



*The 9<sup>th</sup> International Scientific Conference*  
**“DEFENSE RESOURCES MANAGEMENT  
IN THE 21<sup>st</sup> CENTURY”**  
**Braşov, November 14<sup>th</sup> 2014**



## **THE STRATEGIC USAGE OF INFORMATION RESOURCES**

**Viorel-Adrian BURNICHI**

Rou.A.F./ 86<sup>th</sup> Air Base BORCEA  
Romania

### **Abstract**

There is no doubt that we are now living in an informational era. Every domain of our daily life is full of information, and the tendency is to overwhelming us. In such an environment an organization facing with a real challenge when it comes about using information. Moreover, it is not the main issue but how the information resources may helps to improve processes, and build a conscious business strategy. That is the main reason of present work: to emphasize the role of the information resources within organization strategy, and how these resources may be used, for achieving a strategic advantage or goal. Therefore, in the first part, the paper presents the concepts of information resources, organization strategy, and after that draw the link between them. The conclusion outlines the importance of those resources and a briefly consideration regarding military system.

*Key words: information resources, organization strategy, management, business strategy.*

### **1. Introduction**

Ever since the man becomes aware of himself, he was trying to understand the surrounding world, the various phenomena, even to understand his own existence. Curiosity is one of the characteristics of human nature. But this curiosity is nothing else than gathering information.

Once with the societal evolution, the organizations becomes lager and more complex with continuously need of information, so the scouts were used an later on the spies for collect it. But that is also only about gathering information.

Later on, since 19<sup>th</sup> century new tools were invented, phone and calculator, and the things were changed. In the early age, those tools were separated representing different functions, communication and automation. After a few years, those fused in a more complex tool- computer, capable of both functions and even more.

Even from the beginning, those start to be used in the business environment. The earlier age was a rush toward information technology development, often motivated by *data processing*. It was characterized by automating routine operations within organizations.

In the 1970s, things were changed and a new term arises within companies: *management information system*. Therefore, new types of applications needed to be developed to improve access of decision-makers to useful and timely information. But was very difficult because of the organizations structure, which were highly centralized.

Starting from the late 1980s, personal computers appear, with graphic interface, operating systems and many other improvements allowing the users to be more proactive in their job.

## ***THE STRATEGIC USAGE OF INFORMATION RESOURCES***

From now on, the next steps were very fast, and new concepts arise such as *data warehouse*, *decision support*, *information resources*, and so on.

In the next figure it can be seen the evolution of information resources.

	<b>Era I 1960s</b>	<b>Era II 1970s</b>	<b>Era III 1980s</b>	<b>Era IV 1990s</b>	<b>Era V 2000+</b>	<b>Era VI 2100+</b>
<b>Primary role of information technology</b>	Efficiency  Automate existing paper-based processes	Effectiveness  Solve problems and create opportunities	Strategic  Increase individual and group effectiveness	Strategic  Transform industry/organization	Value creation  Create collaborative partnerships	Value creation  Community and social business
<b>Justify expenditures</b>	ROI	Increasing productivity and better decision quality	Competitive position	Competitive position	Adding value	Creating Relationships
<b>Target of systems</b>	Organization	Organization  /  group	Individual manager  /  group	Business processes ecosystem	Customer  /  Supplier ecosystem	Customer  /  Employee supplier ecosystem

**Table 1. Evolution of Information Resources [5]**

As it can be seen in the table, from 1990s, information technology is part of business processes and there is something more: the word “strategic”. Further on, will see the role of Information Resources in building a strategy of an organization, but first we have to understand what Information Resources means.

### **2. Information versus Information Technology**

**Information**, for most of the people, is related to computer, in a strong mathematical perspective, which cutaway it’s semantic context. Also, many writings about information resources, use **information** and **information technology** as interchangeably notions. For this reason, a distinction should be made:

**Information** represents data plus a meaningful context.

**Information technology** is consisting of nonhuman resources used for processing, storage and communication of information that are organized into a system able to perform a set of tasks. Information technology and information should be assumed as two different entities having different characteristics. For that reason, it is understandable the differences when it comes about their capabilities for creating competitive advantage. Every day experience shows that decision-making processes are more focused on **information technology** instead of **information**. The main reason for this is that technology is more tangible and it has to be in place before information could be produced.

## ***THE STRATEGIC USAGE OF INFORMATION RESOURCES***

In fact, the reality shows that, in many situations, valuable information could have more potential than the technology. A more accurate difference could be made if analyzing the following features:

*Visibility:* Based on hardware components, technology is more visible than information, which is more abstract thing, consisting of symbols, sounds, pictures, or only as a cognitive representation. That is why, for people, is easier to figure out what technology is comparing to information, which is more difficult to understand.

*Functionality:* Since storage, processing or communications are the main **information technology** features, **information** could not be defined in such a way, at all; instead of this, it can be used for different purposes.

*Potential for Evaluation:* Because of its hardware defining components, **information technology** can be evaluated as cost, capacity, speed, etc. Also, related to “processing”, information technology can provide “value-adding” on the raw material. On the other hand, **information** could not be evaluated in this way, but it can influence the human thinking process, in different ways and forms.

Speaking of strategic usage of those resources is interesting to see the differences in creating competitive advantage.

A plenty of planning frameworks was already written for identifying opportunities mattering needs of storage, communication or processing, so is very easy to apply in the case of **information technology**.

To plan information usage for competitive advantage is quite difficult because of two aspects:

- Different people value information in different ways. So is mandatory to recognize the type and content of information that concern or is valuable for stakeholders and organization, select, and provide it to them. In other terms, information value is related to user's needs.
- Also, information has two sides, like a coin. In a conscious way can be a manipulative tool, but also, it can have a self-delusion effect. That is why, for an effective usage of information as strategic resource, is recommended to pay attention of the characteristics of information, at least related to credibility.

In the end of this chapter, we have to realize that **Information Resources** is consisting from both of those terms, and even more. In other words, the right definition is that “*Information Resources - the available data, technology, people and processes within an organization to be used by the manager to perform business processes and tasks*” [5].

### **3. Organization strategy**

**What is an organization strategy?** As it is found in many works is “*an expression of how an organization needs to evolve over time to meet its objectives along with a detailed assessment of what needs to be done*”[3]. So, it's obviously a comparison between how is the organization at the present time and how needs to be. A sum of differences will be noticed, and requirements rise for achieving the goal.

What is strategy good for? Why is needed, and how can be conceived?

The organization, as known, should have a reason to exist, and profit is often the main reason. Therefore, everyone thinks, bigger the profit better for company. However, profit can be gained by increasing the efficiency. On the other hand, the organization lives into an environment, is in contact with many other organizations, more than this, is in a continuously competition. That means it should be efficient and competitive.

## ***THE STRATEGIC USAGE OF INFORMATION RESOURCES***

In addition, one of the more important reason that make possible a downfall strategy is that the decision-makers don't have a certain answer for vital questions and choices like: "Should we diversify our business? Should we expand globally? Is bigger really better? How do we achieve our growth targets? How do we compete against new aggressive competitors?"[1].

Going forward, we will see the main choices that should take into consideration when speaking about organization strategy.

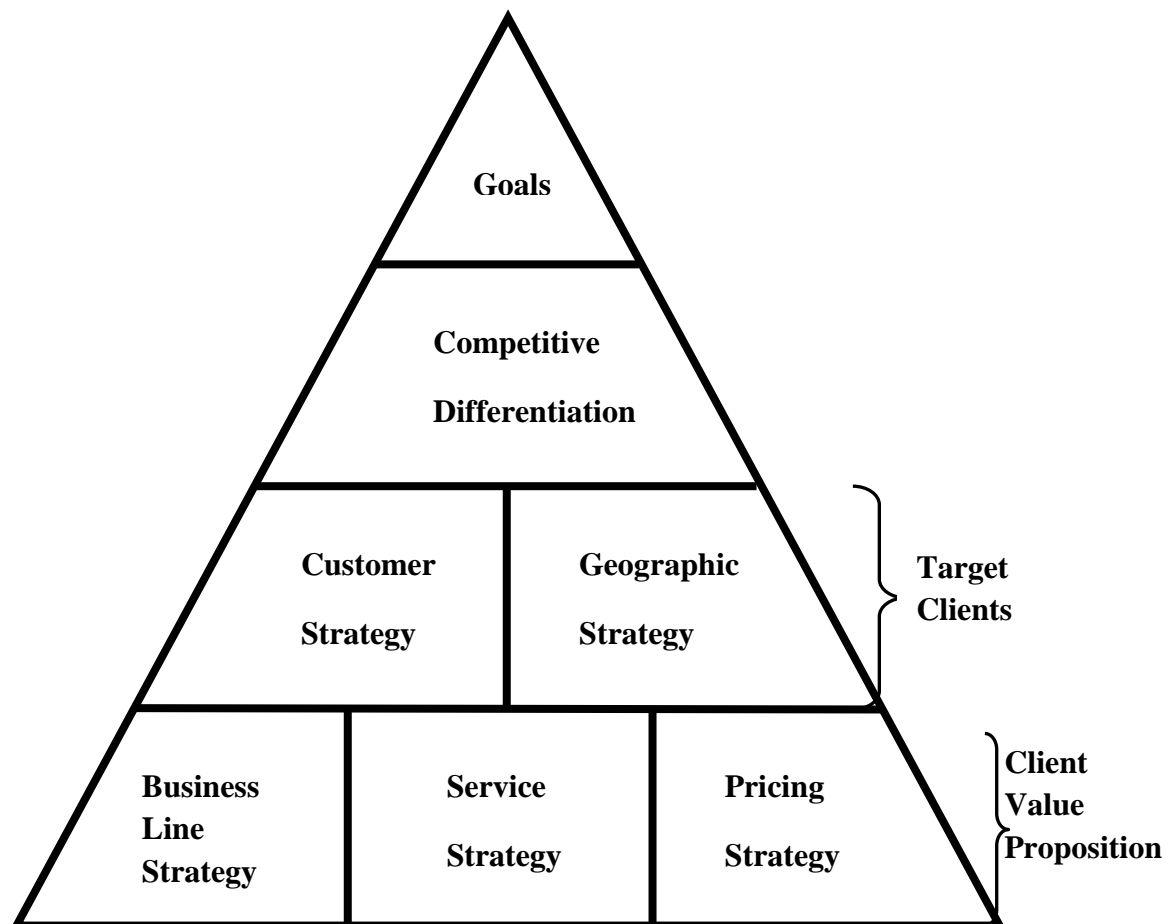


Fig. 2 Elements of strategy [1]

A company's **goals** must reflect its strategy and outline the main circumstances, which deeply influence its future. Often called, as **level of ambition**, represents a target-for point of organization to be, whatever the dimension is.

**Competitive differentiation** means winning in a competitive environment and, therefore, the business must serve customers needs better than competitors.

**Customer strategy** is related to a market channel, to a certain group of clients, named **target clients**, with specific common characteristics: age, sex, job, geographic position, education, etc.

**Geographic strategy** means the area of interest suitable for the company to gain the competitive advantage, how much the business can be extended on horizontal scale, and how active could it be on a certain location, related also to the target clients.

The bottom of pyramid, **client value proposition**, is, as the name says, the true value of the product, but not only. In present days, **service**, is also a very important feature of the product and it is seen more like a part of it, like an all-inclusive service.

## ***THE STRATEGIC USAGE OF INFORMATION RESOURCES***

Beside this, **business line strategy** represents the opportunity to make alliances with other companies for cover all the aspects related to the product.

Nevertheless, even if the strategy is already defined, and everything looks perfect, there is a sum of factors that could influence the further steps.

The most important risk is **obsolescence of strategy**. The environment changing rapidly in our days, so you may find that yesterday's strategy is no longer available for today, and even more, is not able to respond for tomorrow's questions. This is the reason to have also, a short-term strategy that can be update in accordance with new pop up circumstances.

Another most common reason in fall down strategy is human inertness means the people have tendency to stay on to the comfort of older practices, instead of get into an unknown territory. Other tendency, when speak about higher position, is the people want to keep their position, their income, even if the company is almost about to collapse. In addition, in many companies, the organization has to come before the strategy. Therefor, changes when it comes about people is hard to implement, and if happened mostly not done well or just partially with no significant results.

**Strategic drift** is also a very important dimension and appears because the professionals have their own perception about business. In bigger words, it can occur if the components of organization are not proper aligned with the organization strategy.

### **4. The strategic usage of information resources**

Even for those who do not understand the specific terms discussed before, they have to realize that in our present time everything happens faster than a few years ago. Which is the reason for that? The speed of information flow: communication between people became easier due to technological evolution, and even more, there is a plenty of channels to relay on when information about certain thing or activity is needed.

Speaking about an organization, the things are almost the same.

But, first let's take a look, from sky level, upon an organization. As we can see the business strategy is on very top of all, and represents the mission, the goal.

**Organization strategy** consists in its projected form, the human resources policy for achieving it, the policy of business processes, and so on.

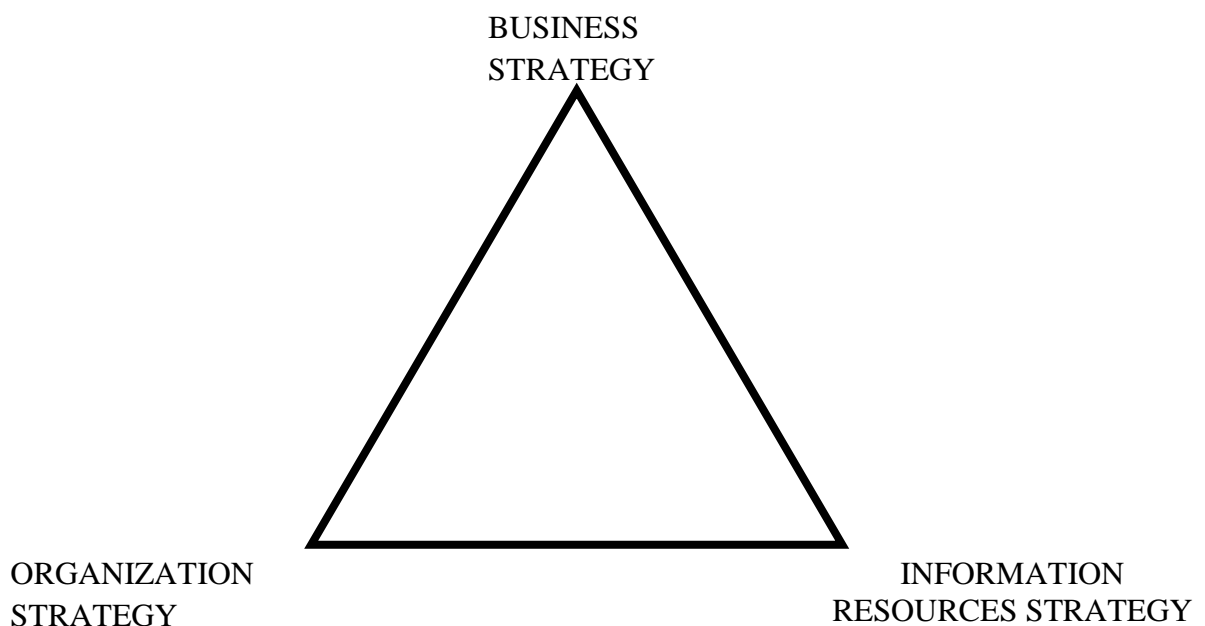


Fig. 2 Strategy's triangle [5]

## THE STRATEGIC USAGE OF INFORMATION RESOURCES

The **business strategy** is, in fact, the vision, the long-term arriving point, the level of ambition.

The last, but not least, **information resource strategy** is, in my opinion, the bind, the main tool that makes the bond between organization strategy and business strategy. Trough it al the resources are to be used in a proper manner in order to reach the main goal.

Going down, to a helicopter fly height for instance, the picture is more complex than at first sight.

Today, the managers are confronting with a high competitive environment and it is no room for errors. Therefore, they must really understand the layers of strategic landscape, from different points of view.

**Porter's five competitive forces model** as is shown in fig. 3.

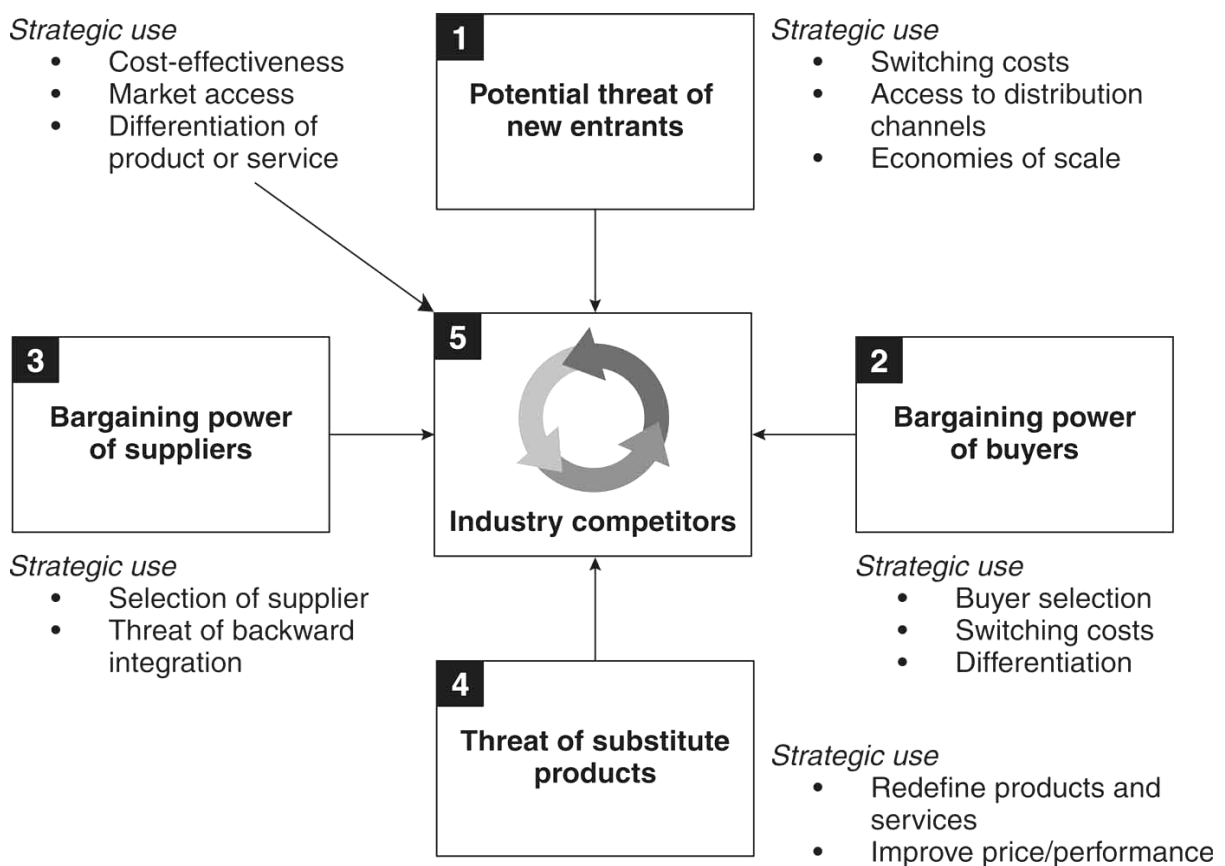


Fig. 3 Competitive forces [5]

This model shows not only the main forces, which influence the competitiveness of a company, the means to increase it, but also the threats.

*Threat of new entrance* represents the menace of emerging new competitors on the market and can be minimized by raising barriers, such as government regulations, providing unique feature of product. Information resources can also create a barrier by using a unique resource.

*Bargain power of buyers.* Clients have the possibility to influence the competitive market. That is why, information resources must be used to create a *switch cost*, which makes less attractive to buy from competitors.

## ***THE STRATEGIC USAGE OF INFORMATION RESOURCES***

*Bargain power of suppliers.* Suppliers may also influence the profit of company. Information resources may be used to achieve a relative dependency of suppliers to company, increasing the level of requested resources, for instance. That will lead to impossibility of suppliers to drop you down easily.

*Threat of substitute products* is referring also to customers and their willingness for substitute. Information resources are able to reduce this risk by introducing innovations, or new features for product, even if these make the previous product obsolete.

*Industry competitors.* When a company competes within an industry, the level of rivalry is high the withdraw costs are expensive, and often the image of company is fading in the landscape. In these circumstances, information resources may have the solution. By standardizing the information system, organization could respond more quickly to a new opportunity. Also, using the information resources creatively, the company may became unique and be more visible on the marketplace.

The second view of Porter is **Alter the value chain**. Porter splits the value chain in two main categories: primary and support activities (fig. 4).

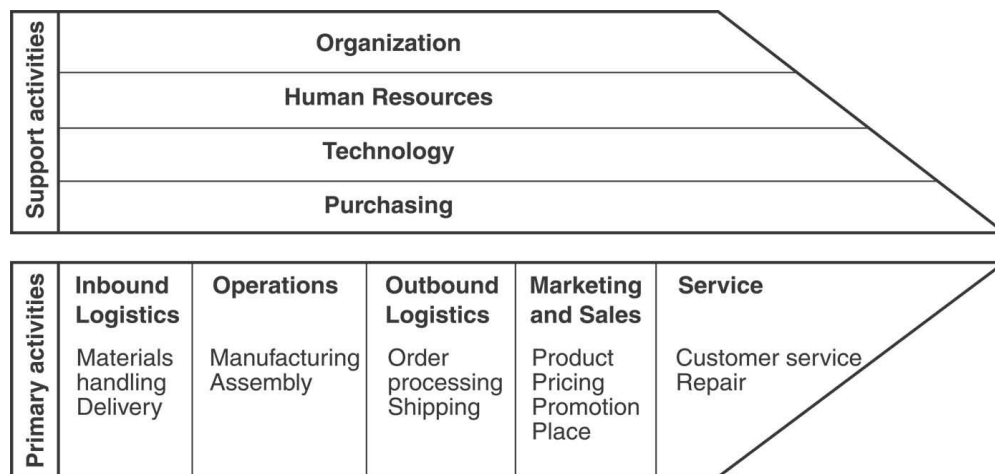


Fig. 4 Value chain model [5]

As it can be seen, value chain consists in all activities that create, deliver and support the product. It is obviously a interdependency between these activities, so each of them can alter the outcome. Therefore, the information system has to be well implemented on each activity. As the figure says, competition is based on two principles: lowering the cost or increasing the value added of product. Lowering the cost is leading to efficiency, which can be successful achieved by using information resources, but when speak about raising the price, should consider that accurate information from outside the company is needed. After words, is about competitors' prices, or the most important one, the customer.

This value chain model is applying for one organization, but it could be also extended to entire production chain as is depicted in fig. 5.

**The Resource-Based View** regarding the usage of information resources for gaining competitive advantage trough supply resources. The model is similar as the previous but is more focused on external factors. The winning such way can be done using information resources in two directions:

- Attaining a competitive advantage, and for that valuable and rare resources is needed;

## THE STRATEGIC USAGE OF INFORMATION RESOURCES

- Maintaining the gained advantage by protecting the resource from imitation, substitution or transfer.

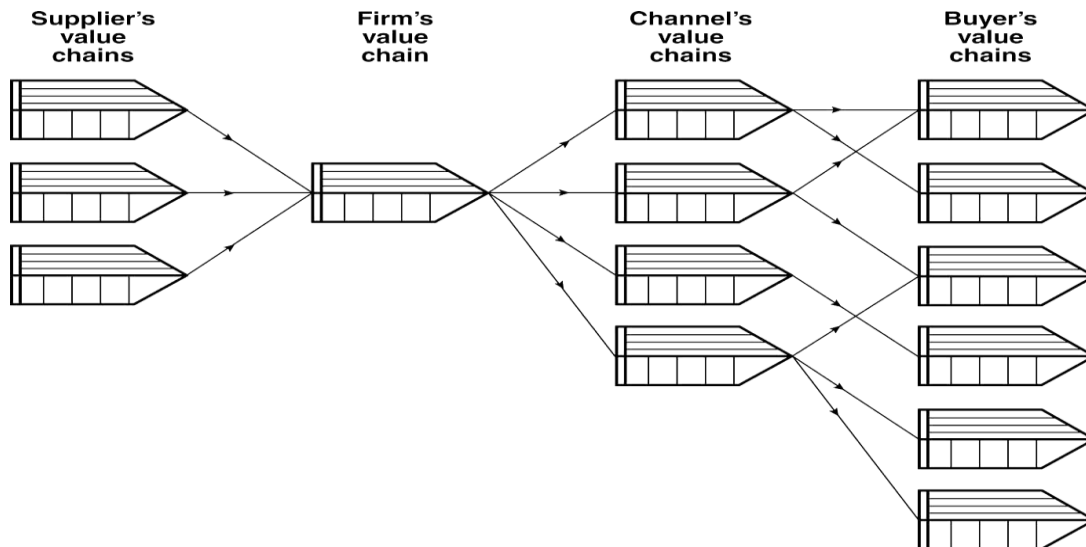


Fig. 5 The value system [5]

**Strategic alliances** is another way to gain competitive advantage, but this is happened on a larger scale and consists in interrelationships between one or more companies. Information resources is, by far, the main tool for develop such a relationship by sharing information resources, or by facilitating communications and coordination.

As every planned action, when using information resources for gaining competitive advantage, a risk should be taken. There are some of them

- Implementing Information System poorly not lead to a desired result;
- Awakening a sleepy giant- on the market channel a competitor with a bigger pocket may be interested in implement an information system, and even with better features;
- Bad timing- sometimes customers are not ready yet to embrace a new product with revolutionary features;
- Failing to deliver what customers want- the company did not reach the requirements of the market.
- Falling out of law- sometimes a big picture is lost because of concentration on information system implementation, and breaking the law may happened.

### 5. Conclusion

The strategy is the eyesight of an organization. To grabble in finding a way to the goal is not a desirable method. But, if beside eyesight a car is used to reach the arrival point that's more efficiently. That means to use the technology, and if a GPS is added to find the proper path is almost perfect. Only human factor remains to make the difference.

In our days, the decision-makers should be aware of the power of information resources, because only through it they can achieve a goal in competitive way. They have to invest money in buying and developing new technologies for best results. In addition, is not just to have new technology but it has to be spread, standardize all across the organization components, and most important, be used timely and properly. We saw



## THE STRATEGIC USAGE OF INFORMATION RESOURCES

in this paper how important is that resource but I want to iterate again, concerning the present fast-moving environment, that information resource is a time-saver tool, and as we know, time is money. From this point of view, it is noticeable that information is becoming an invisible inner value component of product. Looking beyond the theoretical boundaries it is more obvious that business strategy and information resources strategy are more co-creating dimensions, influence each other, in these days.

I cannot finish my paper without make some considerations about military system. Since the computer appears, the face of the war has changed several times. Whatever, even in the past the philosophy was almost the same. First hit should be planned upon the communications to neutralize the chain of command.

However, speaking about information resources in the present, beside the communication, new terms and features arises such as *intranet*, *data link*, or later on *cyber warrior*.

Therefore, many changes took place inside military system in matter of information resources: from satellite survey down to integrated system of defense. Without going into details, let us look upon an air base. What means information resources, for it? First, to see the alignment of goal and information resources strategy, assume that the vision is to be the best in performing its required missions (air defense, aerial supremacy, air support missions, etc).

With those mission in mind, information resources strategy for an air base, should aim upon

- Accurate intelligence support
- An integrate system of communications between air base components and with HQ.
- Achieving the best or suitable technologies that make de difference in the battlefield.

... and many others.

What I want to bring into your attention, related to Information Resources, is a thing that amaze me.

- Data Link capability;

This capability is a feature of a very high performance military Information System which is provided for decision-makers and for combat elements.

What is good for, and how make the difference?

Theoretically, this capability integrates small pieces of a *big picture* and provides a comprehensive layer of battlefield in real-time reference. This means, the *big picture* is continuously changing without any other helping actions.

On the other hand, it creates opportunities for common effort by crossing all the categories of combat elements.

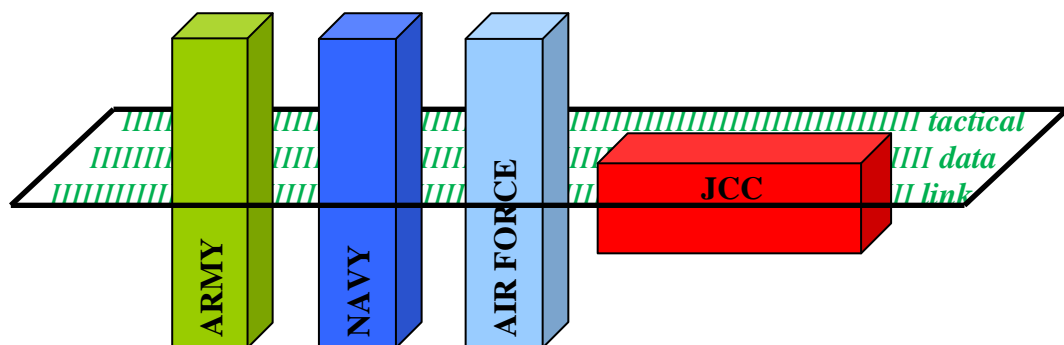


Fig. 6 Tactical Data Link

## ***THE STRATEGIC USAGE OF INFORMATION RESOURCES***

This is just the beginning but, certainly, the military organization will evolve to take advantage of new arising capabilities.

### **References:**

- [1] Jay W. Lorsch & Thomas J. Tierney, *Aligning the stars*
- [2] Carlo Vercellis, *Business Intelligence Data Mining and Optimization for Decision Making*, John Wiley & Sons, Ltd., 2009
- [3]<http://www.businessdictionary.com/definition/organizational-strategy.html#ixzz3GoKni1i6>
- [4] William R. King and Varun Grover, *The Strategic Use of Information Resources: An Exploratory Study*, *TRANSACTIONS ON ENGINEERING MANAGEMENT*, VOL. 38, NO. 4, NOVEMBER 1991
- [5] Keri Pearlson & Carol Saunders, *Strategic Management of Information Systems*, Fifth Edition, <https://www.youtube.com/watch?v=5M9HBX56CTs>