence for doing so (e.g., electronic vs. video) requires that criteria for assessing the tradeoffs be established.
5. *New management roles.* Due to the fact that end users are becoming more implicated in information handling tasks traditionally assigned to information experts, they will be more and more responsible for moving out the objectives of IRM at the operational level. The information manager must therefore place increasing emphasis on user education and support.

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