Chapter

ROBOT APPLICATION IN INSURANCE

The word *robot* comes from the Czech language, where *rob, robota* means work. The first time it was mentioned by a Czech writer Karel Čapek in his play (R.U.R.) in 1920, whose premiere was in 1921. It is considered a classic piece of the science-fiction genre. The plot is situated in the near future in which the company Rossum Universal Robots (R.U.R.) manufactures android servants. Later androids raise a rebellion and destroy humanity.

1. DEFINITION

A software robot or bot is an intelligent software agent, which often includes elements of artificial intelligence. It is a program or part of the program, enabled for autonomous, flexible, dedicated operations and reasoning, with the aim of fulfilling one or more tasks. Software agents are designed that way they can react to an external stimulus from the environment they are in, as well as to the actions and behavior of the system's users. When there are more agents in a certain system, individual software agents may react together for the purpose of performing a specific task.

An English term for the software robots technology is Robotics Process Automation, so we also use the abbreviation RPA for this technology very often. RPA means using the software at the level of a desktop computer, with no programming, only by configuring software tools for the purpose of freeing workers from monotonous and repetitive tasks. This slightly reminds one of the works with Excel macros but unlike them, which can only operate in Excel, software robots can work simultaneously in more different information technologies and perform various tasks, such as opening applications, clicking on appropriate buttons in the application, copying data from one application to another, sending e-mails, etc.

RPA has evolved from several different technologies: industry robotics, digital personal assistants and software for managing business processes. The main aim of RPA is replicating the interaction of human with user software.

A bot, as well as a hardware robot, has a role to replace humans, but in this case in a virtual business. A bot can cruise independently through the Internet, make

fake user accounts, send e-mails, use chat, moderate content of a website, attack Internet sites, and so on.

Robot classification

There are more possible classifications of robots by different categories. In the following part of the paper the most famous classifications will be explained.

Robot classification by function

The Internet bot is integrated in the website and simulates human behavior. It is most often applied for advertisements, spam, technical support to the user, online learning assistance, and so on.

The most common Internet bots are the Chat-bot and Spam-bot:
➢ The Chat-bot is trying to imitate a chat partner. Well-intentioned ones are usually used as a technical support for a specific product in order to help the user gain the necessary information more easily. They almost always introduce themselves as a bot in order to draw users' attention that they are talking to a machine. They have a significant application in education, where they can take on an instructor or lecturer's role. Malicious chat-bots usually do not want to be discovered as a machine but their aim for users is to think they are communicating with a human. They mostly have a purpose to advertise a certain location on the Internet and direct the user to visit it.
➢ The Spam-bot fits in the category of harmful software and may be used to advertise a product or a certain location on the Internet or harm a particular Internet page or user. It can create an account on an Internet page, most frequently on forum and leave there a great number of messages defined in advance or may have a task to distract normal discussion among users making it less comprehensible and harming the rating of that Internet page. As one of the best ways to protect from spam-bots is so-called captcha, an interactive system which determines whether the user is a human or a bot.

The Game-bot is used in computer games where it imitates the player's opponent. Well known examples are computer chess and strategy games with more opponent parties. They are also widely used in team games, such as Counter Strike, where when a team needs another player, the bot takes on the player's role.

Robot classification by autonomy[1]

The Attended RPA means that human role is still crucial. Almost whole business processes can be performed with the aid of robots, with very little human intervention, which usually boils down to managing exceptions. However, an employee has a task to start the robot. In that way the robot does part of the repetitive works freeing up the time in which the employee can do creative and interesting tasks. By using robots, the employee is freed from tedious jobs that affect the fall of his motivation.

The Unattended RPA offers programmed mechanism in advance by which a robot is called from the server when a certain event appears or at time it is necessary for completion of a specific task. Upon task or tasks in the waiting queue completion, the robot, by in advance programmed rules, returns to a waiting regime. Here human role practically does not exist anymore.

Robot classification by role[2]

The Robot Development Tool is used for defining instruction sequences which will be carried out step by step in order to complete the business process. These tools may be applied by the users who do not have any programmer knowledge. They often contain the process recorder which records what a human is doing and then replicates it. The best known are Automation Anywhere and UiPath.

The Robot Controller is on the server supporting operational management by assigning appropriate roles and permits to users but also to other robots, and providing control mechanisms for updating, testing and approving within the process. Likewise, it assigns tasks to other robots and reports about their results.

The Software Robot is on a personal computer and performs defined activities through interaction with user applications and modules of the information system.

2. THE CONCEPT

Although they cannot be seen, software robots are already implemented practically everywhere[3]. They manage the Internet search, choose

---

[1] Adžić, M. (2018). Roboti u službi produktivnosti i kreativnosti
[2] Kožulj, G. (2018). Moćni pomagači smanjuju troškove poslovanja
[3] Kells, D. (2017). Robots have arrived in the insurance industry. Are you ready?

advertisements shown on the Internet for every individual user, regulate temperature in the offices of business buildings, remind one of birthdays, provide instructions for navigation, help as personal assistants in mobile phones, and so on.

At a current level of development of this technology, robots most commonly perform the following activities:
➢ Open applications and log into them;
➢ Copy and transfer data from Excel files into the information system;
➢ Copy and transfer data from the information system into Excel files;
➢ Transfer data from one segment of the information system into other segment made in some other technology;
➢ Extract data from a document, for instance from the invoice and enter them into the information system;
➢ Open e-mails, recognize data and enter them into the information system;
➢ Transfer files from personal computers to servers;
➢ Gather data from the Internet;
➢ Perform simple calculations and
➢ Create reports.

Robots usually communicate with a user interface of an application, which is a huge advantage of old systems, with which one practically cannot communicate because of outdated technology. With modern applications, robots have possibility for communication via API (Application Programming Interface), which is more complicated for implementation but it gives them much bigger flexibility and resistance to the changes of the user interface.

The characteristics of RPA

Major characteristics of software robots are:
➢ Low costs of implementation as there is no need for coding nor engaging programmers,
➢ During robot installation in the information system there are no changes of existing applications and processes,
➢ Robot is relied on the existing functionalities of applications and the existing way of employees' work is preserved so there is no employees'' reluctance to RPA introduction.

The mentioned characteristics enable big and fast ROI (Return of Investment), resource optimization, higher employees' efficiency and productivity, lower costs, fast way of resolving an increasing number of requests along the lines of increasing bureaucracy for which human intervention is not necessary, incessant

4

execution of an automated process and a lower operational risk in everyday business.

RPA specificity in relation to other ways of process optimization

An important characteristic of software robots is that they do not change an IT infrastructure of a company nor do they require any changes in the existing applications. Instead of that, a robot, like any other employee, uses available IT resources, but significantly faster and more efficiently.

Unlike traditional process automatisation, which changes the process, unites specific steps, add second and eliminates third steps, robots do not affect the process. RPA changes only the presentation layer of the information system; it builds itself onto the existing system. That is why a detailed analysis and description of process phase is not necessary, on which, usually in process optimization, most resources are spent, so the implementation of RPA technology is much faster and cheaper than other ways of process improvement.

Bot introduction pays off very quickly, that is the research[4] says that the investment return is in six to nine months,

RPA may be introduced in phases, by automating processes one by one, without any required order of implementation, which is usually not possible with traditional process optimization. Usually simple processes in smaller company sectors are optimized first and then they are applied on the whole company. After initial success, automation could continue onto more complicated processes.

The integration of parts of automated processes via RPA is almost invisible for other parts of the system, which is another advantage over other ways of optimization.

Testing is easy as the robot does completely the same as human, but more efficiently. It is easiest to let the robot and human do the same tasks in a parallel manner and then compare results.

It is known that a great percentage of software projects fails in the development phase and never gets implemented. The most common reason is a long period of application development in which requests and needs of the ordering party

---

[4] Sridharan, B. (2018). Robotic Process Automation in insurance. How is it different from its predecessors?

change, which additionally extends programming time, so that one never gets to the point when the application can do what the ordering party needs. This does not happen in RPA projects owing to prompt implementation which lasts several weeks, unlike traditional projects whose length is measured in months, often in years.

Risks of robot application

Like any other technology RPA also carries specific risks with it[5]. When define strategies for future robot application one should avoid the following risks:

➢ Non-standardized software robot application
In a great number of cases, the configuration of applications, database and network should be slightly modified so that a bot could work maximally efficiently. Full potential of RPA is not often used since for instance, instead of placing data in the database, which the robot takes from several systems, they are placed in an Excel file, as the database does not get modified so that it could accept those data. Then every employee transforms that Excel file in their own way instead of getting it processed in a standardized and uniform way in the database. Finally, instead of one truth based on the data coming from the central database, employees have their own reports and truths which are often mutually contradictory.

➢ Robots may slow the improvement of the IT system
In case of a need for change of the information system, non-standard data processing with individual users become a great barrier to progress. Unlike humans, who accept small changes easily, every, even the slightest change leads to the "cracking" of a software robot. Robot introduction is often undocumented or not documented well enough so no one knows what will happen to bots when something changes in the information system or IT infrastructure, and as it is well known, changes happen almost daily: patches, updating, modifications due to regulatory changes, changes of data format, etc.

➢ Too wide RPA application at the start of the project may jeopardize success
Risk from vast robot application at the start of the project may lead to the expenditure of all the resources on implementation and managing the big project, before confirming the investment pay-off. In case of even minor weaknesses, the whole project is in danger of failure as there are no free resources for corrective measures. It is much better to start with RPA application on a limited number of tasks and then expand the project when the first successes are shown.

➢ Conflict of interest with process owners

---

[5] DeBrusk, C. (2017). Five Robotic Process Automation Risks to Avoid

Process owners sometimes do not have interest to get their process automatized as then they are in danger of losing people; it is known that in bureaucratic corporations the importance of managers depends on the number of people under their responsibility. Because of that, decisions on introducing automatisation should not be made by managers from business but run from one center as any other IT project.

➢ Bots do not solve the problem of an outdated information system[6]

RPA shows immense success in interaction with legacy IT systems, with which it is almost impossible to establish interfaces. Bots can improve company productivity but cannot solve essential problems of the company which has the information system based on obsolete technology. On the contrary, an illusion may be created that it is not necessary to invest in new IT infrastructure, which can later result in huge IT costs or even cessation of business.

Apart from the mentioned five specific risks for RPA, it is also necessary to manage standard risks which occur when introducing other technologies:

➢ Operational risk

In order to avoid employees' fear of losing their job with robot introduction as well as their possible sabotage of automatisation, it is necessary to communicate the aim of the RPA project clearly. If the employees understand that robots will be a tool for making every day routine tasks easier instead of a competitor for a job, there should be absence of negative reactions.

➢ Compliance risk

The managers of the RPA project should have a list and documentation about all the installed robots in the company, in order to avoid that forgotten robots bring chaos into the data and processes. That is why it is important to know that every robot is a tool for aid to a particular employee, not his replacement, so the responsibility for the results still lies on the employee.

➢ Risk of data quality

In case an employee enters non-quality data into the information system no robot can correct that. Actually, non-quality output data will be generated faster than before. A bad quality of input data may make robot investment meaningless.

➢ Ethical risk

In modern companies, balance between investing in technology and employees is being made. RPA avoids risk of destroying employees' morale

---

[6] Bloomberg, J. (2018). Why You Should Think Twice About Robotic Process Automation

by huge investment in technology, as it can be considered both investment in technology and staff because the employees get assistants.

3. POTENTIAL ROBOT APPLICATION IN INSURANCE

The most common RPA application in insurance companies is in the processes of: underwriting, claims processing, data analysis, integration of different segments of the information system and contact center. Nevertheless, for maximum optimization of these processes beforehand standardization of the existing data processing, performed by employees, is needed.

Underwriting

The underwriting process requires gathering a huge amount of data from several diverse sources. Considering that process in property insurance often takes several days, sometimes weeks, it is obvious that there is room for its optimization. Robots can much faster gather all the necessary data from internal and external sources for issuing one offer or policy. According to the analysis of a big American consulting company Accenture[7], by RPA introduction into this process it is possible to free 20-30% of employees' time for other tasks, alongside with improving the quality of the gathered data.

Policy cancellation, as part of underwriting process, is very suitable for automatisation aided by a robot, considering that usually for a policy cancellation the interaction with a module of the information system for policy administration, e-mail client, the CRM module, and Excel and pdf files is needed. RPA can do all the necessary activities for policy cancellation, with no employee intervention, very quickly and efficiently.

Data analysis

An old proverb says that in order to improve something, it must be measured. Considering that insurance is a very complex activity, process analysis and measuring their performances is necessary.

By robot introduction, detailed metrics on the executed transactions in every step of a process is achieved, and with it possibility for additional improvements of individual steps, as well as the whole process. Apart from that,

---

[7] Johnson, D. & Whatling, Ch. (2016). A Holistic Approach to Insurance Automation

by RPA introduction the improved possibility of tracking every separate document which runs through the system is achieved, which is particularly useful for internal and external audit and the insurance supervisor.

The integration of different segments of the information system

Numerous insurance companies have diverse segments of information systems, which, because of different technologies in which they were created, mutually cooperate and exchange data with difficulty. RPA can help in overcoming that problem acting as a mediator among the segments. By bot introduction which automatically communicates with all segments of the information system, a user gets an illusion that all segments are integrated in one system, as he requires and gets everything through one point – robot.

Contact center

In big contact centers of insurance companies, where one operator most often works with a great number of applications, so the job is rather intensive, RPA can help a lot. Robots can replace humans in processes of gathering data from different sources, presenting consolidated reports and entry of data in information system database. Contact centers, especially bigger and more complex ones, have been a real starting point for unambiguous proving how much RPA can really help in the working process.

Claims processing

The process in which the most different documents in insurance are used is claims processing. The fact that documents come from many sources especially slows the process down. It is logical to begin this process automation from the very start, which is from a claim report. The research[8] says that with the aid of robots it is possible to halve the required time for a claim report. Likewise, in the process of claims liquidation, RPA can help a lot with increasing efficiency.

In most insurance companies, the number of claims has a trend of growth while the number of employees in claims processing stagnates or grows much more slowly than the number of reported claims. After a while, because of the mentioned trends, the company usually faces the impossibility of a prompt claims payout. Apart from avoiding this unpleasant situation for the insured and the company, robot introduction in claims processing significantly accelerates

---

[8] Mittal, V. (2018). How RPA is re-inventing the insurance industry!

claims solving and payout, which increases the satisfaction of the insured and brings a competitive advantage in the insurance market.

One example of relatively simple claim processing of travel insurance from practice[9] will be shown in detail, in which real advantages of using RPA technology will be seen.

Before automation the process of claims processing lasted 20-40 minutes by claim and it looked this way:
➢ The administrator receives a new claim report in a pdf file by e-mail. The e-mail client is customized so that it forwards these messages to the appropriate folder;
➢ Then the administrator transfers the pdf file with the claim report into the folder over the network which serves as a queue of claim reports waiting for processing;
➢ The administrator opens the oldest claim from the queue, copies the policy holder's code into the module of the information system clients and finds the data;
➢ Open the claims processing module and from the module on the clients copies there the name of the policy holder, date of birth, personal ID number, address, number of the claim, current account number, and so on and enters, as an attachment, the pdf file with the claim report;
➢ Calculates the amount of indemnity;
➢ Transfers the pdf file with the claim processed from the queue into another folder which contains settled claims waiting for a payout;
➢ Sends an e-mail to the finance sector informing them that in the folder with the settled claims is a new claim ready to be paid;
➢ By lunch processes about ten claims and goes on break. Upon return notices that ten new claims reports have arrived and continues the same work.

By robot introduction the process will go through significant improvements and accelerate from 20-40 minutes by claim to only 4 minutes by claim. The automated process would look the following way:
➢ The administrator receives by e-mail a new claim report in pdf file. Then he starts the robot;
➢ The robot transfers the pdf file with the claim report into the folder on the network and does much faster all the described activities done by the administrator;

---

[9] The Lab Consulting (2018). RPA in insurance – robot process automation in insurance claims processing

➤ The robot processes one by one claim from the waiting list and by lunch it has finished everything. When the administrator returns from lunch he notices that the robot has also processed the ten claims which arrived in the meantime;

➤ The administrator only has to observe whether a specific case has appeared, the one which the robot cannot solve, take it over and process it like before.

In the first case, claims keep piling up and the insured is dissatisfied by the stalling of the claim payout, while with the aid of a robot, every claim gets settled on the same day it gets reported.

4. EXAMPLES OF RPA TECHNOLOGY APPLICATION IN INSURANCE IN PRACTICE

It is possible to devise a huge number of projects for robot application in insurance, but apart from theoretical concepts, certain solutions have already been implemented. In the further text there will be more about several real examples in which this technology is applied in the insurance field.

Zurich Insurance (ZI)

ZI is a Swiss insurance group whose annual premium is around 64 billion American dollars. The British company specialized in RPA, Blue Prism, has significantly improved the process of concluding international property contracts in the company Zurich Insurance. Before RPA implementation it took for about four to five hours to do about a thousand activities in order to conclude an international property contract. By robot introduction in process, reducing performance time to about an hour was achieved, as well as significant reduction of efforts invested by employees in all the steps of the process.

Farmers Insurance Group (FIG)

FIG s an American company which is a part of the Zurich Insurance group. The American company Pegasystems has introduced RPA in the Farmers Insurance Group with the aim to improve the process of issuing offers for small and medium enterprises. The result of the implementation, which lasts one year, is really impressive. Instead of 14 days, needed before for the agents to complete an offer adjusted to specific needs of a smaller company, by robot introduction, the process was shortened to about 15 minutes and the FIG soon doubled its market share.

Prudential Financial (PF)

PF is an insurance group from the USA whose annual premium is about 54 billion American dollars. In this case the company Blue Prism was also involved, this time on RPA implementation in improving the process of claims payout. For every claim payout, it was introduced for the robot to automatically search whether the indemnified party had more policies, check the regularity of the policy number and whether the policy was somewhere vinculated or pledged. The implementation lasted only three months but it brought big savings to the company due to the prevention of wrong claims payouts.

Case study: robots in the company Xchanging[10]

Xchanging is a big British technology company with more than 7.500 employees, whose annual income is over half a billion euros. It offers services in 15 countries in different industries, among other things in insurance, too. In the last several years it has had mutual investments with Lloyd's of London in the companies Ins-sure Services and Xchanging Claims Services, in which it holds 50% share each. Ins-sure Services provides support for complete policy issuance and administration for Lloyd's of London while Xchanging Claims Services supports the process of claims settling. Xchanging has provided an IT platform through which about 2 million transactions are executed a year, processing the policies and claims in the amount of over 60 billion euros.

Four years ago, Xchanging achieved huge success by RPA technology introduction in its activities. In this case study, robot implementation in the insurance activities of Xchanging will be described in detail, as well as the experience gained in that process.

The researchers, who dealt with studying the efficiency of insurance companies' administration, concluded that the following six factors provide their good quality work:
1) Employee centralization from administration in one place,
2) Process standardization in all business units,
3) Process optimization in order to reduce mistakes,
4) Moving to a location with lower property and earnings expenses,
5) Introduction of business digitalization and
6) Services automation.
Xchanging has decided to implement automation through RPA technology.

---

[10] Willcocks, L., Lacity, M. & Craig, A. (2015). Robotic Process Automation at Xchanging
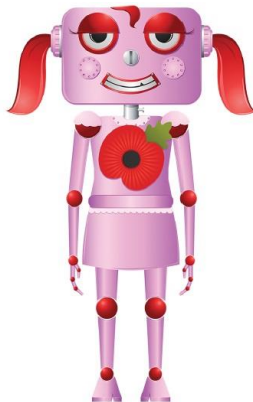
Implementation

The aim of RPA technology introduction was cutting costs by 20-40%, a faster, more efficient and reliable task completion and improving the quality of service. The software of the company Blue Prism was selected, which can be implemented in a few weeks, with no need to hire expensive IT specialists.

At the beginning, ten processes were selected as candidates for automation, by the following criteria: the processes are completely standardized, a great number of transactions are processed, there are simple and clear procedures by which the processes are performed and that takes a long time to be done in the same way.

A team of 20 people was formed, ten from business and ten from IT. At the start, the team dealt with projecting the architecture of the system, software support and training employees who would be using the new technology. Then the team dedicated their time to the key task - testing, in order to draw maximum from available RPA technology. When a tested module, efficient enough is achieved, it can be multiply applied in various processes which are being optimized.

Image 1 Artistic visualization of the software robot named Poppy, with the aim of easier acceptance of robots by Xchanging employees

Source: Willcocks, L., Lacity, M., & Craig, A. (2015). Robotic Process Automation at Xchanging, *The Outsourcing Unit Working Research Paper Series (15/03)*, The London School of Economics and Political Science, London, UK

The initial implementation comprised four processes and the first robot named Poppy, shown in Image 1, and then another nine robots were introduced. Poppy carried out the tasks fast and efficiently while people dealt with specific cases and exceptions from the standard procedure, which occasionally appeared.

In the initial phase of implementation it was noticed that robots did the tasks multiply faster than humans, except in cases when web applications were used in the process, where speed did not depend on the robot only, but the traffic on the Internet, as well. Likewise, at the beginning of the implementation the employees increased their mutual communication by e-mail pretty much, which was interpreted with initial concern that robots would possibly destroy their jobs. During the project the number of messages returned to the average value.

After initial success with the four automated processes, additional six processes were robotized and all the operators aided by robots completed the advanced course. Statistics showed that in the new way 70.000 cases were processed a month, of which only 7% were performed by humans, because of specificity these cases had.

Disaster recovery option was introduced for every robot – an identical copy of the software, but on other location.

At the end of the project, the Xchanging implementation performances of the automation of the insurance company administration aided by the Blue Prism software for support of robot work were:
➢ Number of automated processes: 14
➢ Number of transactions executed by robots monthly: 120.000
➢ Number of robots: 27
➢ Average cost reduction by process: 30%
➢ Number of employees replaced by robots: 0.

Lessons from this case study

The key factors which enabled Xchanging to succeed in its process automation are:
1) The management had a culture of adjusting to changes;
2) Involving own employees from IT in the project ensured good fitting of RPA technology, for which business is usually only accountable, with the existing IT environment;
3) Robots were conducted with their own forces.

In the implementation process, numerous myths were demystified, which at that time were related to robots:

➢ Myth 1: RPA is used as replacement of employees by technology
  Truth: the number of employees was not changed, but their working capacity was increased
➢ Myth 2: the employed in administration feel threatened by robots
  Truth: In Xchanging the employed were satisfied when aided by robots in performing everyday tasks
➢ Myth 3: RPA will return job posts from off-shore zones
  Truth: All the employed remained where they were
➢ Myth 4: The main reason for RPA introduction is cutting costs
  Truth: Cost reduction in Xchanging was only one of the reasons for robot introduction. Robot implementation brought numerous benefits to the company: the quality of service was better, mistakes reduced, time of every activity completion was shortened, scalability was provided, business compatibility was increased and strategic company positioning in the market was present.

Lesson 1
RPA project requires a sponsor, the project champion and efficient management of the project. The project sponsor from the management spends about 5% of time on robots implementation, but his role is very important for success as one's reputation is part of project promotion, as well as authority to move things which go more slowly than the plan. The project champion is wholly dedicated to the project and its success practically depends on the nature of his engagement. Considering the size of the project and the number of the involved people, it is necessary to use a formal technique of project management.

Lesson 2
The developed culture of accepting innovations and new technologies in a company speeds up the implementation.

Lesson 3
Project management should be divided between IT and business.

Lesson 4
Process standardization and stabilization should be performed before the implementation. It is important to do selection of the processes which can be automated. Those should be mature processes, which underwent the necessary phases of improvement in the past. It cannot lead to project success if robot is configured once and then later, after a short period of time, reconfiguring and when possibility for process improvement is noticed reconfiguring again, etc.

Lesson 5
The selected realization of RPA technology should fit into the IT architecture.

Lesson 6
It is necessary to enable the internal resources for the implementation of RPA technology, especially for the purpose of further development and improvement of the implemented technology.

Lesson 7
The optimal solution requires enabling all the robots for performing all the tasks. Expanding the abilities of an individual robot is simple and relatively cheap and it enables fast and flexible relocation of all the robots to the tasks which are the most numerous at that time or have the highest priority. In that way is avoided the situation that some robots work only occasionally and others are overloaded.

Lesson 8
It is needed to pay special attention to the internal communication with the employees. If a strategy of openness about the changes in business is adopted, there is an internal intense communication about plans and then about the progress of the process automation, the employees resist the changes less and are getting involved in the process of robot introduction more. Naming the robots also helps employees accept them easier as assistants and coworkers when doing the job.

The success of the implementation at Xchanging was definitely confirmed when the employed started suggesting additional tasks in which they could be aided by robots.

5. ROBOT DEVELOPMENT IN THE FUTURE

The key factors which impose a need for cost reduction in the insurance market are:
1) Unfavorable macroeconomic conditions – low interest rates, low growth of GDP and high unemployment;
2) Vast changes of the regulation in the last ten years – Solvency II, IFRS 17, and so on;
3) Increasing insurance frauds;
4) Modern clients require introduction of advanced technology in insurance.

Software robots are, along with the Internet of things, Blockchain technology and artificial intelligence, in the last several years, often mentioned as a great potential for modernization and process improvement in the insurance field.

The aim of robot introduction is business optimization through acceleration of business processes, and by that cost reduction in business. In the world, there are already examples of successfully completed projects in insurance companies, and several examples have been described in this paper.

Image 2: Trend of RPA development in the future

Source: http://www.ncstech.com/content/process-automation
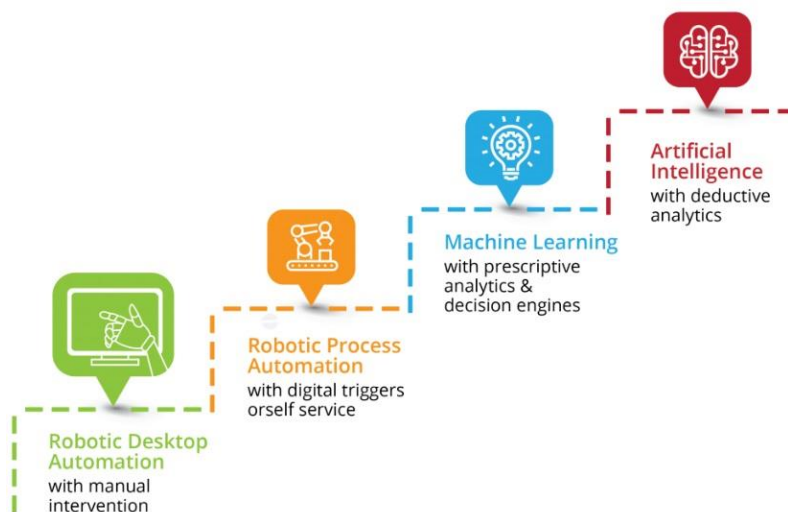
Although RPA has already brought huge improvement of everyday business activities of the employed, in the next period robots will continue to develop, as shown in Image 2. Special benefit will come with the introduction of artificial intelligence components in robot work. Using robot applications in all the aspects of business will significantly increase in the following years, freeing the employed more and more for creative activities and interaction with clients.

LITERATURE

1. Adžić, M. (2018). Roboti u službi produktivnosti i kreativnosti, Saga, Beograd
2. Bloomberg, J. (2018). Why You Should Think Twice About Robotic Process Automation, www.forbes.com

3. Council, G. (2018). What is Cognitive RPA, and Is It the Future of Document Automation?, Parascript, USA

4. DeBrusk, C. (2017). Five Robotic Process Automation Risks to Avoid, MIT Sloan Management Review, Cambridge, USA

5. Johnson, D. & Whatling, Ch. (2016). A Holistic Approach to Insurance Automation, Accenture, UK

6. Kells, D. (2017). Robots have arrived in the insurance industry. Are you ready?, KPMG, Australia

7. Kožulj, G. (2018). Moćni pomagači smanjuju troškove poslovanja, IV CFO konferencija Deloitte, Zagreb, Hrvatska

8. Mittal, V. (2018). How RPA is re-inventing the insurance industry!, www.medium.com

9. Pavlović B. (2019), Robot Usage in Insurance, XVII međunarodni simpozijum „Osiguranje na pragu IV industrijske revolucije", Zlatibor

10. Schatsky, D., Muraskin, C. & Iyengar, K. (2016). Robotic Process Automation – a Path to the Cognitive Enterprise, Deloitte University Press, USA

11. Sridharan, B. (2018). Robotic Process Automation in insurance. How is it different from its predecessors?, Capgemini, Paris, France

12. The Lab Consulting (2018). RPA in insurance – robot process automation in insurance claims processing, The Lab, Houston, USA

13. Willcocks, L., Lacity, M., & Craig, A. (2015). Robotic Process Automation at Xchanging, The Outsourcing Unit Working Research Paper Series (15/03), The London School of Economics and Political Science, London, UK