Digitalization and Opportunities to Improve Business Process Management Efficiency

Mariam KHACHIDZE
Sulkhan-Saba Orbeliani University, Georgia

Abstract: *Human life is improving and changing along with technical and technological development. Just several years ago people could hardly imagine that their daily routine would be changed by distancing themselves from the society and moving work or communication processes online.*

The global pandemic has accelerated the transition to digital services not only in specific areas, but also in small, medium and corporate businesses, state and public institutions, banking and financial systems.

Multifunctional, customer and business-friendly digital platforms have been created and implemented by the world's leading technology companies and using them in practice has been successful up to date. Development-oriented and successful companies have taken some steps towards digital transformation, although the worldwide spread of pandemic processes has significantly accelerated digital processes.

Transformational processes have penetrated areas whose activities were not compatible with online formats and digital processes at first glance. It was especially difficult to transfer processes to online social space for countries or businesses that do not have adequate technical and material bases, there is a problem with network implementation, lack of qualified staff, insufficient intellectual resources, etc.

It is obvious that considering the current reality, these processes are accompanied by significant difficulties, which require large-scale and fundamental changes, upgrading standardized processes, re-equipment of technical and technological bases, accumulation of large financial resources, raising staff qualifications, retraining, etc.

The aim of the paper is to study the processes of digital transformation in modern reality and to evaluate its efficiency

Large number of organizations around the world believed that digital transformation was nothing more than establishing some kind of online connection with the user, whether it would be a chat-bot or any other simple means of software. The necessity of being studied who would use these services, in what frequency and why - was not considered a priority. The pandemic situation made it inevitable to move to new digital reality and encouraged to transfer not only short-term

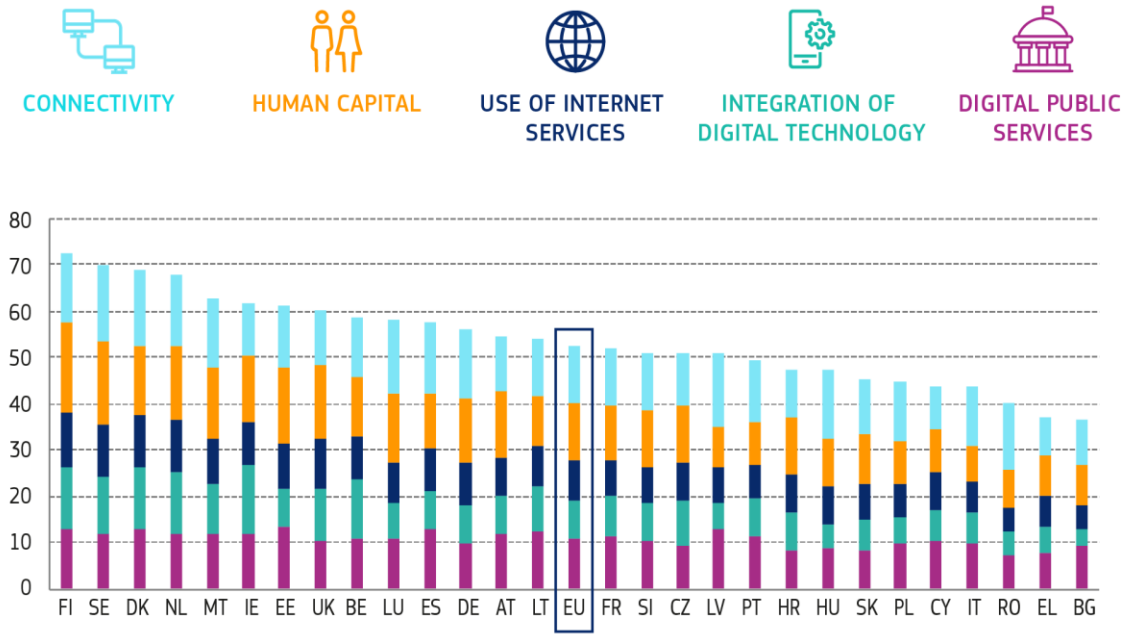
activities to the online space, but also to create a range of products and services. On the one hand, management and managing processes digitally, and on the other hand, preserving customer loyalty and tailoring to customer needs and requirements, has become the number one task in business.

As we have already mentioned, not only individuals, but also businesses or government institutions are related to digital technologies, which in turn create the greatest economical potential. Digital processes are important factor that leads to the implementation and development of the digital economy.

The digital era and modern challenges

Technological development is accompanied by challenges that are particularly sensitive to the economies of developing and transition countries. Achieving digital transformation is impossible without promoting and improving the business environment in the country, investing in the health care and education sectors and managing processes properly. In order to develop each of these components, countries first need to access the Internet, which further leads to gaining digital services.

From this point the 2020 data from the EU countries is very interesting, that shows the figures of Internet access, human capital, use of Internet services, involvement in digital technologies and access to digital public services in the countries within the group (The Digital Economy and Society Index (DESI)).



Source: https://ec.europa.eu/digital-single-market/en/digital-economy-and-society-index-desi

Following the footsteps of developed countries, developing countries are also trying to keep pace with modern challenges and take effective actions to entirely integrate into the digital world and the technologies of the future.

Accessing digital technologies obviously makes it much more flexible to interact with business or governmental institutions, as it is possible to access services during the pandemic and quarantine period remotely, e-learning and making managerial decisions based on digital technologies.

Along with the crisis and difficulties throughout the world, business industry has faced difficult challenges: waiting for ongoing processes or making risky decisions at the optimal time: using this time to analyze mistakes made in the past and mulling over the company idea they want to create tomorrow. For example, when in the process of large-scale spread of the virus it became mandatory for hired employees to work remotely, most large and medium-sized companies were not ready to ensure the continuity of the work process technically. Companies such as: call centers, logistics companies, number of educational institutions, etc. had trouble in the working process and it became necessary to do some work to transfer the processes to the digital space.

If we monitor the current processes in today's world, we can confidently say that adaptation to digital reality is a factor that stimulates not only business sector, but also economic growth. In modern reality, digital transformation is the most important and the only right way for development. It is equally important in both the private and public sectors.

Digitalization in the private and public sectors

The process of modernizing new generation digital services or platforms is ongoing process in Georgia, as well as in technologically developed countries. More and more business entities are starting to operate using digital technologies and creating innovative services, startups, etc.

Before reviewing the current digital processes and their efficiency in business sector, influence of digital technologies on state public institutions is interesting and diverse.

It is vital for the digitalization of economics to invest in information and communication technologies that provides us with service variability in the future. This is especially efficient for social services, tax system and electronic document circulation.

Georgia has relevant experience and achievements in the introduction of digital technologies in the process of public service delivery, which is confirmed by international assessments (UNDESA E-Government development index, 2018. source: UN E-Government Survey). In terms of data digitization, the government of Georgia has successfully implemented such important projects as:

- my.gov.ge;
- Tax system based on digital technology;
- Houses of Justice and Community Centers;
- Online training portal for public servants ethics.gov.ge;
- Electronic system of registration in schools and kindergartens;

- Digital School Project;
- Integration of digital technologies in the learning process;
- Electronic system for registration in higher education programs, etc.[1]

At the same time, projects are being actively implemented in the following areas:

- Innovation Service Lab;
- Use of blockchain technology for land / property registration process;
- The concept of smart-city for local self-governments;
- The concept of a single business house, which should represent one-time physical / digital location for the delivery of all business-related services on a one-stop-shop basis[2].

The Organization for Economic Co-operation and Development (OECD) distinguishes between three stages of digital technology integration in the public sector: digitalization; e-government; digital government that means transforming public services into people-oriented and customer self-services. It is the OECD that offers transformation of the e-government concept into we-government concept. We-government concept includes a citizen-based management model using digital technologies.

It is clear from the discussed projects that not only for business, but also for the state it is crucial to introduce digital technologies in order to fully implement public services. In its turn, the diversity in digital services in private and public sectors directly affects the material and moral well-being of citizens.

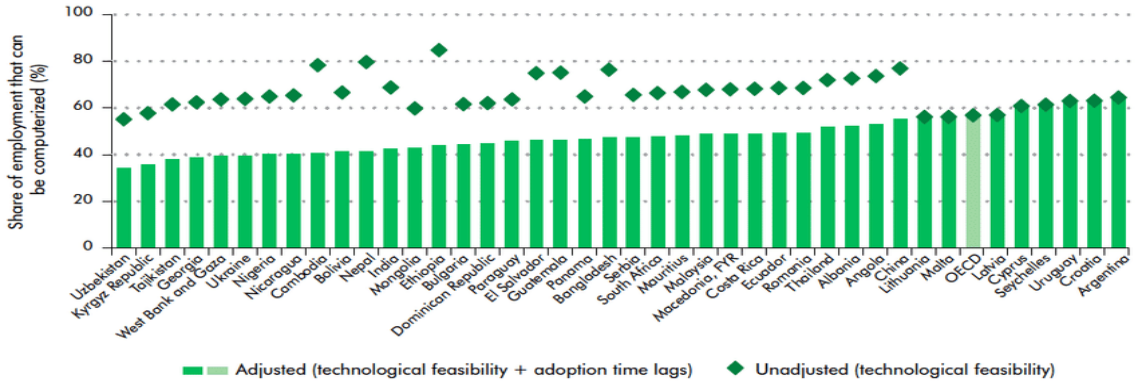
State / Public Institutions		Business entities
Information accessibility		Financial accessibility
Accessibility of healthcare, social and state services		Creating an entrepreneurial and start-up culture
Opportunity to participate in e-government	Citizens	Simplicity in the process of recruitment and hiring
Simplicity in the process of recruitment and hiring		Development of intellectual potential (trainings, education, etc.)
Development of intellectual potential (trainings, education, etc.)		Receiving services digitally

Source: Based on the European Commission project "Sonnet", "Needs of the public and public sector[3][4]

As we have mentioned, digitalization and maximum computerization of activities is an opportunity and its development gives us possibility to create long term technological progress and economic development.

[1] http://www.dea.gov.ge/uploads/e-georgia.pdf
[2] Digital transformation in the public sector. Review of International Studies. From E-Government to We-Government. 2019.
[3] Digital transformation in the public sector. Review of International Studies. From E-Government to We-Government. 2019.
[4] https://www.sonnets-project.eu/results/20

According to a 2016 World Bank study, only 1/3 of employees in developing countries used information and communication technologies (ICT). However, it is likely that these figures will increase along with the development of technology and process digitization.



Source: WDR 2016 team. See figure 2.24 in the full Report for more details. Data at http://bit.do/WDR2016-FigO_18.

[5]

In terms of digital technology integration, it is very interesting to use modern possibilities of information-communication and technology fields within the state and business sector. Using them in practice makes it possible to move processes into digital reality.

Digitalization

Processes	**Implementations/sector**	**Results**
Artificial intelligence	State and business sector	Personalization of services; Automation of standard and routine tasks;
Extended reality (AR technology)	State and business sector	Integration of additional information with the real environment, navigation;
Machine training	State and business sector	Creating "smart" services that identifies warning signals
The so called “Big Data”	State and business sector	Fast collection and analysis of huge amount of data;
Blockchain technology	State and business sector	Store large amount of digitized information securely;
E- signature (E ID)	State and business sector	Go through the verification and signing processes remotely, without being on site.
Find a common language between computer and human	State and business sector	Integration of business and "professional" language in the computer space, "understanding".
Application Programming Interface (API)	State and business sector	Opportunity to receive innovative online services.

[5] https://www.worldbank.org/en/publication/wdr2016

"Policy making 2.0"	State sector	In the process of policy identification;
	In business sector - BI and IRP systems	In the process of managing customer needs;
Personalization	State and business sector	Minimize risks
Digital / mobile devices.	State and business sector	Access services 24/7
Smart working environment	State and business sector	Balance between work and personal life; "Happy employee".

Source: according to E-Georgia – Decades of Successful Transition[6]

After analyzing the previous processes, it becomes clear that digital transformation is our inevitable reality, which has been further accelerated by the rapid development of pandemic processes. Accordingly, advanced, development-oriented business organizations are trying to meet modern challenges at an accelerated speed. Technological upgrades obviously require investment and mobilization of additional resources to enable companies to meet the increasing demands of their customers. Above mentioned issue is especially important considering the fact that along with the development of technology, demands of consumers and competition between businesses also increases significantly. Companies always try to create a variety of services repeatedly, they (companies) are forced to constantly think about improving service quality.

Digitization is a difficult and quite long-term process, especially in banking, in financial organizations. On the one hand, it is necessary to have high-level platforms, systems, which allow them to cope with the modernization and standardization processes successfully, and on the other hand, being able to offer customers such services that provide receiving any financial services, products, information in a single place. In order to gain a competitive advantage in the end, each entity strives to create and maintain a loyal long-term customer.

According to a Gartner 2020 research, the main focus and trend for the next 5-10 years will be the development of an intelligent digital network using smart devices that provide smart digital services everywhere. Future trends, according to Gartner, are entirely focused on the idea of "people-centric smart spaces", which implies the influence of technology on people[7].

People-centric – in this part it combines the categories of Hyperautomation, Multiexperience, Democratization, Human Augmentation and Transparency and AI Security Traceability;

Smart spaces – in this part it combines categories of Empowered Edge, Distributed Cloud, Autonomous Things, Practical Blockchain and AI Security.

The most important value that companies need to consider when formulating a long-term strategy is the business and the human factor. Accordingly, we can connect each direction with each other and create a healthy ecosystem[8].

[6] E-Georgia – Decades of Successful Transition http://www.dea.gov.ge/uploads/e-georgia.pdf
[7] https://www.gartner.com/smarterwithgartner/gartner-top-10-strategic-technology-trends-for-2020/
[8] https://www.gartner.com/smarterwithgartner/gartner-top-10-strategic-technology-trends-for-2020/

Technological and systemic development

When discussing technology trends a very simple example is given by Gartner: Domino's pizza multifunction platform, which allows anyone to easily order lunch and pizza from the company. Here are two interesting factors: the first is application that the company has and which can be used by anyone to leave voice messages with the help of smart speaker communication device and the second factor: deliver service with its own vehicles and drones. An example indicates that a company does not have only one single service to communicate or deliver products to customers. It uses any resource and means to receive and deliver the order via any digital means in a short period of time.

The process of digital transformation and modernization is particularly interesting in some financial and banking institutions. On the one hand, their scale (projects, number of employees, budget, subsidiaries, operation in international markets, etc.) and on the other hand, complex and diverse financial products make it interesting to study the peculiarities of their functioning and transformation processes.

Similar to all other types of businesses, it is clear that financial institutions have their own business model, which includes management decisions, financial and reporting issues, large amounts of information (statistical and analytical), personnel and infrastructure resource management, etc. One of the main ways to digitize the financial system is considered to be targeted and consistent process automation, which is impossible to exist without robotic and automated systems.

Why these modules in countries like Georgia?

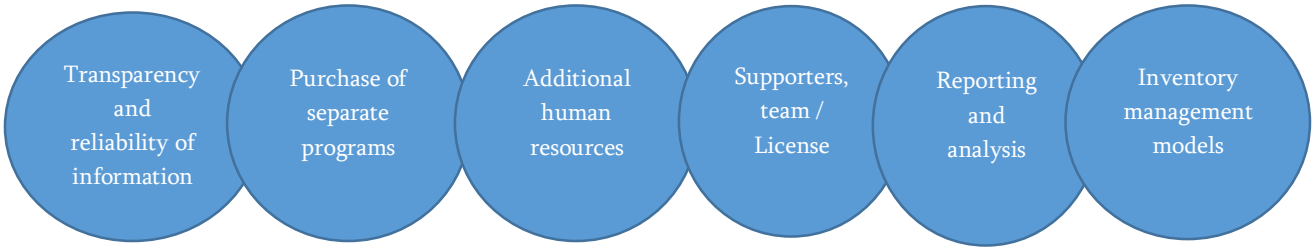
Nowadays in the world markets there are packages of automated systems that allow us to digitize the above mentioned processes. These systems are as follows:

ERP (Enterprise Resource Planing)	**CRM** (Customer relationship management)	**BI** **(Business Intelligence)**
Organize effective management of the company	Customer Database Potential clients Information analysis process	Do timely analysis based on correct data in real time
Core system- Customer-centric operating module		

Source: *https://insightsolutionsglobal.com/what-is-erp-enterprise-resource-planning/*

When used in the business industry, each of these systems offer great opportunities in different directions. The business, which brings together tens of thousands of customers, hundreds of branches and service centers, produces thousands of various transactions throughout the day and can process any kind of forecast scenario using a variety of digital tools. This is a small list of the opportunities that these platforms provide. However, especially efficient are the results obtained by correlating these systems.

Enterprise resource planning system - ERP allows us to monitor the stages of business development continuously, the dynamics of profitability indicators, have the ability to evaluate process improvements, make smart decisions based on the system. The most important thing in today's reality this system can do is the ability to study customer satisfaction. The ERP system gives us opportunity to gather a lot of different types of information, interconnect and create a "single source of truth" result.



Starting from the process of purchasing raw materials finishing to the creation of the final product - the ERP system allows the company to fully control the production processes. Also, solving problems regarding to preliminary forecast of supply and delivery and finding relevant solutions. This gives the following result[9]:

Increasing productivity	Reducing operating costs	Collaboration between business and consumers	Reducing risks

Source: https://insightsolutionsglobal.com/what-is-erp-enterprise-resource-planning/

Having an ERP system in the company means that we have huge opportunities to generate ready-made reports and analytics at any time. This in turn allows us, for example, to analyze and compare the work of structural subdivisions, to measure their results. And with the help of artificial intelligence having ability to automatically get detailed analysis of the strengths and weaknesses of the company, improved and deteriorated figures, etc.[10]

Source: Maisuradze G. "Project Management - Using Modern Information Technologies". GTU, 2020 Tbilisi

ERP systems are used by large financial institutions operating in Georgia. In addition to the listed capabilities, the system has fully customizable modules, a high standard of information security and storage and this significantly reduces the time and financial costs of IT specialists and

[9] https://insightsolutionsglobal.com/what-is-erp-enterprise-resource-planning/
[10] Maisuradze G. "Project Management - Using Modern Information Technologies". GTU, 2020 Tbilisi

employees working on programs. It also allows you to instantly process the data of interest on request.

We should mention platforms like Navision and Sap that are considered to be one of the best platforms acknowledged in the world. Their experience and achievements, performance levels are recognized worldwide, although their performance is characterized by a number of features. In countries like Georgia entry and operation of the above mentioned companies are carried out by the so-called "intermediaries" that creates a number of difficulties. In addition to the high costs required for the system implementation, it must be concluded that at the selection stage the customer's final decision should be made not according to the quality of the ERP manufacturer but taking into account the competence and reliability of the intermediary company[11].

In Georgia and in developing countries generally, medium and small organizations apply the so-called self-development technology, which involves recruiting individual teams to "digitize" information. IT specialists, project managers, developers are completely involved in the processes.

When we talk about self-development methodology - it is important to note that unlike SAP, ERP and NAV functionalities, whose software updates automatically update the business processes of the partner company, it does not happen in the module developed by the company itself, which creates the risk of losing or missing critically important changes, advantages, benefits, etc.

It should be mentioned that ERP systems in modern reality can be vital for the business industry.

In the modern world, practically there is no successful business that does not use customer relationship management modern software - CRM. This system is not only used in corporate business, but is very flexible for managing small (Micro) and medium (SME) businesses. CRM capabilities include:

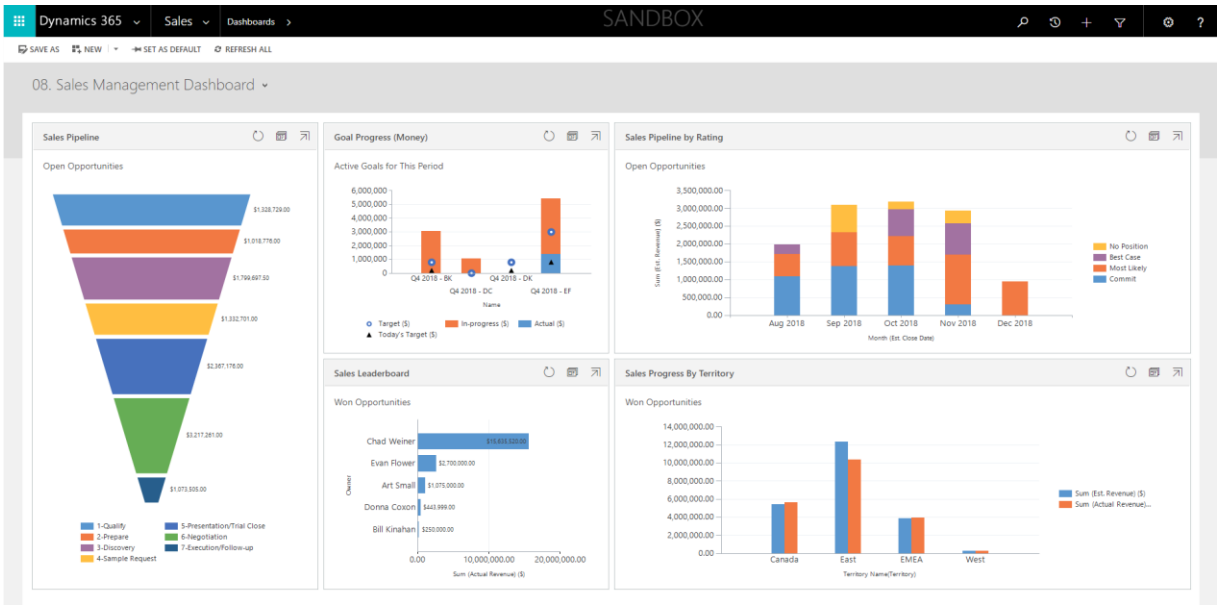
Lead Management	Prospect Management	Product Management	Contact Management	Invoicing System
SMS Marketing	Tasks and Event Management	Loyalty Management	Quotation Management	Reminder
Project Management	To do Task	Email Marketing	Report	User Module

Source: https://www.asalta.com/crm

For the business itself, this is an opportunity to coordinate and manage separate structural units within the company. On the other hand, this system enables businesses to create and manage a complete portfolio related to the client. This system is a powerful tool to find, store and process detailed information of both existing and potential clients. It is tailored to customers' needs and copes with processes that provide a result-oriented, effective relationship between the company and the customer.

[11]Maisuradze G. "Project Management - Using Modern Information Technologies". GTU, 2020 Tbilisi

Using this information in a simple and flexible manner, the required information is placed on a single dashboard, which helps us in the process of visualizing large pieces of information, complex perception and decision making.



Source, sales management: https://www.alithya.com/en/insights/blog-posts/how-sales-leaders-use-dashboards-to-measure-goal-progress-with-microsoft-dynamics-365

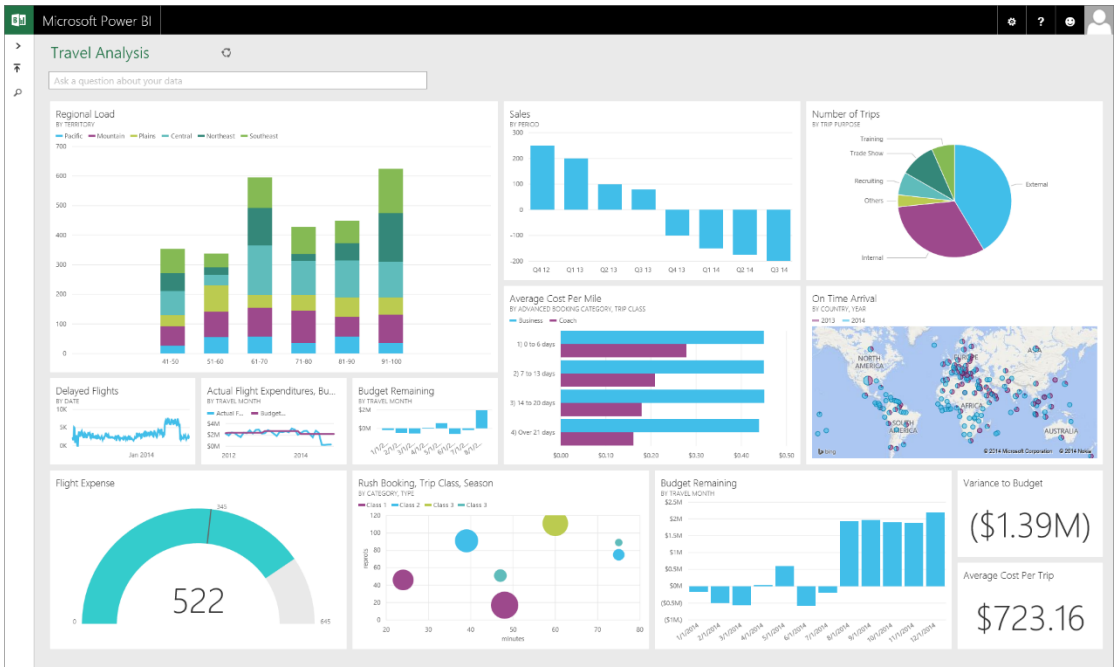
In order to gain a competitive advantage, when the main value is the customer, their satisfaction and medium and long term loyalty, having this system can be vital for the company. Using the CRM system, they study customer requirements, classify and (through the automation of marketing and sales modules) make the right offer to the target audience of customers[12].

One of the most important components in digital processes and represented systems that integrates infrastructural, instrumental and best existing practices for business decision-making is the BI - Business Intelligence System.

The basis of above mentioned system is to accumulate information. It is a field of interdisciplinary research based on statistics, applied mathematics and artificial intelligence. The BI standard technologically consists of so-called ETL (Extract, Load, and Transform) tool, which is divided into three main phases: the first phase accumulates data. At this stage Data Warehousing system is used; the second phase provides multidimensional data analysis (Datamining, OLAP); and the third phase provides management of knowledge bases (Knowledge Discovery in Data)[13].

[12] https://www.asalta.com/crm

[13] Maisuradze G. "Project Management - Using Modern Information Technologies". GTU, 2020 Tbilisi



Source: https://powerbi.microsoft.com/de-de/blog/new-power-bi-features-available-for-preview/

Owning a BI system allows a company to have thousands of different small or large volumes of information in desired form and feature in real time. We can confidently say that this system is a "heartbeat" for company management.

BI		CRM	IRP	artificial intellect
Reporting: (person per hour)		▪ Complete information is provided and received through online channels	▪ Core Operating program	▪ It became possible to measure the results;
Needed Need:	1 -1.5 hour 0.7-0.20 sec	▪ Contracts, Offers, Insurance, Feedback, Electronic wallet and – all in digital channels	▪ Various modules,	▪ Use of assumptions using complex algorithms.
Analytics:		▪ Electronic signature	• Innovative portfolio management system	▪ Concept „Work from where you want“
Per person: Per program:	1 day Any time	▪ Operations without a visit		

Historically, above mentioned function in the company has been performed by reporting, in this case a person spends tens of hours manually generating reports that where accumulated from different opinions. This might cause the risk of distortion / loss of information or the existence of incorrect data. The main role of BI in the company and business is reporting and analytics, the main effect of which is to deliver the processed information to the required structural units[14].

Department	Report type	Number of people involved in the process	Time spent by one person	Report frequency		Total time	Additional information
				Per month (22 days)	Per Year (12X22)	2,904 hour 363 days	
Reporting	Commercial report	1	2 hour	44 hour	528 hour		analyst
Reporting	supplies	2	1 hour	44 hour	528 hour		analyst
Reporting	Cash flow	2	1 hour 30 min.	66 hour	792 hour		analyst
Reporting	Debtors	2	2 hour	88 hour	1,056 hour		analyst

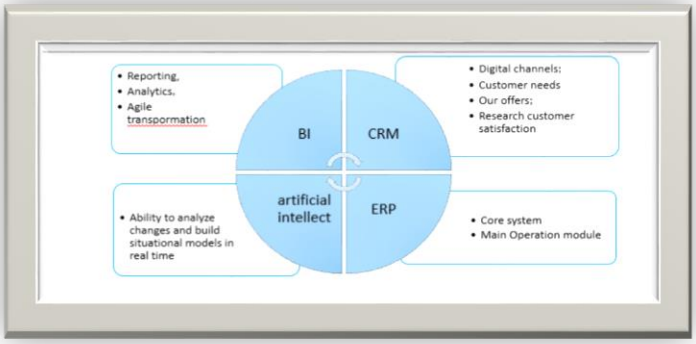
Reporting - after modernization

Digital processes and the use of modern digital systems are very interesting and obvious from the example of TBC Bank, the leader of the Georgian banking market. It has won the Global Finance Award in the category of digital banks that has successfully integrated with the needs of modern consumers and the world.

TBC Personal Banking service has moved to the next level of transformation and introduced an innovative subscription model. The new concept is more tailored to the customers' needs and desires and allows them to subscribe a set of services and products that they want and use often. TBC has been named as the best business and corporate digital bank in the Central and Eastern Europe. In 2020 TBC Business Internet Bank has introduced numerous productive and service innovations, as well as tools that simplify business activities and are similar to TBC's mission - to make people's lives easier[15].

The bank planned adaptation of digital reality into its long-term development years ago and constantly carried out the best modern practices in the company. With digitalization and remote channel development strategy, the bank was fully prepared for the events during pandemic processes and continued to operate without delays. Taking into consideration the scale of the bank especially interesting are the systems and modules used by the bank for the development of the digital ecosystem, on the one hand and the results and customer satisfaction, on the other.

[14] https://bigdataanalyticsnews.com/top-free-open-source-business-intelligence-software/
[15] https://www.marketer.ge/tbc-global-finance-awards-2020/



PRIMARY DIGITAL CHANNELS		Fund correspondence of international financial institutions
90.6% +2.3pp Offloading ratio	37.0% +5.6pp Mobile Banking Penetration	43.7% +3.3pp Mobile and internet banking service penetration
HIGH LEVEL OF EMPLOYEE SATISFACTION		
66% +11pp ENPS	87% -4pp Employee Engagement Index	
TBC Bank Management report 2018		

Source: Management Report https://gse.ge/upload/TBC_2018_961b3763.pdf

Source: results of a survey conducted in the retail service segment in December 2018 by independent research company "IPM"[16]

The Bank continues to grow steadily in terms of digital transformation. The offloading ratio was 90.6%, which is 2.3 pp more than the previous year and which is mainly due to the increase in transactions in mobile banking. During the same period, the penetration rate of mobile banking services increased by 5.6 pp and turned out to be 37.0%. Strong growth is maintained in terms of sales through digital channels, which in December 2018 amounted to 45.3% of total sales.

The bank has created an unprecedented ecosystem mainly for business – www.businesstool.ge that can easily connect technology product suppliers and product seekers. Businesses working in different fields have an opportunity to discover and evaluate different types

[16] https://gse.ge/upload/TBC_2018_961b3763.pdf

of software created in Georgia, in one space: soft, application or solution. They currently offer up to 70 software[17] as they are a priority for the business.

In May 2018, TBC Bank launched Georgia's first fully-digital bank, Space. A cutting edge mobile application for managing daily finances, which offers customers a unique customer experience through simple procedures and products, intuitive design. "Space" is becoming more and more popular and attracts new customers.

In 2018, TBC Bank was the first in Georgia to launch an Agile transformation project throughout the company, which aims to create a more flexible and efficient organizational structure. In 2019, this project was spread throughout the bank, today the bank already operates on the principle of Agile[18]. TBC Launches Agile Transformation with Mckinsey. Agile, which is a new method of operation to simplify working process, narrow bureaucracy and grow efficiency. Agile is a modern operational system adapted by the world's leading companies. This system grows professionalism of staff and promotes attainment of best outcomes. The principle of Agile calls for unification of employees with various competencies around the same project, making focus on specific tasks and expanding their independence. Working under the Agile structure differs from other standard structures. Leagues, teams, legions and knowledge centers will replace directors, departments and divisions.

The technology company has developed the concept "work wherever you desire", which allows employees to work from anywhere in the country despite pandemic processes and self-isolation.

Conclusion

We can conclude that digital transformation and digital processes have no alternative in modern reality. Pandemic events throughout the world have shown us how important it is not only for business, but also for state institutions to invest in innovative technologies and digital transformation. One of the most important ways to save a business and the most important component of a strategic business plan for the future is digital transformation and digitalization. Companies that analyze what they really need during this period and implement adaptive, information-safe and secure systems based on studying past mistakes, will receive appropriate feedback in the long term and will be able to minimize risks and reduce costs. It is likely that after the post-pandemic period, adaptation to the above mentioned changes will become even more important considering competition and globalization processes.

[17] https://www.tbcbank.ge/web/documents/10184/314504/CSR-19+geo.pdf/4f5e0f3f-2bb5-48d9-9b22-56a23b415678
[18] https://gse.ge/upload/TBC_2018_961b3763.pdf