# IT tools and strategies in business

## Grigorina BOCE
*Department of Informatics and Scientific Education, Mediterranean University of Albania, Tirana, Albania*
*E-mail address grigorina.boce@umsh.edu.al*

## Vilma TOMÇO
*Department of Statistics and Applied Informatics, University of Tirana*
*E-mail address vilma.tomco@feut.edu.al*

## Alma HYRA
*Department of Informatics and Scientific Education, Mediterranean University of Albania, Tirana, Albania*
*E-mail address alma.hyra@umsh.edu.al*

## Abstract

The focus of this work-in-progress paper is on strategy tools, which is a topic that lately has received a lot of interest in practice. There are various streams of literature of strategy tools, ranging from traditional company-related strategy tools to more flexible and individual-based strategy tools.

This paper intends to provide some initial insights into this issue. The aim of this study is to explore managerial perceptions of strategy tools as facilitators of the development of business relationships and networks. Many small companies active in the segment of information and communication technology demonstrate difficulties in terms of expanding their business and increasing the product and service portfolio. In this context, this study aims to apply strategic tools and business model in a micro-segment of the software industry inserted into a huge market competition and low entry barriers.

The research questions are: a) What are the perceptions of managers of strategy tools as facilitators of developing business relationships and b) how can combinations of strategy tools facilitate the development of different kinds of business relationships? In this paper, the first research question is initially explored empirically. The empirical part of the paper is based on qualitative case studies of ten companies, and more particularly on the perceptions of the managers within these companie. Businesses in all sectors are facing a situation where technology is changing the landscape around them, transitioning from the back room of an organization into the hands of customers, employees and society. Faster development cycles, disruptive business models and increased competition are highlighting the increasingly essential role of technology and automation in business. This means that the success of business relies heavily on the optimal utilization of technology.

**Keywords:** technology, development, automation

## 1. Introduction

Businesses in all sectors are facing a situation where technology is changing the landscape around them, transitioning from the back room of an organization into the hands of customers, employees and society. Faster development cycles, disruptive business models and increased competition are highlighting the increasingly essential role of technology and automation in business. This means that the success of business relies heavily on the optimal utilization of technology.

Business Technology as a concept describes all technology that helps an organization run its business and operational processes. That technology can be customer-facing applications and solutions, business-critical production and logistics solutions, or back office financial systems, among others.

## 2. Changes in technology have included

Email – electronic mail enables written messages to be sent instantly to others, and files can be shared as attachments.

- Mobile phones – mobile phones enable conversations to be conducted anywhere.
- Mobile applications – applications (apps) are designed to run on smart phones and tablets. They can be used to create documents, capture images and enable banking transactions. Businesses have been able to develop apps to conduct m-commerce. [1]
- Websites – a page or group of pages containing written and visual information using various media, this allows businesses to communicate with customers and has enabled e-commerce.
- Social media – a variety of web platforms that enable users to share ideas, content, information and messages. Businesses are able to use this as a valuable customer service tool.
- Cloud services – software, such as online document editing and data storage, that is run from a remote location but that can be accessed from anywhere as long as a connection to the internet is maintained.
- Manufacturing – a variety of technological manufacturing techniques are commonly used, such as using robots to build cars.
- Warehousing – as businesses take online orders, robots are commonly used to move goods around warehouses and load them onto vans.
- Web conferencing – a meeting that uses communications software to stream images and/or voices over the internet between participants in different locations.

### 2.1. The use of technology in the workplace

Using technology in the workplace is now very common in businesses. Businesses often conduct activities such as administration, communication, recruitment and stock control using a range of technological methods.

Administration has been made much easier with technology and software programs. Administration has benefitted through word processing packages, email distribution, databases and telephone systems. This has made actions such as letter writing and managing large amounts of information much easier.

Communication in workplaces has become much easier. This may involve day-to-day business communications between colleagues, with customers and with other business stakeholders. It has been made much easier with email, texts, phone calls, social media and websites.

Recruitment uses technology in a number of ways. For example, many job roles are now advertised on the internet through business websites and recruitment websites. Some recruitment methods, such as online testing and video interviews are also completed using technology. Businesses can use technology to pass on any communication to applicants such as email or phone calls.

Stock control has become much easier to manage using online methods. Businesses now use complex software programs to manage stock levels, order stock and let customers know how much stock they have available. Businesses are able to monitor where stock is and create automatic re-order systems if required.

## 3. The use of computer aided design and computer aided manufacture
### 3.1. Computer aided design (CAD)

Computer aided design (CAD) is the use of computer software to design new products in 3D (Table 1). This enables businesses to visualize new designs in a variety of materials and send images around the world for collaboration and consultation. Once production is finalized, these designs are sent to computer aided manufacture (CAM) machines to be formed.

Table 1. Advantages and Disadvantages of CAD

| Advantages | Disadvantages |
|---|---|
| Ideas can be drawn and developed quickly. | Expensive to set up. |
| Designs can be viewed from all angles and with a range of materials. | Needs a skilled workforce. |
| Some testing and consumer feedback can be done before costly production takes place. | Difficult to keep up with constantly changing and improving technology. |
| It becomes easier to design and test a range of ideas. | Computers can fail. |

*Source: Arcvertex, CAD Outsourcing companies*

### 3.2. Computer aided manufacture (CAM)

Computer aided manufacture (CAM) involves using computers to control machines to undertake the production of goods (see, Table 2). By using CAM, designs can be sent to CAM machines such as laser cutters, 3D printers and milling machines. [2]

Table 2. Advantages and Disadvantages of CAM

| Advantages | Disadvantages |
|---|---|
| Fast and accurate production. | Expensive to set up. |
| Machines can run constantly on repetitive tasks. | Needs a skilled workforce of engineers. |
| Good for producing on a mass/flow production line. | Downtime required for maintenance. |
| Less material wastage. | Computers and machines can fail. |

*Source: Arcvertex, CAM Outsourcing companies*

## 4. How these differ from traditional methods of production
Traditional methods of production involve drawing designs by hand, creating a number of prototypes and using humans to manually produce goods or operate machinery. These methods have been used for a long period of time, however are less efficient, more expensive and more time consuming than new methods of CAD and CAM.

### 4.1. The use of e-commerce and m-commerce to sell goods and services

E-commerce (see, Fig 1) refers to the buying and selling of goods and services online. It includes any transactions between businesses carried out using the internet, usually through a website. M-commerce refers to the buying and selling of goods and services online through a mobile device. It includes any transactions between businesses carried out online, often through a mobile app or a website accessible on a table or mobile telephone. Many businesses now offer an m-commerce option in addition to their e-commerce for customers to purchase goods and services. [3]
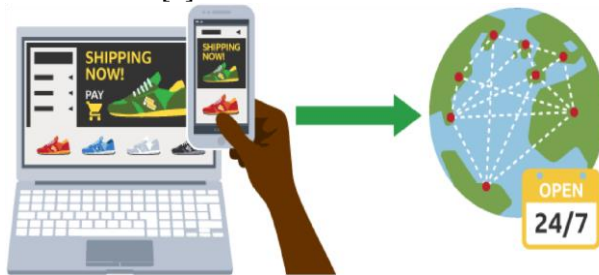


Fig 1. E-commerce and E-retail
*Source: rangapca.com*

Three things are required for e-commerce and m-commerce to take place:

- a seller who has products and services that are displayed electronically;
- a buyer who has the equipment required to view the seller's products and services, and a means of paying for them;
- a network that enables information and payment to be exchanged by the buyer and seller;

Physical retail outlets have been hugely impacted by the increase in e-commerce and m-commerce. Far fewer people are now going out to shop in physical retail outlets, which has meant that businesses have had to adapt in order to survive. [4]

Some businesses use multi-channel distribution to sell their products, this means that they use several methods to sell their products to customers. Popular methods of multi-channel distribution include a retail store, own website, comparison website, telephone sales and catalogue.

Table 3. Advantages and Disadvantages of e-commerce and m-commerce

| Advantages | Disadvantages |
|---|---|
| Attract customers across the globe, increasing the target market. | More competitors from across the globe, making it harder for the business to get noticed. |
| Sell 24 hours 7 days a week. | Employees may need new skills, e.g. website maintenance. |
| Receive payments immediately. | Procedures required for how products and services will be delivered and processing returns. |
| Reduced overhead costs compared to running a physical shop. | A need to maintain and update technologies, including security software, which may be expensive. |
| Able to sell a huge range of products, due to not being limited by shop size. | Customers must wait for products to be delivered. |
| Products and services can be delivered in a range of locations. | Customers cannot see or try on items before ordering. |

*Source:researchgate.net*

Both digital media and social media have grown to become an important part of business, particularly in relation to communication and marketing activities. Digital and social media enable the use of electronic communication for sharing ideas, content, information and messages. Digital media may include text messages, emails, internet-based messaging services and web chats. Social media platforms include Facebook, Instagram, snapchat and Twitter for example.

Before the COVID-19 outbreak, one in five EU enterprises made online sales. For 2019 (see, Fig 2), online sales amounts to 18% of total turnover of companies that employ 10 or more people. Between 2013 and 2019, the percentage of companies selling online increased by 3.5 percentage points and the turnover of these companies realised from online sales increased by 4.5 percentage points. [11]
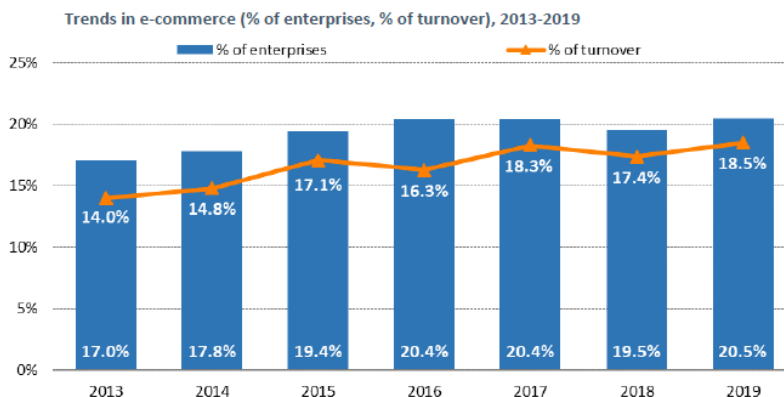


Fig 2. Eurostat, Community on ICT usage and e-commerce in enterprise
*Source: Eurostat*

## 5. How businesses use digital and social media for communication

Most business activity on digital and social media involves:

- marketing and promotion ;
- interacting with customers;
- responding to complaints ;
- communicating with stakeholders.

### 5.1. How digital and social media have affected business communication

Digital and social media have made communication much easier. For example, an email or text is very cheap to send to a large number of customers, they arrive instantly and can be easily tailored for each individual. [5]

Social media has allowed businesses to create an open and instant dialogue with its customers, and is often a free method of communication.

Social media has enabled targeted, cheap, effective advertising.

Texts and emails are now often used to give order updates to customers.

Customers can easily ask questions, or express their views, about the products and services of a business.

### 5.2. Advantages and disadvantages of using new technology for businesses

New technology has a range of advantages and disadvantages for businesses and business stakeholders. It is important for businesses to assess the risk and make informed decisions about whether to use the latest technology. [6]

Advantages of new technology include:

- easier, faster and more effective communication;
- better, more efficient manufacturing techniques;
- less wastage;
- more efficient stock management and ordering systems;
- the ability to develop new, innovative approaches;
- more effective marketing and promotion;
- new sales avenues.

Disadvantages of new technology include:

- increased dependency on technology;
- often large costs involved with using the latest technology (especially for small businesses);
- increased risk of job cuts;
- closure of high street stores in favour of online business;
- security risk in relation to data and fraud;
- required regular updates;
- can go down or have faults, which can stop all business operations instantly.

## 6. A Dual Role

Those who manage technological change must often serve as both technical developers and implementers. As a rule, one organization develops the technology and then hands it off to users, who are less technically skilled but quite knowledgeable about their own areas of application. In practice, however, the user organization is often not willing—or able—to take on responsibility for the technology at the point in its evolution at which the development group wants to hand it over. [7]

The person responsible for implementation—whether located in the developing organization, the user organization, or in some intermediary position—has to design the hand-off so that it is almost invisible.Perhaps the easiest way to accomplish this task is to think of implementation as an internal marketing, not selling, job. This distinction is important because selling starts with a finished product; marketing, with research on user needs and preferences.

Marketing executives worry about how to position their product in relation to all competitive products and are concerned with distribution channels and the infrastructure needed to support product use.

### Marketing Perspective

That involving users in a new technology's design phase boosts user satisfaction is quite well known, but the proper extent, timing, and type of user involvement will vary greatly from company to company. For example, software developers in an electronic office equipment company established a user design group to work with developers on a strategically important piece of applications software when the program was still in the prototype stage. [8]

Prospective users could try out the software on the same computer employed by the program's developers. The extremely tight communication loop that resulted allowed daily feedback from users to designers on their preferences and problems.

This degree of immediacy may be unusual, but managers can almost always get some information from potential users that will improve product design.

### Risky Site, Safe Innovation

There are two reasons for conducting a pilot operation before introducing an innovation across the board in a large organization: first, to serve as an experiment and prove technical feasibility to top management and, second, to serve as a credible demonstration model for other units in the organization. These two purposes are not always compatible.
If the innovation must succeed at the pilot site in order to survive politically, the implementation manager may choose a site that poses virtually no risk but that neither offers real benefit to the organization nor establishes a model for other units. At the same time, however, if the trial is to be a credible test, it cannot take place among the most innovative people in the corporation. [9]

Success at this kind of site is vulnerable to the criticism that these users are far from typical.

Testing the new technology at the worst performing unit, even though it may be where the innovation is most needed and would show the most spectacular results, is no better a choice. If the project fizzles, the implementation manager will not know how much of the failure was caused by extraordinary problems with the site and how much by the inherent properties of the technology.

If the project succeeds, critics will be quick to note that anything would have helped operations at that site.

**Multiple Internal Markets**

The higher the organizational level at which managers define a problem or a need, the greater the probability of successful implementation. At the same time, however, the closer the definition and solution of problems or needs are to end-users, the greater the probability of success. Implementation managers must draw up their internal marketing plans in light of this apparent paradox. As these managers identify the individuals or groups whose acceptance is essential to an innovation's success, they must also determine whom to approach, when, and with which arguments. Top management and ultimate users have to buy into the innovation to make it succeed, but marketing an idea to these two groups requires very different approaches. How, then, can an implementation manager foster general acceptance of an innovation from such a range of constituencies?

We believe this executive must view the new technology from the perspective of each group and plan an approach to each accordingly.

**7.Cyber security in SME (Small and Medium Enterprise)**
Nowadays business development, cyber security represents one of the main challenges faced by IT enterprises, especially SMEs, which must generate competitive ideas to ensure market stability.

SMEs are not always aware of the risks and consequences of business development technologies in the absence of proper level of protection against potential cyber-attacks. Small businesses are underestimating the impact that a cyber-attack brings. The results of a study by Cyber Streetwise and KPMG showed that 23% of SMEs cyber security was one of their main concerns, which is turning into a way of doing business; 83% of consumers surveyed are concerned about which business has access to their data, and 58% said a breach of security would discourage them from using the same business in the future. [10]

Some cyber-attacks on SMEs are data loss, DDoS attacks and ransomware which lead to financial loss up to reputation damage. Traditional SMEs are insecure about implementing digital business strategies, due to the difficulties in maintaining large databases, avoiding the responsibility to use advanced IT applications and tools. Therefore, SMEs are more vulnerable to cyber threats.

In the Eurostat Community survey on ICT usage and e-commerce in enterprises (see, Fig. 3), large enterprises adopt new technologies more often than SMEs. Electronic information sharing through enterprise resource planning (ERP) software is much more common in large enterprises (78%) than in SMEs (33%). SMEs exploit e-commerce opportunities to a limited extent, as only 18% sell online (versus 39% of large enterprises). [11]

There are many other technological opportunities yet to be exploited by SMEs such as cloud services and big data.
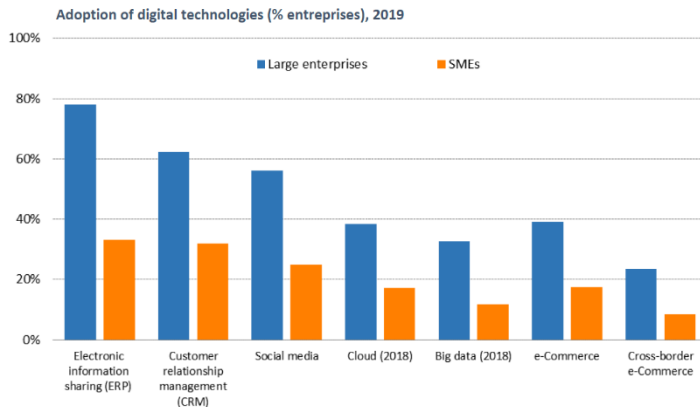


Fig 3. Eurostat, Community survey on ICT usage and e-commerce in enterprises
*Source: Eurostat*

### 7.1. Cyber security in Albanian SME

Albanian businesses have also had a development in terms of the adoption of digital technology. The following table provides the data of the World Economic Forum regarding the growing dynamics of the adoption of digital technology in the Albanian economy. It is noted that the ranking for "Business Sophistication" (SB) and "Level of Technology" (LT) has a significant improvement from year to year. [12]

**Table 4.** Adoption of digital technology of businesses in Albania

| Year | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 | 2015-2016 | 2016-2017 | 2017-2018 |
|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| BS | 3.4 | 3.6 | 3.8 | 3.6 | 3.4 | 3.6 | 3.7 | 3.7 | 3.9 |
| LT | 2.4 | 2.6 | 2.6 | 2.6 | 2.8 | 2.7 | 2.8 | 3.0 | 3.2 |

*Source: The Global Competitiveness Report*

Like in Europe, SMEs in Albania do not consider how a cyber attack can affect their business. According to statistics provided by Bitsight (an international cyber security rating company), the security rating for SMEs reaches an advanced level of 740. From this

assessment for SMEs in the Republic of Albania, the most common vulnerabilities are found in the chart below (see, Graph 1):

**Graph 1**. The most common vulnerabilities SMEs in the Republic of Albania

Top Infections (% of IPs)

| Name | Last 30 Days | Last 7 Days ↓ | Change |
|---|---|---|---|
| Gamarue ❶ | 66.7% | 100.0% | + 50% |

*Source: Top infections, Bitsight*

Gamarue allows attackers to remotely access compromised devices. It is spread mainly through e-mail (spam). In Albania, as in Europe, most SMEs executives consider information security only as a technical intervention to detect virus threats and data backups.[13]

To increase the cyber security of SMEs their executives:
- must implement security policies for assessing and enforcing information security;
- should address security in the information system construction phase;
- should design training and awareness programs for employees.

## 8. Conclusions

Business has always existed since the early times of man. Even though it only began with the simplistic barter system, business would not be the same as it is today without the advancements in technology. All the major industries would fall into a catastrophic collapse if one were to take away technology from business, since majority of business operations and transactions somehow involve the use of technology. The role of technology in business caused a tremendous growth in trade and commerce.

Business concepts and models were    revolutionized as a result of the introduction of technology. This is because technology gave a new and better approach on how to go about with business. It provided a faster, more convenient, and more efficient way of performing business transactions. Even the calculator is a product of technology. It is indeed unfathomable to summon the idea of going back to the days where everything was done manually, which basically means starting all over again from scratch.

Indeed, technology in business ultimately made living worthwhile, it cannot be denied though that technological threats to business are growing rampant, such as hacking and other malicious activities, so one has to be responsible enough in utilizing the power of technology.

SMEs in Europe and Albania should consider how a cyber attack may affect their business and take security measures under the relevant cyber security law of their countries.The good that technology brings has some excess baggage in the form of bad things that threaten

to shake the business world. In the end, it is still responsible use of these that would further allow us to enjoy the benefits that technology can bring.

SMEs in Europe and Albania need to invest in the latest technology to be able to prevent and deal with various cyber attacks.

**References**

[1]   Lean Thinking: Banish Waste and Create Wealth in Your Corporation, Revised and Updated Hardcover – 2003

[2]   Michael porter's landmark trilogy competitive strategy/competitive advantage/competitive advantage of nations

[3]   Playing to Win: How Strategy Really Works by A. G. Lafley, Roger L. Martin et al

[4]   Competitive Strategy: Techniques for Analyzing Industries and Competitors by Michael E. Porter

[5]   https://www.sofigate.com/

[6]   https://readwrite.com/2019/08.10.16

[7]   https://www.bbc.co.uk/

[8]   https://smallbusiness.chron.com/

[9]   https://www.thebalancesmb.com/

[10]  KPMG, 2018 "Small business reputation and cyber risk"

[11]  Digital Economy and Society Index (DESI) 2020 Integration of digital technology

[12]  The Global Competitiveness Report" http://reports.weforum.org/global-competitiveness-report

[13]  Siguria Kibernetike në ndërrmarje të vogla, https://cesk.gov.al