

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
ВНЗ «УКРАЇНСЬКИЙ КАТОЛИЦЬКИЙ УНІВЕРСИТЕТ»

Факультет суспільних наук

Кафедра управління та організаційного розвитку

Магістерська робота

на тему : “Internal Training Program for Employees’ Technical Proficiency  
Improvement at JustAnswer Ukraine”

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Львів 2020

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## INTRODUCTION

HR together with Learning and Development need to keep pace with corporate goals. The HR team at JustAnswer Ukraine was challenged to design and launch a learning and development program for employees in Ukraine to help executives find ways to improve efficiency, customer satisfaction, and revenue growth with expectation of learners' involvement in product innovation.

JustAnswer is an online expert question and answer website that connects visitors with verified experts in nearly 700 categories. The learning program must take into account external (global and local political, economical, social, technological aspects; industry related, market related) and internal circumstances.

### **1.1. External factors.**

The PEST analysis defined the following impact on the L&D Strategy:

- a) Political Factors: Complications in the immigration policy in the US (decrease of legal qualified immigrants to the State) impacted the need of hiring new specialists in Ukraine (Architects, Data Analysts) and the need to develop specific skills among employees in Ukraine.
- a) Global economic downsize:
  - Production capacity is declining due to quarantine in many countries (for e.g,

in January and February 2020, many manufacturers using parts from China in their production chains experienced a lack of raw materials due to China's travel and import restrictions, which significantly reduced production capacity).

- Exports of goods and services are reduced.
- GDP to fall globally in countries.
- The pandemic and "oil war" are causing a crisis for energy-producing governments around the world.

b) Social factors include the cultural aspects and health consciousness, population growth rate, age distribution, career attitudes. Economical crisis, COVID-19 and the social distancing policy in many countries had shown the increasing social problems:

- Increasing unemployment rate. According to the unemployment reports, solely in the US, unemployment rate jumped to 4.4 percent in March 2020, the highest since August 2017 and well above market expectations of 3.8 percent. The number of unemployed increased by 1.35 million to 7.14 million. In the long-term, the United States Unemployment Rate is projected to trend around 15.00 percent in 2021. Official rate of Ukraine unemployment rate for 4 Quarter 2019 was 8,6%.
- Covid-19 has shown the ineffective medical systems in many countries. In the US and most emerging markets, many people do not have health coverage – which has raised questions about whether they could afford to get tested for the virus.
- Needs to upskill and re-skill for better job opportunities facing new challenges in the 4th industrial revolution. According to The Future of Jobs Report 2018 of World Economic Forum the 4th Industrial Revolution the expected average reskilling needs within 12 months across companies by 2022 is 44% (the current situation with economical downsize and global crisis could increase this rate). Employees and companies, HR departments should be ready to face and prepare for declining roles as well with new increasing ones, new demands to the skills specialists need to develop (soft and tech skills). According to the Report, by 2022 everyone will need an extra

101 days of learning.

- Population burn out, stress of job loss.
- Local Labor market of 25000 IT specialists in Lviv is lacking Senior Engineers on the Lviv IT market -27.9% Senior (in comparison to Middle Software Engineers - 45.5%).
- Competition in the IT market: the demand exceeds supply (this trend is changing with hiring shortage in crisis and increase of applicants' number). More companies are facing the problem of qualified IT-specialists who do not educate themselves further.
- Per the IT research, good salary (99,2%) and the Interesting, diverse job/projects (97,1%) are the most highly valued aspects for IT engineers. The situation is quite like what aspects Engineers are considering the most when considering changing the company (26.5% - high salary; 18.8% - interesting projects and tasks; 12.3% - good team).
- Despite the number of IT professionals relocating abroad is gradually going down, braindrain (flight of highly qualified staff abroad) continues to be a problem.
  - c) Technological factors include:
    - According to the World Economic Forum Report, top 5 technology adoption planned by companies till 2022 are: Big Data Analytics, app- and web-enabled markets, Machine Learning, Internet of Things, cloud computing.
    - COVID-19 will spur rapid technology adoption. Fear of contagion is leading many to abandon cash in favor of digital payments, online market. Social distancing is prompting organizations to embrace videoconferencing, virtual classrooms, and telemedicine at an unprecedented scale.

These all force companies to review their strategy, expenses, business.

## **1.2. Internal Factors.**

The starting point for an effective L&D strategy is to understand not only external, but the internal context of the organization.

- a) JustAnswer business area, culture and values (see Appendix 1).

Industry	Internet
Product/Services	Expert Information, Q&A website in 700 Categories (medical, legal, automotive, veterinary, and tech support, etc.). The website operates by allowing users to ask questions and receive answers from doctors and other experts 24 hours a day.
Locations providing services	196 Countries (having localized services in 7 countries, supporting 38 Currencies).
Year of foundation	2003 (San Francisco, US). Extension to other countries: 2012 -Lviv, Uzhhorod (Ukraine), 2015 - Bangalore (India)
Number of Locations	4
Structure	Lineal
Number of Employees	320 ppl
Average age	Ukraine and India - 27 years. San Francisco - 39 years
Employee Engagement %	78%
Turnover %	16%
Company Values	Humble, Data-Driven, Courageous, Innovative, Lean
Learning Culture	Agile. Open to Learning, learning on the job culture
L&D Opportunities	Dependent on business priority, relies on managers, no consistency. Skills Matrix, Appraisal process, limited employee development plans, formal qualifications. Internships.
Budget Process	Forecasted. Bottom up Approach. Formal process with authorization through two levels.

This creates both opportunities as well as challenges for the company business strategy and product.

b) Company growth.

Since 2012, the number of employees in Ukraine has grown from 12 persons to 180 in 2020. The number of employees in Ukraine became bigger than San Francisco head office has (180 people in Ukraine vs. 78 employees in San Francisco). The Executive team and Senior Leadership groups are in the San Francisco office. In 2015 the Company opened an office in Bangalore, India where it hired at first non-technical specialists (Business Analyst) since it cannot find specialists in Ukraine. Further, in 2019, started hiring software Engineers.

c) Company Vision, Mission and Strategy.

JustAnswer's vision is to be Customers' first choice of professional services.

The Company mission is “We help people”

The business strategy includes:

**Meet New Customers** – by diversifying and optimizing online marketing channels. To achieve this JustAnswer have middle term goals:

- to improve chatbot and AI (a service that you interact with via a chat interface). JustAnswer chatbot development started in 2016 and brought 50,000 Chats a day. The Company needs to extend chatbot usage to different categories and improve customer experience with chatbot (interact through text and voice, human-like conversation, etc.);
- be where the customer needs the most – be prepared today to market future tendencies using opportunities on Virtual Personal Assistants (Ciri (Apple), Cortana (Microsoft), Echo Show (Amazon), etc.).

**Impress Customers** – by improving customer question and answer experience. To achieve this JustAnswer have middle term goals to operationalize premium services (get revenue of 50 million USD); improve response speed, etc.

**Marry** - by expanding services to customers with extending customers' membership, personalization, international services extension, Mobile application further development.

In 2020 with quarantine and social isolation, Justanswer's customer conversion rate improved due to online business and higher demand to get certified doctor, legal consultations remotely (especially in the US). The Company faced both opportunities



and challenges: - unique position on the market (over 14 years in the industry and the services are not harmed with the crisis. Even more, customers not being able to get services in person, reach online services.); - higher demand of getting qualified services put more pressure on developing other areas for growth (AI improvement; customer service improvement; product reliability, continuing extending other markets and geographical locations).

The growth of Software Engineering Group in Ukraine requires a bigger number of experienced specialists in software development, Data Analytics who could make decisions, come up with strong solutions locally without waiting for the headquarter leadership decisions and that means without time delays too.

d) Internal market.

70% of employees in JustAnswer are engineering staff. This is 80% of engineers of the Company. The number of Senior Engineers (37%) remains smaller than Middle ones (47%).

The second biggest group of employees are Business and Data Analysts.

In 2016 Engineers' technical level increased to 36%. That is 4% lower than the previous year and does not meet JunstAnswer needs of more technical growth of Engineers.

Based on internal data employees' needs are:

- technical growth and the need of technical training;
- have connected learning to career growth at JustAnswer and the market trends;
- involvement into some interesting projects outside the delivery teams but within the company.

e) To support JustAnswer business needs, the 3 main focuses in HR strategy are:

- to attract and retain the best talent;
- build the capabilities needed to support business strategy;
- keep continuous development, knowledge improvement, re/upskilling.

### **1.3. The Learning and Development Program Goal and expected outcome.**

Based on the all influencing factors and to help achieve business needs, the Company's Learning and Development program overall project objectives:

- Improve employees' technical proficiency in Ukraine by 60% at the end of the program year via building connected learners blended learning program.
- Increase learner engagement (especially technical leads, leadership team).
- Support and tight program to career growth, performance, and development recommendations.
- Integrate learning into other company programs with involvement of cross-cultural, cross-locational cooperation.
- Based on company culture and values, program should meet the 3 criteria:
  - a) learning through relationships (exchange, collaborative learning where a group of learners meet to reflect on real work issues);
  - b) learning on the job (given that we acquire and develop most of our job specific knowledge and skills in the workplace through on-the-job application and experience);
  - c) training (education

## **CHAPTER I.**

### **THE LEARNING PROGRAM BACKGROUND, ITS COMPONENTS AND REALISATION STEPS**

With changing external environment and business needs the existing learning and development program was not sufficient to support the company achieve its goal - develop skills within the company that would drive it to success, growth.

One of the challenges was to have learning programs on the job that would help not only improve skills required today, but develop skills needed for business in future. Company leadership was ready to invest into the learning program if it would see a benefit and quick impact on achieving short- and long-term strategy (mentioned in the introduction part of this work). Program should be practical and help to improve knowledge by working on project company cannot find time due to company structure and customer projects. Should enable cross office cooperation. But the main business needs were - show a business benefit for giving time for learning.

The challenge was also to develop a program that would motivate people to spend time during their spare time. Was important to find a solution that would help employees to advance in their career, stay in the company.

The Learning and Development program as it was in 2016-2017 needed a change and could not meet that need:

- 1) Were focused only on individual gap analysis based on semiannual performance reviews. That worked well when the company was smaller, but with growth this approach was not efficient anymore and did not bring result in general on company level.
- 2) Had a quarterly 3 days long joined Hackathon in all offices. Hackathons are programming events and the purpose is for a group of programmers to work together on a collaborative project, where several teams are competing to create prototypes that innovate and improve upon an existing project. The program met several business needs: employee engagement to come up with innovative ideas collaboratively and JustAnswer used the most efficient ideas and implement them into life. With time the engagement started decreasing, and the learning effect did not bring result (was hard to measure; people sometimes were limited to use and develop new skills via participation in the available Hackathon projects; very intense problem-solving environment for having time to learn something new and apply it immediately on the Hackathon, so employees mainly used their existing knowledge to innovate).
- 3) Knowledge sharing sessions based on requirements of technical level increase.
- 4) Onboarding trainings.
- 5) Mentorship for newcomers.
- 6) Internship for Software Developer graduates and Data Analysts.
- 7) External trainings on Agile principles.
- 8) Focus on Self managed learning, providing 50% budget coverage and giving 5 paid days for each employee for external training, learning via online resources. Again, that worked well on improving individual knowledge, but wasn't resultfull in general on the company level.

While the plan is to keep part of the above described practices (Hackathons, Onboardings, Internship, Mentorship), we needed to come up with a learning program that would meet the needs described in the Introduction. The important measurement to evaluate of the proposal and selecting the program approach were:

- 1) Relevance: How learning provision will meet new opportunities and challenges for the business; stakeholder needs, market needs.
- 2) Program Alignment to other key strategies such as reward, organizational development, engagement and other aspects of people management.
- 3) Measurement of the program value and success: Return on expectation, link program outcomes to key performance indicators.

It was important also to learn about market practices in Learning and development forecasts on future trends in Learning and Development functions, internal, mobility programs concepts, how corporate training has evolved, building connected learners, etc.

Based on the research, the trending and common approach on the market is balanced face-to-face and digital learning. Employees' expectation to Training as part of the overall experience at work is growing. The era of upskilling and reskilling has arrived.

The Learning and development challenges globally are:

- Personalizing the training (according to LinkedIn learning data, most professionals want learning experience that are social and collaborative and personalized)
- Shifting more to on-line training.
- Driving learner engagement.
- Embedding learning at the moment of need.
- Leaning on department managers and subject matter experts.
- Keep your learning programs relevant to the learner's task and Job.
- Build a culture of workplace learning.
- Different learning habits.
- Costs, costs, and costs.

- Global workforce, cultural differences.

These global trends and challenges also put additional expectation on the program to be ready for the future market challenges.

Also, the project solution was developed based on common theoretical and practical materials: theories of learning Fredrick Herzberg's Motivation-Hygiene Theory, Fundamental Principles of Adult Learning, David A. Kolb's Learning Circle, Millennials learning styles, Neuroeconomic studies, etc. 70/20/10 approach, Theory of cognitive learning way and socio-emotional one.

For that HR together with leadership team of Engineering came up with the idea of a learning and development program that consists:

### **1. Software engineering conference.**

A 5 days face-to-face cross-locational lectures and workshops for Software Engineers, QA Engineers, UX Designers, Data Analysts. It is dedicated time for the teams to work with some of our senior engineering leadership. Includes lectures on technical aspects, brainstorming, innovation, knowledge sharing, presentations of work done. The event happens once a year.

The Conference is business focused with real examples and tasks on how to improve the customer experience. Example of business focus of Machine learning workshop: „If members didn't receive a good answer to their question then they don't have a convenient way to resolve the issue. They can call customer service or post the question again to another expert. Many members would just cancel their membership. Chatbot can be available for the user immediately after we know that the customer has had a bad experience and suggest ways to resolve the issue.”

The learning event was designed with diverse learner needs in mind. The workshop learning includes brainstorming, practical experimentation, role plays, group discussion and problem- solving (Activist learning style), spending time reading around a subject, and watching others try things out (Reflector-style learning). Participants are assigned to one of six possible streams based on knowledge gaps, personal Development goals, scopes of work, feedback and recommendations of participant's direct managers, the current teams' needs, etc.

Why this format of learning? It's enabled to meet: business needs; stakeholders requirements; takes into account company culture and values; allows cross-locational cooperation; is intensive; it's temporary assignments/special projects are flexible, short term approaches to skills development; helps to practice and demonstrate leadership skills. Designed to enhance employees' knowledge or skills in an area or to broaden an individual's knowledge of other functions. It includes action learning in a form of learning by doing. It involves bringing together an ad hoc group of peers with varied levels of skills and experience for the purposes of analyzing an actual work problem, generating solutions, and developing action plans for implementation. The group continues to meet as actions are implemented to learn collectively from the implementation and to make mid-course corrections if required. It is useful for addressing complex organizational problems, determining a new strategic direction, or exploiting new opportunities.

The structure of the conference:

- 1) First day was a 6 hours seminar as learning events that feature subject matter experts delivering information primarily via lecture and discussion. The topics were business and technical related, an introduction to the subject of learning and further days workshop
- 2) 3 days Stream work in workshop format - knowledge is imparted and skills demonstrated by the tutor. The participants work individually and in groups to put the learning into practice under supervision and to gain hands-on experience.
- 3) Morning Voluntary lecture and short workshops so other streams participants could learn about other streams topics too. For e.g, participants who weren't in the Machine Learning stream, but wanted to get more information on this, could come to the announced lectures in the mornings before the stream started.
- 4) presentations of work results. On day 5 each stream presented at the conference to everyone their work, what was done, how it was implemented, etc.

## **2. Online individual and group learning.**

Use online learning platforms on an individual learning based on performance and development plan. HR set up a data basis with learning recommendations

together with line managers based on semiannual and annual performance review analysis. Also includes cross-office online recorded training, webinars. Online learning is playing a bigger part in blended learning programs.

**3. Inhouse Group learning** in format of lunch and learn (career specific trainings in hard and soft skills development)

**4. Improve the job rotation** program. The improvement of the program includes considering the need for rotation and measuring the outcome. Currently rotation worked mainly to promote flexibility of employees and to keep employees interested in staying with the company/organization which employs them. We figured out that rotation can be a tool for learning purpose with investment resources and plan the program according to the organization need and employees development plan. The rotation program was designed for software developers and QA engineers who work in delivery teams.

The results of the learning will be evaluated based on five level of evaluation: At the of the program parts and phases, we conducted evaluations of the program:

- 1) Reaction level - participants feedback on the quality of the course, learning objectives, course material, trainers, facilities etc.;
- 2) Learning level – the resulting increase in knowledge or capability. Conducted after 1 months and 6 months after the Conference ended.
- 3) Behavioural change level – the extent to which participants’ behaviour changed on return to the workplace. For that, we used the input data and compared the performance review results and 360 feedbacks on participants after 4 months of the Conference end.
- 4) Results level – the effects on the business or environment resulting from the trainee’s performance in the workplace (the data were gathered between six and nine months after the program. Prior to the program some baseline should be established with which to compare post-training results. The data for this evaluation should be gathered in a similar manner to that for level 3.

5) Return on investment level - translating the output of the training into monetary value with cost/benefit analysis exercise to determine the return to the organisation on its investment in the program.

The results of each evaluation level described in the Chapter 3.

### **1.1. Program realisation steps for achieving results**

The development of the Program includes several stages in Assessment of learning needs and methods, planning and designing the program, defining who will be the provider of the learning program, etc.

The following steps can be identified:

1. Discover and Analyze the Gaps in knowledge.
2. Design and plan: Design and plan the learning intervention.
3. Deliver: Deliver the training/implement the learning activity.
4. Monitor, Evaluate and improve: monitor, evaluate and improve learning and behavioural impact.

#### **Discover and Analyze the Gaps in knowledge:**

##### ● *Learning Needs Assessment*

1) First we had to collect info on what to learn, who to develop - we needed input data.

We have made Engineers' knowledge gap analysis per the Company levels description. Identifying learning and development needs involves the assessment of employee capabilities alongside an understanding of current or anticipated gaps in knowledge or skills:

- Self-assessment from what we can get individual goals for improvement and growth, areas for improvement, etc.
- 360 feedback on an individual.
- Competency assessments by direct managers, peers.
- Knowledge gap analysis based on Skills Matrix – called Star maps (see Appendix 2) based on that, we assess the level and areas of technical skills improvement necessary for the project (AI and Machine Learning, C#, .Net, JavaScript, Data Base (MS SQL)



knowledge, etc.) and Softskills on the improved performance review process (see the assessment summary in Appendix 3).

During the performance need assessment we came to the conclusion that our performance review process needs to be improved in terms of further employees development plan, soft skills assessment and we need to develop a career path for the company so employees together with line managers can work on the development of the individual based on that picture.

We have segmented groups of people with their expectations to the development (see Appendix 4).

We had changed the performance review process as it was not efficient, for learning the current gap and what to improve. Also, we described the Career path flow. The career path program development process was designed with Senior leadership, considering current and future possible structure by locations. After the preparation and approval of the leadership, the process was shared and discussed with the employees (the career path diagram can be found in the Appendix 5).

2) We considered what the organization's decision-makers believe is needed. This program must be developed with them. From the start, they had a voice in what they were going to learn, how they were going to learn it. For this we consider stakeholders' needs and Feedback.

Summarizing the knowledge gap assessment, the objectives and main requirements of the program are to improve:

- technical skills improvement in AI and Machine Learning, C#, .Net, JavaScript, Data Base (MS SQL) knowledge, etc.) with product focus;
- soft skills: creative problem solving and design thinking, data analysis, leadership and management, communication.

- *Learning and development methods assessment*

We made our learning methods (see Table 1) assessment, considering what resources will be available for us (financial, human resources, learning material and knowledge of specific fields), the availability of external training on the market, the nature and priority level of the learning needs, etc. Considering the above

information, the program is designed with a combination of different learning methods' advantages.

Table 1.1. Learning and development methods assessment

<b>Types of learning</b>	<b>Description</b>
On-the-job training	Delivered on a one-to-one basis at the trainee's place of work allocated time to take place, including potential periods when there is little or no useful output of products or services a specified, planned and structured activity.
Job rotation, secondment, and shadowing	Temporary loan of an employee to another department or role
Courses and classroom training	Formal courses away from the workplace
Action learning and learning projects	Collaborative learning where a small group of learners meet regularly to reflect on real work issues. Its basic philosophy is that the most effective learning takes place when individuals are faced with a real problem to solve.
Outdoor learning	Providers of such activities tend to use a business-focused project methodology that mirrors and reproduces business situations, but which is free from the influence of organizational culture, status, or functional specialisms.
Distance learning and digital	Involves the use of learning materials delivered through the post or electronically. Can provide large groups with consistent material, and access is flexible so that people

learning	can learn in their own time, if appropriate. Against this, digital learning or other forms of distance learning do not appeal to everyone, and tend to be more effective for 'hard' knowledge (for example, IT skills) than for softer skills such as communication
Blended and 'bite-size' learning	
Gamification	The process of applying game design theories to everyday situations, including business.
Massive open online courses (MOOCs)	Free-open access courses available to anyone.
Social learning and content curation	Online collaboration tools which enable employees to learn from each other through sharing material.

We analyzed advantages/disadvantages of external and internal trainings. We also evaluated the effectiveness of previous learning interventions. The rate of external training and learning events is 31%. Per Company benefits, employees can attend external training with reimbursing expenses and giving additional 5 days for learning. However, this benefit did not help and speed up the learning improvement. We asked employees why they did not attend external training attendance. Per the survey "there were no interesting meetings" the reason for 74% of respondents, "Prefer team training" the reason for 19% of engineers.

While analyzing the training options availability and calculating the budget and expenses we faced with the problem of external training methods availability/time frames or cost of options.

- *Clarify the Team*

To develop the specifics and content of the program, we recruited and use a training advisory team among Senior Technical professionals and Direct managers (involving those parties who know the best individual employee training needs and in the best position to see post-training benefits on the job). We recruited 10 experts who were involved on a regular basis with scheduled meetings and 5 specialists on the stage of finalizing the program. The group members were assigned to:

- Evaluate specific training proposals and requests.
- Define training objectives in measurable terms and, design, link training objectives to objectives for the business, personal objectives for participants.
- Ensure that employees complete post-training assessment.
- Assist with pre-course preparation and selection of participants.

Also, with the Training Advisory team we made a SWOT Analysis of the program (see Appendix 6) and communicated the results of it to the Leadership group. This group is crucial for establishing the credibility of training “return” metrics.

**Step 2 - Design and plan: Design and plan the learning intervention. What, When, Who, How.**

Because of absence and costly external training variants, we concentrated

On blended learning: internal training options and online training available on the open resources.

1) Inhouse learning interventions:

- Software engineering conference.
- Inhouse Group learning in the format of lunch and learn (career specific trainings in hard and soft skills development) .
- Rotation program.

2) Online individual (self-directed) and group learning using training courses available on Udemy, Coursera)

The variant of having only virtual and distance learning was rejected by the Sponsors (Executive Team) and Participants (Software Engineering Team) of the project.

The design of Inhouse learning interventions took the most time.

The planning of the conduction depended on the frequency and the size of the event. Since the Software Engineering Conference was tight to time and was the biggest learning event among others, the planning and design started 3 months before the event.

- **JustAnswer Software Engineering Conference (JASEC)**

After a brainstorming session, we decided on a 6 streams', 5-days conference with the following structure:

- 1) A Day of 6 technical Lectures conducted in 6 hours. This is company and problem related high level presentations for employees.
- 2) A morning of prepared, formal 1 hour technical presentations divided into 6 Streams followed by 18 hours (in 3 days) advanced Workshops/Projects on Database Architecture, Backend Infrastructure, Front End Infrastructure, Machine Learning and Natural Language Processing, Mobile, Functional Data Analysis, other advantages with knowledge and process improvement and product innovation focus.
- 3) 2 hours Workshop results presentation.

The Conference is business focused with real examples and task how improve the customer experience. Example of business focus of Machine learning workshop: „If members didn't receive a good answer to their question then they don't have a convenient way to resolve the issue. They can call customer service or post the question again to another expert. Many members would just cancel their membership. Chatbot can be available for the user immediately after we know that customers have bad experience and suggest ways to resolve the issue.”

The learning event was designed with diverse learner needs in mind. The workshop learning includes brainstorming, practical experimentation, role plays, group discussion and problem- solving (Activist learning style), spending time reading around a subject, and watching others try things out (Reflector-style learning). Participants are assigned to one of six possible streams based on knowledge gaps, personal Development goals, scopes of work, feedback and recommendations of participant's direct managers, the current teams' needs, etc.

The Conference was held by 10 in-house Stream Leaders/Presenters (Senior Software Engineers, Architects) – having them travel at a time makes the Program less expensive as well.

The Conference Development includes the following steps:

- 1) Step 1. After defining the format and scope of lectures, practical work (code shops) of the Learning Program, we recruited and selected lectures and Stream leaders. The selection was made based on technical skills, experienced Senior developers, their scope of work and responsibilities. For example, the Machine Learning Stream will be led and conducted by a Technical Program Manager who is responsible for this area at JustAnswer.
- 2) Step 2. After the stream leaders and lectures section we selected the date for the conference and approved both with participants, their managers, product team, other departments and Executive team (as the conference affects the schedule and iteration deliverables of regular dedicated teams). The dates were chosen on company velocity, logistics expenses, etc.
- 3) Step 3. Create a schedule and plan for deliverables of materials (presentation, stream, and workshop design). The regular weekly meeting with the Training Advisory Team and presenters, a workshop was set up. Some of the presenters have no or little experience in such an event that is why mentoring and supporting presenters during the program development and conduction were important.
- 4) Step 4. Conference place, logistics, accommodation, agenda, equipment arrangement.
- 5) Step 5. Promote and share the information, program scope with Engineers.

For communication purposes, we had 5-10 minutes on each biweekly Software Engineering meeting where the Training Advisory Team shared the information about the conference, plan and schedule, how the participants were delegated to streams and what data was considered. We had a question and answer session and answered the Engineers question they had submitted beforehand or asked in the meetings. Also, we sent out emails with the detailed information and links to the frequently asked questions on the intranet, etc.

6) Step 6. Each Direct Manager informs their reports-participants which streams they are on.

- **Inhouse Group learning** in the format of lunch and learn (career specific training in hard and soft skills development) called “Lunch and learn” based on the format of the event - happens in lunch time and participants can take lunch with themselves. Topics are predefined and designed based on company, employees individual or market related skills (that will require further development in the company)

There are several ways to participate as lecturer:

- Being a Subject matter expert in a specific area you are going to speak.
- Learning a topic that is needed for a lecturer development and preparing a training (1 lecture or a serious one) for others in informative and practical format.

Training is cross functional, cross located digital or inhouse, depending on participants.

- **Rotation program.**

The rotation program was designed for each delivery team employee. The duration and frequency depended on the level of employee. For Juniors, the recommendation is to rotate to another team for technical practical knowledge gain 1-2 weeks. The technical team and duration are defined by Manager of the employee together with the employee themselves.

The main principle of the rotation was planned in advance: the line manager and person should be defining what delivery team is best for rotation and contact the target team about the best time for rotation, interested work and what the person can help to improve or conduct. The target team should prepare accordingly tasks for the person for rotation.

- **Online individual and group learning:**

Individual learning program were designed as recommendations for individuals, based on what skills are needed for a particular position, role or to be promoted to the next level (Middle to Senior Engineer, Data Analyst to Data Scientist, etc.) Each employee, based on their performance review assessment,

discussion and recommendations from the Line Manager had the information what skills are needed to be improved among soft and technical skills. The HR Team created a shared platform database on existing online training on the selected online learning platforms (Coursera, Udemy). The training programs were prescreened by responsible experts prior HR sharing it to the employees.

The group online trainings were planned once a week on specific courses for 1-hour basis and 15 min discussion afterwards in the group.

Since among the challenges of digital online training are engagement and dealing with attendees' distraction, we encouraged group sessions having a facilitator internally. For group training we used paid subscriptions as well.

The design of the training interventions can change based on the analysis at the end of the program and if the input data differs (other skills are required for development that also may require different format, etc.).

### **Step 3. Deliver: Deliver the training/implement the learning activity**

#### a) JustAnswer Software Engineering Conference.

For the Conference first day we chose an external conference place closer to the office, while all further days' Stream works will be hosted internally. To have all participants and stream leaders sit together, we rearranged our location accordingly with optimal moves of those employees who will not be involved in the codeshops.

The first day on Saturday of the Conference was in the format of conference with 6 topics of lectures with everyone to participate. The workshop days each team was working collaboratively cross functionally on 1 predefined problem or opportunity. The workshop simulated Agile work process artifacts (daily meetings). At morning or after lunch project groups had lectures of stream leaders on specifics of the subject needed for project delivery (see the schedule plan in Appendix 7).

b) "Lunch & Learn" Trainings. Before the delivery of each training, the lecture prepares a training delivery plan and shares with the responsible HR person and together they may do corrections to the delivery plan. Prior to the training conduction the agenda is shared with employees and also questions, or requirements are collected on the topic. Conduct the event 1/month.



c) Rotation program. During rotation, trainees can work with the rotating team, ask for feedback. The rotation target team prepares tasks for the participant, dedicates a mentor for the participant who is responsible for setting up the technical environment if needed, shares information on the process, meetings, etc. During the rotation program, the participant does not work on his regular team tasks. This is planned accordingly beforehand so does not impact on deliverables and does not create blockers. Rotation program can be distanced. The format should be defined in advance for preparing the appropriate organisations and choosing the required communication format (online channels, frequency of communications, check in, etc.).

d) Online individual and group learning are delivered online via corporate channels (if it a group ones) or directly via a learning platform.

#### **Step 4. Monitor, evaluate and improve learning and behavioural impact.**

Measuring the program success includes four levels of training measurement (based on Donald Kirkpatrick system):

1) **The learner's response (reaction)** to training - the trainees own views of the value of the training, and where they can use it on the job. The Data collection method we have used is getting feedback from participants on the program right after the event ends and after 6 months during an annual performance review. The intention in obtaining this type of feedback is to ensure that the program is revised in a spirit of "continuous improvement" to better reflect the needs of the participants on an ongoing basis.

2) **Learning.** This is a direct measure of what, specifically, Engineers learned in the course (compared to pre-course results). After completing this program, the Engineers should have improved their technical knowledge in learned and needed areas and skills. The data to be collected after 1 month (for junior participants) and 6 months of the training conduction (during performance review assessment and 360 feedback).

3) **Changed behavior (application).** The semiannual and annual self and manager, team evaluation of soft skills, comparing to the previous results (return of

expected outcome: whether Personal managers testify during performance reviews that individuals can demonstrate those new or enhanced competencies that the learning intervention was anticipated to deliver); 360 feedbacks; quantitative survey methods to assess behavior change). The data collection is during performance review assessment.

Based on the available data on assessments, trainings taken, scheduled, what skills need to be developed for being promoted, we developed an employee profile, that both person him/her-selves and their managers can monitor the progress of learnings, development possibilities within the organization (as sample, see Appendix 8). The steps when the measurement will be conducted is shown on the below chart.

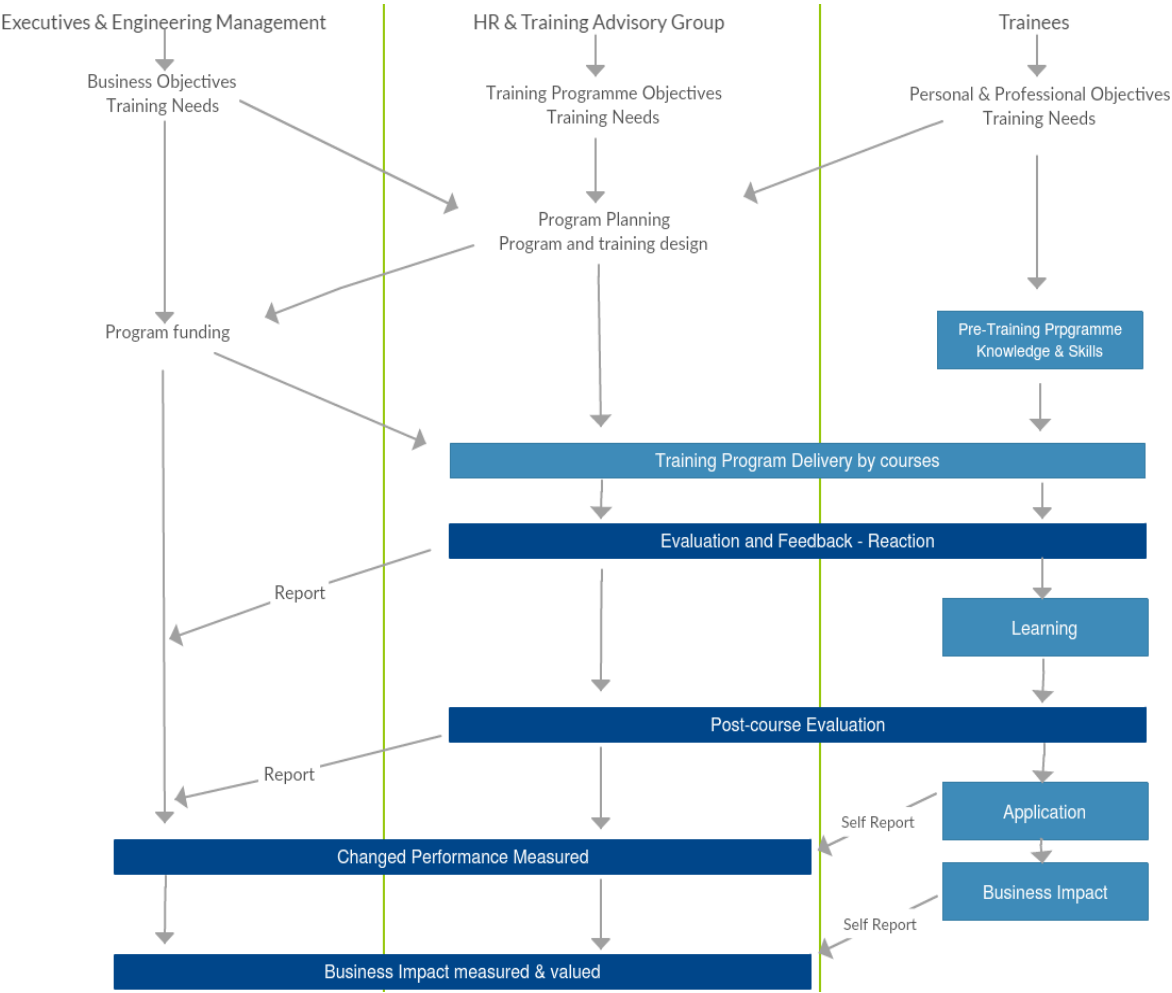


Figure 1.1. Steps for assessment

**1.2. Assessment of Learning Program Stakeholders’ needs and engagement strategy**

As the training program needs to be linked to the organization's overall strategy and each learning and development project should be linked to a specific goal and each goal should have a sponsor, we analyzed who are the project stakeholders and what are their needs, how we can meet them with the program, etc. Stakeholders' analysis will also help up to identify the main requirements to the project and business outcome expectations, etc.

Stakeholder analysis resulted in grouping 6 stakeholders that are likely to affect or be affected by a proposed action. Stakeholders were sorted per their impact on the action and the impact the action will have on them. We interviewed the stakeholders in person, via Skype and partly with a questionnaire.

Stakeholder Analysis and grouping:

1) Chief Operation Officer (CEO) is the sponsor of the program. The project will have a medium impact on him. The CEO has significant capability for positive/negative influence on the project success.

We asked him what is the growth plan; what sorts of employees' behaviors are they looking to encourage over the next three to five years; what should this project accomplish for the business and what is the budget for it.

Thus, the CEO's needs are to have profit growth through meeting strategic goals and objectives, with quicker, better, more efficient site performance and with innovation and have a program that could bring results as soon as possible with impact on the product. Also, strong believer in success of Machine Learning and chatbot so would like to have quick results in this area.

The needed contribution of the CEO is sponsoring it and approving the program setup, learning format (inhouse or online, international or local, etc.).

The Strategy to engage the CEO: Get his approval on the conference stream project (consider his interest in Chatbot). Show and get his approval on short- and long-term impacts on the company product. Receive his insides what projects include to the development program (especially AI, and Machine Learning, he is fond of). Involve and keep up to date regularly. Show the impact on company social responsibility policy (that can be positively promoted in social media).

2) The Vice-President of Software Engineering is the second person with the highest influence on the project. He supports the idea and format, as the Software Engineering team under his supervision is the biggest in the company. Also has high trust from the CEO. Need to have more Seniors in the department for high quality architectural decisions, leaders in Ukraine. Support Revenue and Innovation (move to daily releases and maintenance activities, higher speed of work; decrease the amount of time spent on code fixing, better Data Analysis, etc., business driven need is for rapid learning and innovative ideas). The project will have a medium impact on him.

The needed contribution of the Vice President: projects approval for technical improvements, budget increase for learning and development opportunities, approving promotions, dedicating experts time for conducting training. His disapproval of engineering time dedicated to the training will block the program.

What is important for the President's engagement with the project is to show the Engineering conference and Lunch and Learn program, rotations (that partly are product oriented) influence on Engineering team performance increase, savings. Have workshops that will also solve technical issues.

3) The Vice-president of Marketing and Product has medium power and low impact towards the project. The main interests of the VP is to achieve goals in product development and extension, more customers attracted and kept as continuous users. Need more data-driven decisions regarding product changes and feature development. Also need to grow the department of Analytics.

His contribution to the project is needed in providing project ideas about what product development will be important to implement, to provide practical learning. For the engagement, the best option is work through the VP of Engineering who is having influence on the VP of Marketing and Product. For that, HR needs to provide information to the VP of Engineering. Show the possibility that increasing engineers' product involvement and knowledge may decrease time for development of new features, better products through higher involvement. Among data analysts could be potential product analysts in future.

Him being against that engineers will spend a few days in a year on the development of skills and products that are not in the pipeline of the product team would make the project realisation more complicated.

4) Software Engineering Department (Senior Directors of Engineering, division managers) is the Executing (helping in the execution of the program) and Beneficiary Stakeholder. The project will have a high impact on the group.

The group has significant capability for positive/negative influence on the project success. They are a Supporter and contributor of the project and provide Senior experts for training program, develop content, allow engineers to dedicate time for learning, and for lecturers - prepare for the training, help to form an online training database. Help in communication to the needed Senior management.

The questions we asked the group were: What do they want employees to learn?

How will they support their efforts to take time away from daily work of their employees to attend training? What are their expectations for how engineers will apply the training to their job responsibilities?

The Software Engineering Department's needs are:

- Support Business Initiatives with skilled developers, QA, project management, and engineering leadership.
- Continuous Knowledge improvement and technical growth of Engineers.

The Team is ready to support Engineers with additional time for training mainly if this activity will bring visible influence on improvement within the company. In case the team rejects participation in program design; step out of the program group as co-owners, provides poor training content - that will all block the project. The strategy of the team engagement should include their involvement into program development, supporting them in organisational questions (arranging facilities, tools, participants, gifts if needed). Show their impact on the training outcome and their importance.

5) The Analytics Director has medium influence and the project has medium impact on him as his department is still growing in Ukraine. His primary need is to have

Data Analysts that are skilled, independent and can make reliable data-driven decisions. Since the overall long term strategy is to have full delivery teams in Ukraine it's important to involve Analysts into conference workshops and invest into their development (so the TOP management seeing the high quality of work and knowledge of Data Analysts in Ukraine would be interested continue to further hiring locally). The Director can support the program allowing data analysts to attend training, approving this with VPs and CEO; dedicate senior experts from the team to conduct training and workshops to the company employees.

The specifics of the Director of Analytics is Being late with decision making, so it's important to keep a regular communication with him regarding Analyst training materials or employees dedication to the groups. He also can block the Analysts' participation (that would lead to the need to change the program content) by changing his mind at the last moment (from experience in communication with the Director).

The strategy is to show the Director of Analytics that other departments participate as well (he is competing with the Engineering team) and promote the Analytics team input to the design of training materials. Regularly update him via email or during department sync ups on the training program and progress of his employees.

6) Line Managers as beneficiary and advisory Stakeholders who will receive high benefits from the project. The question we asked the group was what do they want employees to learn; what are their expectations for how workers will apply the training to their job responsibilities; what effort will managers put in to reinforce learning after classes and presentations end, etc.

The Managers' needs are:

- More skilled employees.
- Fewer efforts spent on explaining business needs during 1:1.
- Help employees to advance in their career but based on developed skills.
- Help to develop employees necessary behaviour for career growth.

- Engaged employees motivated to participate in trainings, and in projects that help to meet the company's Objective Key Results. Having career opportunities for their employees, keep them in the company. The team is ready to invest time for efficient assessment of knowledge gained after the training, etc.

They also need development for themselves on leadership.

The group can support the project from the start:

- Conduct effective performance reviews for reliable data as input for training.
- Coach and train on 1to1s their subordinates, encourage learning, put right development goals for their subordinates.
- Detecting potential candidates as lecturers.
- Support in collecting data after training.

At the same time, wrong identification of learning needs, potential development areas of subordinates; lack of communication to subordinates; wrong identification of rotation target team and not communicating with the target team on his/her subordinate rotation, etc. will negatively influence on the program and the outcome as well.

That is why, while the project realisation it is important to give to the Line Managers decision right that impacts their subordinates: allow them to choose target groups for training, involve them into online training selection, communicate with them on weekly basis on sync up, providing progress status on the project, their subordinate learning progress, feedback, etc.

7) Engineers and Analysts are beneficiary Stakeholders, who receive the direct benefit from the project as a group/individual but have low influence on the format and decision to be made on training. The project will have maximum impact on the Group. We asked employees how they prefer training to be delivered; what support they need in support of growth; if they are aware of what knowledge is needed to be successful in the Company. We also asked why they did not attend external training,

conferences, on-line open space learning events. Based on that, the Engineers needs were grouped as following:

- Job mobility with careers go in every direction.
- Career advancement.
- Projects involvement outside Delivery teams.
- Technical knowledge improvement that would help them to grow both within the company and career perspective.
- On-the-job learning projects (aligned with company goals), where employees can work on cross team basis
- Have more knowledge sharing from the most technically Senior specialists.
- Social and collaborative and personalized trainings

They are essential influencers on the project as participants in training, providing feedback so it can be taken as input for analysis on what, how to train; being engaged during training; learn; participate in workshops; apply learned knowledge at work, improve performance.

8) Customers' needs are to have easy access to good quality and fast services and have it for competitive prices. They have indirect benefits and power on the project but have influence on it by their behaviour (if the number of customers will decrease, that will affect the cost and budget spent on internal expenses, employee decrease). Need to monitor their behaviour that could change the stakeholders' goals.

**Conclusion.** Based on Stakeholders analysis tools and understanding stakeholders' impact, we can summarize how we should build the cooperation with them, level of involvement and information to share with them. Also, help to understand the program. For that, we mapped the stakeholders as seen on Figure 2 satisfaction of whose needs and in what way we need to satisfy with the developed.



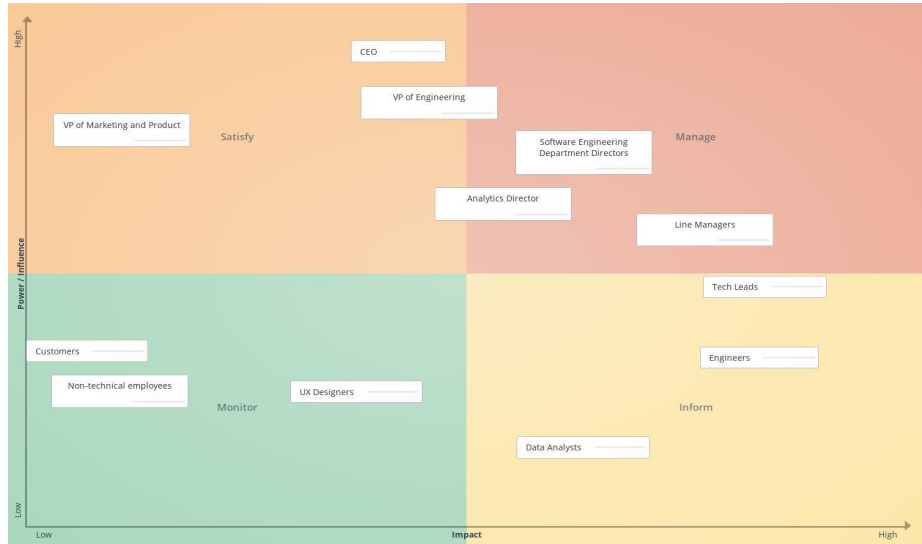


Figure 1.2. Stakeholders Mapping by priority

## CHAPTER II. THE PROGRAM BOUNDARIES AND EXPECTED RESULTS

For a successful program the duration of each phase should be as follows.

<b>Project phases</b>	2 months	220 hours total (for Engineering Conference, online trainings and Lunch and Learn rotation schedule plan)	10 months	Ongoing
	<b>Discover &amp; Analyze the Gaps in knowledge</b>	<b>Design and plan What, Whom, How</b>	<b>Deliver</b>	<b>Monitor, Evaluate and improve</b>

<b>Deliverables</b>	<ul style="list-style-type: none"> <li>- Learning Needs Assessment (performance review results, 360 feedback, skills matrix analysis, prepare career path program;</li> <li>- Analyze current training programs, market availabilities;</li> <li>- Conduct additional surveys among managers, employees on professional and personal needs from trainings.</li> </ul>	<ul style="list-style-type: none"> <li>- Stakeholders/ Project Team/scope and deliverables definition;</li> <li>- Portfolio of the program;</li> <li>- Recruit and use Training Advisory Team;</li> <li>- Specific timeline and deliverables;</li> <li>- Required Program components;</li> <li>- Processes, roles and responsibilities;</li> <li>- Budget and commitments definition;</li> <li>- Prepare facilities if needed;</li> <li>- Create database of online trainings;</li> <li>- Prepare schedules of trainings, rotations.</li> </ul>	<ul style="list-style-type: none"> <li>- Deliver JASEC in September (5 days);</li> <li>- Internal training “Lunch and Learn” (1/month);</li> <li>- Online individual learning (ongoing, depends on the content);</li> <li>- Rotation program (1-2 weeks, max.4 people at a time could be on rotation).</li> </ul>	<ul style="list-style-type: none"> <li>- Analyze the reaction, learning, application</li> <li>- conduct surveys, analyze performance review, knowledge assessment, 360 feedback;</li> <li>- Analyze process improvements after 6 months of the program;</li> <li>- Satisfaction surveys</li> <li>- Analyze expected and outcome of realized program.</li> </ul>
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While the first phase is in general to each of the program component, the rest ones require different timing for each of the program components (the one year fixed time Conference requires the biggest set up, while the online courses - the least)

As the program has been already launched, we had calculated the results of the program and analyzed whether it gave us the needed outcome and if yes, what could be improved for the next time.

Measured outcomes:

1) **The learner's response (reaction)** to training - the trainees own views of the value of the training, and where they can use it on the job. The Data collection method we have used is getting feedback from participants on the program right after the event ends and after 6 months during semi-annual performance review. The intention in obtaining this type of feedback is to ensure that the program is revised in a spirit of "continuous improvement" to better reflect the needs of the participants on an ongoing basis.

The overall feedback from participants on the program:

- satisfaction rate was 92% (in 2018 it was 97%).
- 87.3% of participants answered that the program was valuable for them and they learnt from it (in comparison to 2018's rate of 93%) and 80% of them believed can apply the learned knowledge within 12 months (in comparison to the 2018's rate of 85%).

Based on the feedback we analyzed the reason for the lower rate of participants satisfaction.

The takeaways are:

- As the participants number was doubled from the 2018s group, we need to find better options for facilities without increase of the budget (including consideration of online conferences);
- the participants became more diverse: the limit of streams could not satisfy all their expectations;
- the distribution of participants to a specific stream of a conference or rotation team was made by direct managers based on a number of factors (the current performance gap, the planned skills development of the participants, his technical level, future assignment). Although the preference of participants was considered, in case if it does not meet other factors - they were assigned to other streams. That should be better

managed and communicated in much advance to the event.

2) **Learning.** This is a direct measure of what, specifically, Engineers learned in the course (compared to pre-course results).

Depending on the participants level and position the result on behaviour change and learning showed:

- Seniors improved their technical skills (and get to the next career level) - 46%; Middle specialists - 57%; Juniors - 80%.

3) Also, by changing training program and improving some related programs (performance review, introduction of career path program) we improved the employee engagement rate (in 2018 it was 89% in Ukraine, in comparison to the previous - 78%), and turnover (2018 - 12%, to the 2016 rate - 16%)

4) **Changed behavior (application).** The semiannual and annual reviews by manager, team evaluation of soft skills, comparing to the previous results has shown improvement of behaviour (communication, leadership, strategic thinking, creativity, etc.): Seniors - 65%, Middles - 70%; Juniors - 48%

## 2.1. Direct cost and indirect cost invested into the project

The financial investment to the project includes direct and indirect cost.

The direct cost of the project includes: development cost (designing the methods to meet learning objectives, designing materials and the program, code shops, preparation of presentations; cost for grouped paid online courses and time for reviewing the materials); delivery cost (accommodation of trainers and participants from other offices, per diem, meals, costs for printing out materials and handouts); cost for online tools for having group international conferences (Zoom, Teams, etc., video recording devices); administrative costs involved with making the arrangements for the program.

Indirect cost includes salaries of participants for the period of participating in the program, salaries of trainers for the period of design of the program and its delivery, evaluation cost

The Project required direct cost of **\$11,472.00** investment (~97 \$/person).

The indirect cost was **\$64,748.00**. That is ~ 540 \$/person (see Appendix 9).

The budget was taken from annual budgeting for trainings (the expenses for the Conference is a separate Engineering Department budget, out of trainings).

## **2.2. Analysis of possible blockers and threats of the program**

While the program brought number of benefits to the participants and the company, during the project steps we faced with number of challenges:

- Time dependency:
  - a) In most cases we were not able to go to the next step of the project, without finishing and finalizing the previous one. With data analysis for the program design, we discovered that we need to update our other development HR processes before even starting any consideration of the program (career path development, improving soft skills assessment, etc.)
  - b) Availability of Stakeholders to get their opinions and inside.
  - c) Time consuming administration of group training. For that, we involved interested employees, who are eager and want to lead online training parts (review with experts the content of training, update database, create calendar of events and send invitations, etc.)
- Facility dependencies for conference conduction. We needed to rearrange some office space for locating each stream member together. Also, the meeting rooms set up needed to be upgraded for some of the workshop conduction.
- The conference participants' assignments were based on business needs, technical knowledge gap and career plans of individuals. Were not possible to participate in more than one workshop in parallel or change the stream when the person wants. We could not consider all needs of the users. For the next year's conference, we considered feedback on participants and started recording the other streams. Also, implemented a morning voluntary lectures and short workshops so other streams participants could learn about other topics too.

- Keep the balance with stakeholder expectations and needs (the stakeholder power and interest matrix helped us with that).
- Driving learner engagement with online training, motivates them to learn during free time. We worked a lot with line managers and individuals sharing information how it is important to invest into self-learning and development.
- Keep the balance between business inside (what knowledge and project wanted), individual development and market connection.

Potential challenges and opportunities for change:

- With growth, people might have no career growth opportunity or not everyone can work on an interesting stack - this can lead to looking for opportunities outside the company. We monitor the motivation and key, high potential employees for creating them challenging projects. Without being promoted they can lead initiatives.
- Shifting to online learning but struggling with focus. On top of that, we are seeing business leaders hastily set up virtual platforms and then treat them as another tool to keep the old work going, rather than as a space to learn about new ways of working. So the need is not only to move to online training with the same format and content but develop a new way, how to engage into collaborative workshops remotely.
- Financial crisis and quarantine impact on budget, format, learning style and in general, challenge the delivery of the program in 2020.

### **2.3. Program Adaptation to the COVID-19 Social Isolation and world crisis.**

As the whole Company has moved to online remote format work starting from March 17, additionally to to set up the remote work, communication, team support, HR Team was needed to adopt the format of the learning program to the new way of interaction - online format. Most of the training, rotation programs can be shifted to remote format already. The easiest way was with online groups and inhouse trainings.

The next program shifted to a completely online format for the period of the social isolation and travel freeze was the rotation program. Since partly we were already practicing voluntarily remote format, we already had processes set up for that.

The remote work required extra communication, so we introduced additional team communication channels, individual communication kick-off meetings, regular synchronization meetings. The shift allowed us to keep the program moving with minimum influence.

The hardest part is the conduction of the Conference. Due to travel freeze and quarantine, the workshops were rescheduled from end of May 2020 to end of September 2020 with monitoring the official policies to understand the following:

- Is it possible to have the Conference in 2020.
- If yes, what should be the format.
- If postpone it to 2021, what will be the prognostic impact and loss.

The preliminary deadline to decide on the Conference status is August 12.

To make decisions on the format (or whether postpone the event) and conduct the workshop the following so-called pre-start stage was planned and scheduled:

1) Monitor the local and global situation on official moves on exiting from quarantine (for example, sustained decrease in new daily cases of COVID-19, low levels of active cases, government policies in place to manage re-occurrences, stress on the national hospital system, legal requirements etc.). We are dependent on the US and Ukraine, India government decision, and on local levels (depends on COVID-19 statistics on infected people and areas in Lviv and in California State). The virus is still present, and no effective vaccine or therapy exists, and populations have not reached a threshold of immunity. It is likely that this will remain the case for 12 months or more.

The assumption that it can become milder based on news and recent actions of European Union (opening borders and moving to the adoptive scenario of quarantine in Ukraine)

- 2) Monitor the health condition of employees, and in Lviv city.
- 3) Communicate regularly. It will be important to remember that while some employees are very excited to get back to the office, others are very concerned, and we must make sure our workplaces are comfortable for all employees.
- 4) Assumption - people will be afraid to travel or host colleagues from other

locations. - written and regular communication on health norms, how to behave, how to monitor your health, communicate on the implemented sanitary norms in the office (temperature checks, sanitizers, cleaning, etc.).

If the lockdown will end by August 5 (or will be milder) in all office locations and no one will be registered as COVID-19 infected - start checking the transporting options.

5) Opening international airline travels and airline company policies. If travel freeze will be till September 15th, 2020 (from and to the United States, from and to Ukraine, via any transit country to the two countries (mainly European Union or Turkey)).

6) Social Distancing Protocols (distance, hygiene, and monitoring). Including analysis and plan the layout of offices, how to move around the office, temperature testing, use of face masks, visitor protocols, hygiene procedures, precautions for travelers, etc.

7) Plan for staged return to offices based on the local context. Implement the step-by-step office re-entry. The first phase (30% of volunteer employees or who by other reason needs to work in the office) start work - as of June 30 (based on latest government updates in Ukraine). We will test and learn from these pilots (for e.g., analyze who can stay longer on remote work without impact on business, what departments need to work in shift horse, etc.). Following the pilot period, the plan is to move to phase two. Based on layout and office capacity determine the onsite Conference opportunity.

These updates are discussed and reviewed with the global HR Team on a weekly and biweekly basis with leadership.

If the milder scenario of lockdown will not happen by August 5, or the travel freeze will continue in at least the United states - the fully offline format of Conference in September will not be possible. Suggest the leadership and team consider the hybrid variant, completely online format or, the least preferred, postpone the Conference to May 2021.

If the decision by the leadership team will be made by August 12 - the offline



format start on 20th of September 2020 will be possible. If the decision will be made between August 13 and August 20 - the offline Conference can be made on October 10th. If the decision is made between August 21 and August 30 - the full offline Conference needs to be rescheduled next year or choose the hybrid variant (in-house in Lviv but remote for other locations) or completely online. Hybrid and completely online conference latest possible date in 2020 - August 25, 2020.

The pros and cons analysis on the Conference is described in the Table below.

Table 2.1. Disadvantages and advantages of the Conference

	<b>Offline Conference (location - Lviv)</b>	<b>Hybrid ( some employees join offline in Lviv, other locations - remotely)</b>	<b>Online for Ukraine and San Francisco (India is under question)</b>
<b>Advantages</b>	Interaction Stream Leaders with groups; people within groups	Safety for US colleagues	Safety (no risk of infection during online workshops)
	Engagement into collaboration is easier	With the involvement of Ukraine office, specialists can make the workshops more interactive	Accessibility and more flexibility among other options (timing, in terms of date)
	Use reflective observation learning style	Team cooperation	Cost-saving on all travels, facility
	Everyone in the same condition (no issues wit additional channel set up, internet, tools).	Cost-saving on international travels, partly hotels	No need to commute
	It's easier to ensure attendees are paying attention to the training. Some learners also find it easier to retain the knowledge and skills they've learned through offline training than they do with online training	Minimum dependency on government regulations and quarantine, airline policies	Lunch, coffee break set up, the party set up cost saving
	No issue with timezone		Minimum dependency on government regulations and quarantine, airline policies

	Offline Conference (location - Lviv)	Hybrid ( some employees join offline in Lviv, other locations - remotely)	Online for Ukraine and San Francisco (India is under question)
<b>Disadvantages</b>	Logistics (travel, venue)	Meetings might be late, or early. 3 different timezone (The difference between San Francisco -Lviv is 10 hours, Difference between Lviv and India - 2,5 hours, between San Francisco and India - 12,5 hours	Meetings might be late, or early. 3 different timezone (The difference between San Francisco -Lviv is 10 hours, Difference between Lviv and India - 2,5 hours, between San Francisco and India - 12,5 hours
	Dependency on international air travels, hotels, restaurant, facility	Socializing isn't as natural	Socializing isn't as natural
	Find a venue that meets the hygiene protocol and social distancing measures. (1,5-meter distancing, ventilation, size, etc.), equipment needed for offline inhouse	It takes more effort to stay in sync	It takes more effort to stay in sync
	Health security warnings and risks are the highest among the variants of the format	Lectures cannot be a whole day	Lectures cannot be a whole day
	Dependency on time	Time for local Stream Leaders development (train the trainer)	Lectures should be separated and recorded, but not live
	Offline Conference (location - Lviv)	Hybrid ( some employees join offline in Lviv, other locations - remotely)	Online for Ukraine and San Francisco (India is under question)
<b>Disadvantages</b>	High risk of changes in regulations beforehand, that will impact on the offline workshop conduction (for e.g. new wave of limitations, the risk to stuck at transit zone for international travelers, etc.)	Lack of experienced lectors in Ukraine	Because of the timezone, workshops could be conducted afternoon for Lviv and early morning in San Francisco
		Participants will need to deal with off-and online lectors, different focus	High chance of connection loss problem
		Because of the timezone, workshops could be conducted afternoon for Lviv and early morning in San Francisco	Managing individual connection, computer set up for participants workshop
		Dependency on domestic transport, hotels, venue	High chance of connection loss problem
		Find a venue that meets the hygiene protocol and social distancing measures. (1,5-meter distancing, ventilation, size, etc.), equipment needed for offline inhouse conference	No celebration after Conference end, no real awarding
		Health security warnings management	No in-person interaction
		High chance of connection loss problem	
		No celebration after Conference end, no real awarding	

Based on comparison and analysis, we determined what actions should be taken to minimize the disadvantages with the solution:

- What is needed to be implemented for offline Conference format in 2020:

#### I. Administration part:

- a) Arrange logistics: for domestic travelers suggest using private transport.
- b) Prepare instructions and recommendations on secure behaviour for participants.
- c) Based on the set-up requirements to the venue - find the needed place (the place should be with open air space, so bigger gatherings could be arranged outdoor (with following the distance requirements). Prepare the place for the event (clean, disinfect, ventilate).

d) Book accommodation, lunches that meet required protocols.

II. Prepare required learning and workshop materials per each stream.

III. Change the team composition. The planned stream sizes were between 8 to 16 people. Divide the bigger groups for sub-groups

- Preparation of the online Conference format:

I. Organisational work

a) Team channels (Teams, gotomeeting), Zoom separate chats

b) Prepare instructions to the lectures, stream leaders, participants (how to connect, process of the Conference, schedules, groups, etc.)

c) Prepare guideline on tools that will be used for the online Conference

d) Find and subscribe to Codeshop streams tools (videostream technology)

II. Technical set up:

a) Support stream leaders with professional cameras

b) Pilot session recordings

III. Change the format and duration of the lectures, workshop activities

a) Refactor the format to adapt to the online format: record all our lectures, turning them into videos (range from 5 minutes long to about 25 minutes long). Assign these as homework in-between class sessions. This will let us do two things — first, to shorten each session from 3 hours to two. Second, use the time we had for workshops — conversation, question & answer sessions, team, and group exercise. The online format will be two weeks long or two hours duration workshops per day.

b) Big Group / Small Group: mix up individual, small group, and big group work. With Zoom we can implement group mixing. This allowed us to manage our virtual teams in much the same way as our in-person room.

c) Time Zones: Form teams with people in the same or adjacent time zones. This will allow them to schedule homework collaboration time more easily in between class sessions (here the challenge is India Team involvement with possible solutions to have them share the materials, but do not involve the India team to the workshops).

d) introduce participants to the tools.

IV. Train the trainer, consult with experts in online workshops. Consider cooperating

with an expert in online education to review our materials with us and help us think about the most effective way to structure the material and teach us some important best practices to use in the virtual classroom. If the training in September, online can be October, have expert training in early September, find an expert and agree on time in August.

V. Set up the communication channel and employees' engagement virtually. Use Mural, Miro tools for our workshops, white-board, integrating with Jira. Sli.do for Surveys, qweez and engagement for each team, and have one that to use with the whole group. That will help us set up sections on each board for specific exercises, and we pre-load those sections with templates, examples, and other materials that people will need during class.

VI. Stream Leaders need to get to the office for streaming so they can have required set up for workshop.

- The hybrid Conference format for 2020 will require a combination of preparatory work from the offline and online format described above. We have already developed materials for a workshop program for 80% to conduct it offline. With proper planning, even if it will be conducted by UA experts under the supervision and proper training, it could be conducted locally on a good level. It will be needed to determine who will participate in what format.
- Calculate preparatory and set up expenses for each scenario.

**CHAPTER III.**  
**MEASURING THE OUTCOME OF THE PROGRAM AND**  
**CALCULATED ROI**

To better understand the Return on Investment, the below table shows the comparison of investment to the program and estimated benefit of the internal programs (more detailed description in Appendix 10).

We calculated the benefit of the Project:

Quality improvement, that calculates less time spent correcting mistakes (bug fixing) - before the training - \$185,142.86 vs. after - \$124,045.71.

Table 3.1. Financial outcome of the program and calculated ROI

<b>Activity</b>	<b>Value</b>
Estimated participants' numbers	120 ppl
Period over which benefits are calculated	12 months
<b>COSTS</b>	
Design and development	\$5,000.00
Promotion	\$500.00
Facilities and logistics, per diem	\$6,800.00
Participants	\$38,500.00
Evaluation	\$350.00
Total cost	\$76,220.00
<b>BENEFITS</b>	
Quality improvement	\$61,097.14
Time savings	\$145,704.00
Other saving (recruitment, onboarding)	\$32,896.00

Total benefits	\$239,698.14
Return on investment	<b>214.48%</b>

- Recruiting and onboarding. With help of rotation and workshop distribution, yearly we had an average 4 ppl rotate to another critical role (ML Developer, SQL). The total savings was \$32,896.

- Time saving (time saved by not waiting for help (calculated as hours saved × dollars per hour + hours of helper's time saved × dollars per hour). Before the training the cost calculated was \$211,224.00 and expected cost after - \$65520.00.

- Avoiding the need to hire new Senior-level Engineers employees. The calculation is made considering the salary and benefits savings of external applicants only, without including recruitment, adaptation, workplace preparation expenses.

The estimated ROI is 214,48%. We made the calculation considering the planned average 8% salary increase at the end of the year.

**The intangible impacts** the program will bring are:

- increase job satisfaction,
- improve quality of decision-making,
- increase commitment,
- improve teamwork,
- improve customer service,
- improve communication,
- Job mobility (less time for filling critical positions during new product launch)

**Other advantages.**

- Increase employee's engagement and motivation. By rotation program, Conference participation in other of specialization streams we enable horizontal growth;

- The project positively results also on employee engagement, like intellectual (thinking hard about the job and how to do it better); affective engagement (feeling positively about doing a good job), social engagement (actively taking opportunities

to discuss work-related improvements with others at work).

- Engaged employees, additionally to being happier and more fulfilled, delivers improved business performance.
- Providing learning opportunities also can help build human capital and enable staff to achieve personal and career goals.
- Additionally, new product ideas during project realization leads to successful product launches.

Stakeholders got the following advantages from the Program:

- 1) Senior Executive Team - aligned the program and its projects with strategy and obstacles to reach the goals. Get stronger teams, innovative, fresh ideas, lower attrition rate, employee engagement.
- 2) The Software Engineering Department met their objectives and with getting more senior level Engineers to the team.
- 3) Engineers – opportunity to join projects they would learn something new (technical, product, business skills) outside their regular delivery teams; horizontal career growth; work and learn from more senior developers; work with products and executive, customer support teams closer; see how their learning is connected to their growth within the company; increase your value on the market.
- 4) Product team have opportunities to get different developers to work on their project and some of the ideas will increase the revenue. The program is designed to lead to concrete ideas for new products and processes that can improve the customer experience and increase growth.
- 5) Customers – the program is based on work on customer issues and what will improve their experience with the site (based on collected and analyzed information on customer complaints, issues, requests, dogfooding projects, etc.)
- 6) Personal managers win through this extended approached event as well, because their direct reports will improve not only the technical knowledge but business, product knowledge too.

## CONCLUSIONS, RECOMMENDATIONS AND NEXT STEP

The HR team at JustAnswer Ukraine was challenged to develop and launch a learning and development program for employees in Ukraine to help executives find ways to improve efficiency, customer satisfaction, and revenue growth with expectation of learners' involvement in product innovation. Based on internal and external factors, a 4 component learning program was implemented: JustAnswer Software Engineering Conference, Employees cross-functional, cross-locational rotation, In-house and Online remote trainings (self-developed and used on online learning platforms such as Udemy, Coursera). The Program was developed with active involvement of main stakeholders - Software Engineering Management Team (as the partners in program implementation, workshop and training material developers), Line Managers and employees (as the information providers on what and how to learn, as well as participants) and taking into account expectations of Top Managers as the sponsors.

The whole training program spans 12 months (as an ongoing process with different duration of its components) and has been developed as a 'whole home' course attended by all staff in the Company Ukraine office.

Funding was obtained from JustAnswer (mainly from the company annual budget dedicated for trainings) to implement the training in 2 sites in Ukraine between May 2018 to December 2018 with continuing in 2019 of the same training program. The evaluation was undertaken by participants, HR department and leadership group.

The implementation of the program was conducted in 4 phases. Important outcomes of phase I, was the research of existing learning solutions, analysis of knowledge gap and improvement opportunities. The important result was implementation of the Career path program for different levels and functions. The process was described on Confluence and communicated to all employees. That gave greater clarity about the overall goals of the Training Program and identification of programmatic themes. During Phase II we designed and developed the program. During the development we



came up with learning program components and format, how, when and who will conduct the trainings. The next phase was the conduction and delivery of the developed program. Phase IV, the results of which are summarized here, was designed to broadly assess the program's accomplishments, identify problems, and provide recommendations focused on program operations and management. A mixed methods approach was adopted: the collection of quantitative data from the 120 staff who participated in the training.

Main findings:

- 1) Overall satisfaction of participants in 2018 was 97% and in 2019 - 92%
- 2) This Program was valuable for participants and they learned from it (2018 - 93%, 2019 - 87.30%) and 80% of them believed can apply the learned knowledge within 12 months (in comparison to the 2018's rate of 85%)

The reason for the difference between 2 years is in Conference workshop composition:

- As the participants number was doubled from the 2018s group we need to find better options for facilities without increase of the budget (including consideration of online conferences).
  - The participants became more diverse: the limit of streams could not satisfy all their expectations.
  - The distribution of participants to a specific stream of a conference or rotation team was made by direct managers based on a number of factors (the current performance gap, the planned skills development of the participants, his technical level, future assignment). Although the preference of participants was considered, in case if it does not meet other factors - they were assigned to other streams. That should be better managed and communicated in much advance to the event
- 3) Among participants' feedback, what they valued the most in the program:
    - Possibility to learn new aspects and technologies in the company in a short period through involvement to work on other tasks.
    - Work with different Senior-level colleagues.

- Better understanding of business needs through integration and working with different cross teams/functions and what customer wants and why - deep understanding of a specific set of end users.
  - Better understanding of the Software Engineering Department, company and business needs through productization and feedback session with the Leadership group.
- 4) Depending on the participants level and position the result on technical knowledge improvement is:
- Seniors improved their technical skills (and got to the next career level) - 52%; Middle specialists - 65%; Juniors - 86%.
  - Improvement of behaviour (communication, leadership, strategic thinking, creativity, etc.): Seniors - 65%, Middles - 70%; Juniors - 48%
- 5) By changing training program and improving some related programs (performance review, introduction of career path program) we improved the employee engagement rate (in 2018 it was 89% in Ukraine, in comparison to the previous - 78%), and turnover (2018 - 12%, to the 2016 rate - 16%)

### **Recommendations and next steps**

To further improve and make sure we succeed with training initiatives and/or determine their effectiveness to reach stated objectives this section has been divided into two parts. The first part addresses the actual training rollout and how it can be improved. The second part addresses general recommendations and provides suggestions on areas to focus on for moving forward.

- **Training Rollout**

There are several factors that determine the success of a training process. The following are recommendations that outline what should be improved before, during and after training.

Pre-training activities are the pre-cursor to a successful training rollout. In this part communication with all stakeholders is very important. At this stage, we

communicated a lot with the Software Engineering department team, Personal managers, but should have had more communication with Engineers. The communication was made verbally, via general meetings or email, but the role of personal managers was to discuss and share what exact workshop their reports are going to join and why they are joining that particular stream/workshop of the Conference. The communication extended in time because of different locations of personal managers and reports, etc. Next time we should define a deadline by when the personal managers need to communicate important information on the program to their reports. The communication role was concentrated in the Head of committee and Training advisory team and HR. It would be helpful to clarify the liaison and communication role HR and the Head of the team have in terms of who is involved and at what stage of the rollout and divide the communication role in order to have a contact person locally. This will help to ensure that there is a cohesive approach and will prevent coordination issues during the Conference technical preparation, coordination of requests from presenters, etc.

- **General recommendations**

The COVID-19 has demonstrated that the work format is changing and remote work (either for a couple of months or for a longer period as partly remote format) is our nearest future. Depending on the scenario, government decisions, spread of the virus and when the vaccine will be developed the previous training format is not realistic and requires an adaptive approach. For that, we are already working on the online program format with the option to take the advantages of the chosen format as well as working out a strategy of taking the best collaborative approaches for remote teams. But we do not plan to refuse from offline format as well.

With the overall program analysis and risk assessment the recommendations we made are the following:

- Regular communication with all stakeholders about the purpose and the benefit of the program, acknowledge progress made and monitored outcome.
- Coach and train presenters who have little or no experience conducting workshops not only in the preparation phase but during program delivery.
- Share the responsibilities and involvement of the whole Training Advisory

committee.

- Develop online training skills of lecturers, deal with ambiguity, develop learning program that balance between different format that will bring to the process more flexibility.
- Focus more on Soft skills development that in time of change and crisis is especially needed.

**The next step** of the project:

- To adapt to the new challenges - remote work, travel freez and world crisis: transform Conference to online format. Although the decision on the format of the Conference is not made yet, we have prepared the strategy of coming out from the crisis period that affects the program full conduction. With the Conference conduction approval and knowing the format of the workshops we will be ready to implement and launch the online, hybrid or offline format as well.
- Also, as improvement of individual solution analytics - integrate all metrics to the HRM System that would generate recommendations for promotion, learning materials based on previous analytics and ongoing learning (currently it is done in Excel spreadsheets with semi-manual generation of profiles. develop internal mobility project-based work for Engineers.
- Extend globally. With ROI and other metrics numbers, Leadership team is interested to implement the program globally considering local differences
- Also, considering the risk that trained employees can leave the company (if 5 of them leave the company, this turnover would increase the payback period of the project and increase costs) HR Team and Personal managers need to assess and pay attention to the motivation of the Engineers. If the program would not lead to level increase, but Engineers will expect salary adjustment, this will cause negative view on the project as well as can demotivate Engineers participate in such events in future.

- The program is the first step on moving to internal project-based opportunities so-called “internal mobility platforms” (instead of time to time rotations between teams) that allow employees to cherry-pick projects to fill specific gaps for the company rather than staying in a more structured role. That would increase internal mobility of employees and will show that not only the Engineering team, but Product and other functions get benefit from Engineers’ micro-jobs groups work, that can inspire a sense of entrepreneurial spirit and autonomy within a company. With the world crisis the implementation of internal mobility platforms is speeded up.

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## APPENDICES

## APPENDIX 1. JustAnswer Values

	<p><b>Humble</b></p> <p>We're not big on fancy titles or corner offices. The best idea, from anyone, always wins</p>
	<p><b>Data-Driven</b></p> <p>At JustAnswer, data decides, not egos. Letting the data speak keeps us customer-focused and lies at the heart of our company</p>
	<p><b>Courageous</b></p> <p>We take risks and challenge the status quo. It's okay to make mistakes but we recover fast. We're not afraid to question decisions and directions, no matter where they come from</p>
	<p><b>Innovative</b></p> <p>We're constantly learning, creating and adapting. We value disruption that makes a difference.</p>
	<p><b>Lean</b></p> <p>We always do more with less. Communication, meetings, resources, We embrace lean testing and the learning we gain.</p>



## APPENDIX 2. Skills Matrix (Star Map Sample)

Person		Modelling						Database			Programming					Layout				Interactions/Communications					Strategics				
Team	Name	Architecture	UML	Security	OOP	Patterns	Prototyping	Graphics	SQL	NoSQL	ORM	C#	LINQ	VB	Threads	JS	WebForms	XML	CSS	Web2.0	MVC	WebServices	WCF	NET Remoting	Messaging	AJAX	Algorithms	Math	Analytics
		X	O	X	X	O	X	X	O	O		O	O	O	O	X	O	X	X	X	O	?		?	?	X	O		O
		O		-	X	O			X	O	O	O	O	O			O			O					O	X	O	X	
				-			-		X	O		O	O	O							O		-			O	O	O	
					O				O	?	O	O	O		O	O	O	O	O	?	O	O	?	-	O	O	O	O	
		?	?	?	O	O	?		O	?	O	O	O	O	?	O	O	O	O	?	O	O	?	?	O	O	O	?	?
																				O					?				

What Star Map is?

"Star Map can be used for effective skill management. It shows:

- strong and weak skills of the team
- personal interests for each developer
- who can help with each particular technology
- what skills should have potential candidate to join to the team"

Each column represents one of technologies.

Each row represents one person.

?	Engineer is interested, need to learn this technology
-	Engineer doesn't know anything about this technology and is not interested to learn it or work on it.
O	Engineer knows something about this technology and interested to learn it better and work with it.
X	Engineer have senior experience in this technology, is able to work with it or help rest of developers

### APPENDIX 3. Sample of SoftSkills Assessment Results

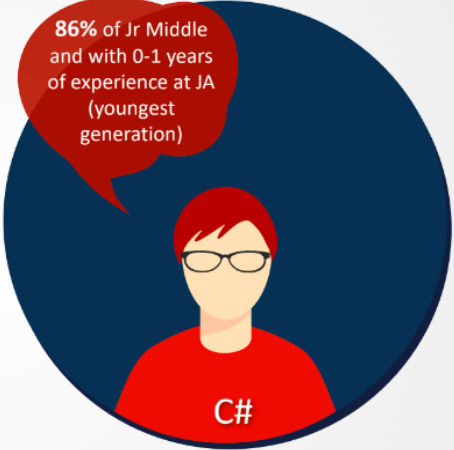


## APPENDIX 4. Employees Segmentation by Their Development Needs

**VALUE ON-THE-JOB LEARNING**

Support and involvement into interesting projects outside Delivery teams  
 Concentrated on technical growth by verity of projects and different tasks, of different complexity

86% of Jr Middle and with 0-1 years of experience at JA (youngest generation)



**C#**


Our fast growing youngsters

EMPLOYEE SEGMENTATION

**VALUE CAREER DEVELOPMENT OPPORTUNITIES**

Suggestions what to do to increase professional level (not only technical).  
 Outlining opportunities for further career development.  
 career suggestion or information where he/she can move and develop at JA (**some confidence in future**)

70% of those who works more then 3 years on position Middle-Sr (between 25-31 years)



Career growth

**80% of Jr - Middle Engineers and with 0-2 year of experience at JA**

**Engineers who requires more support**

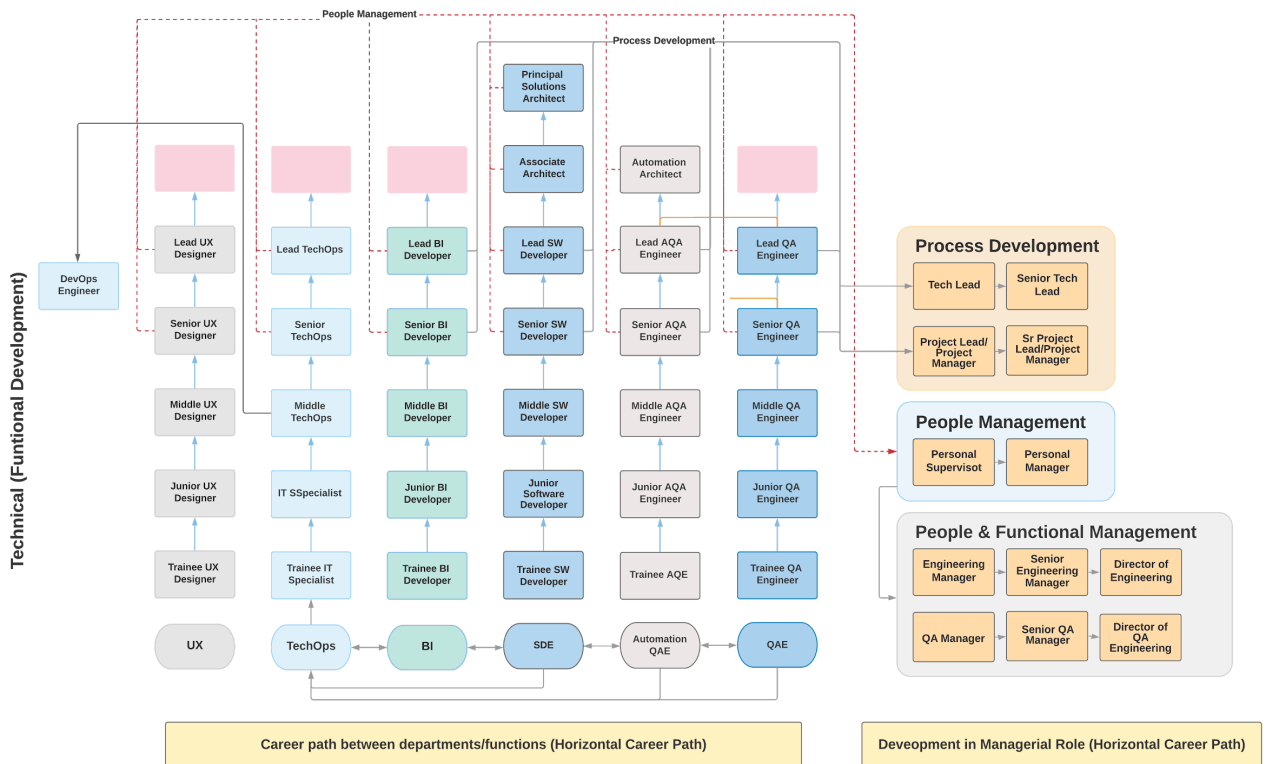
**ARE THE MOST LIKELY TO VALUE AND SEEK MANAGER'S FEEDBACK**

**Looking for guide with goals and follow up, check-ins with Manager**

- develop step by step plan with clear deadlines and reviewing each milestone in time when it should be done.
- details about team's OKR and goals to achieve them.
- can point me to areas where I can improve to be more effective.
- Provide information about valuable trainings/courses/conferences.
- share information about other team's work. Share BIG PICTURE

**64% of those who works 0-2 years are looking for Tech Growth**

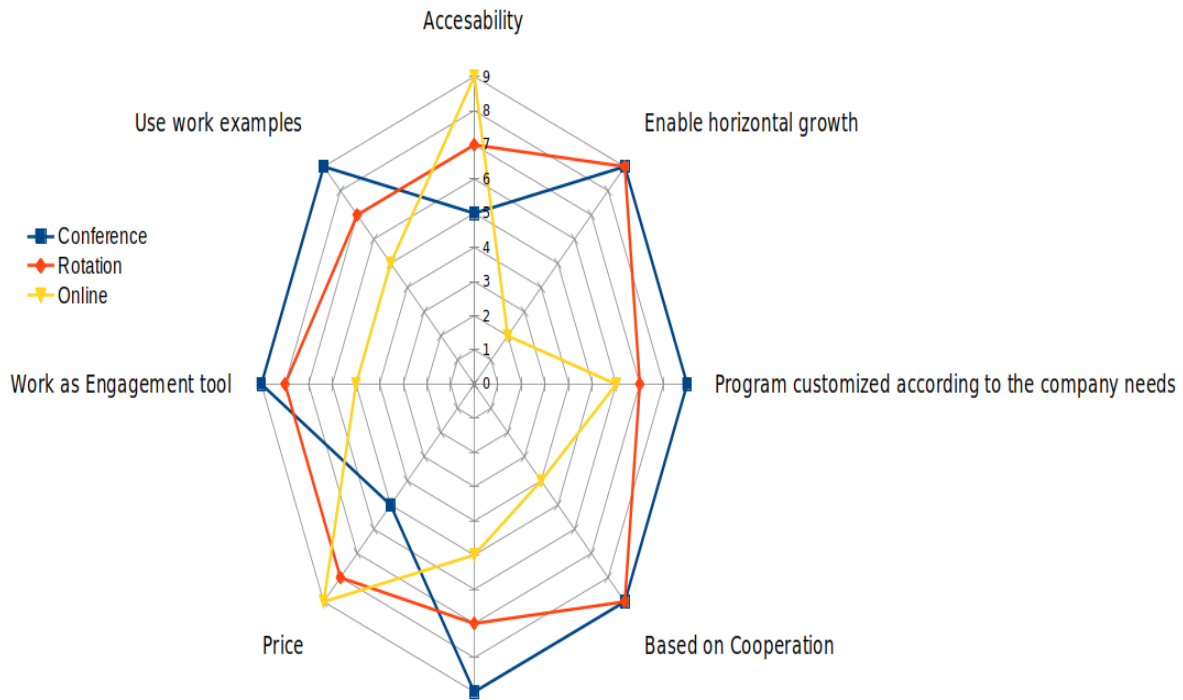
### APPENDIX 5. JustAnswer Career Path Diagram



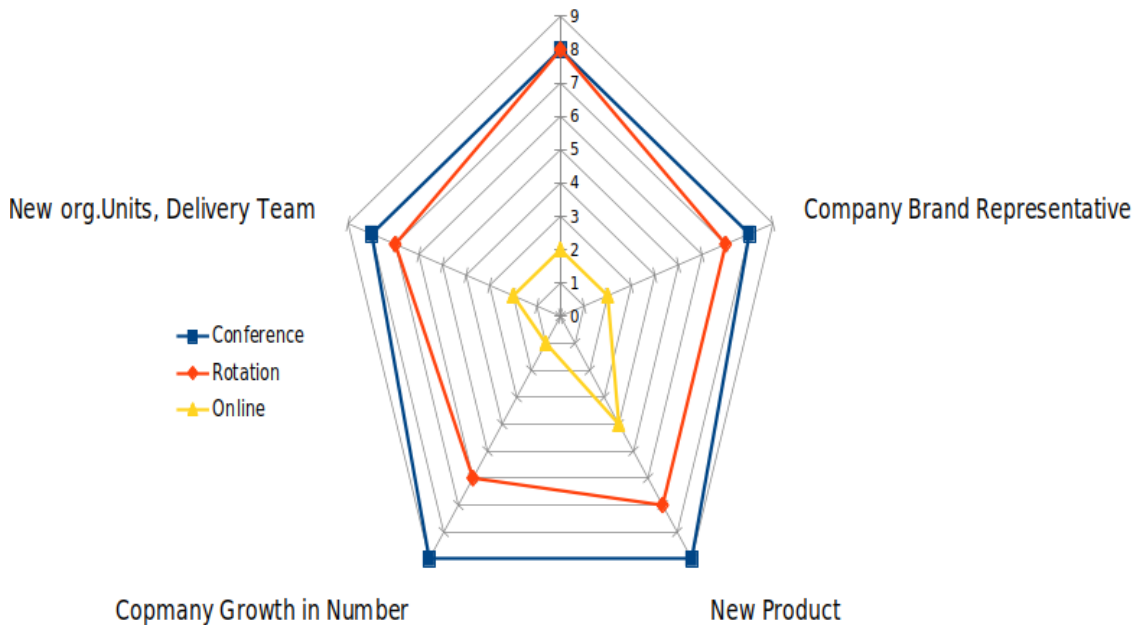


## APPENDIX 6. SWOT Analysis of the Program Components

### Strengths

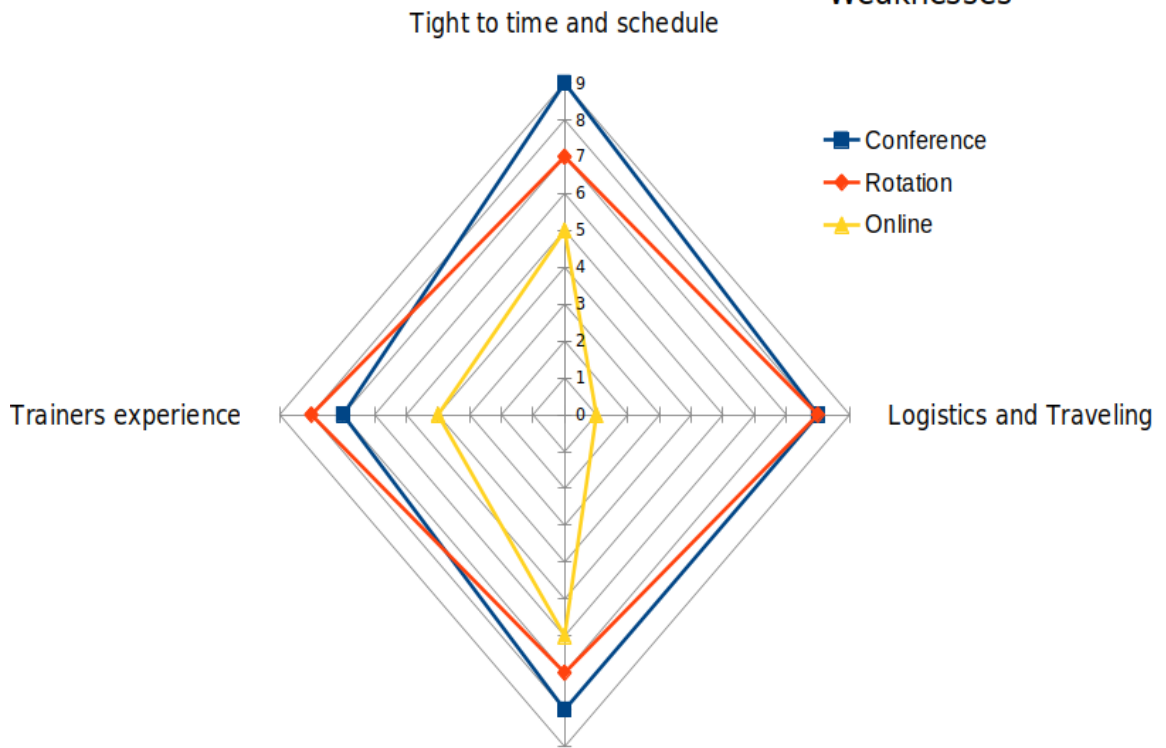


Use for external purpose to match it's hiring needs, etc.

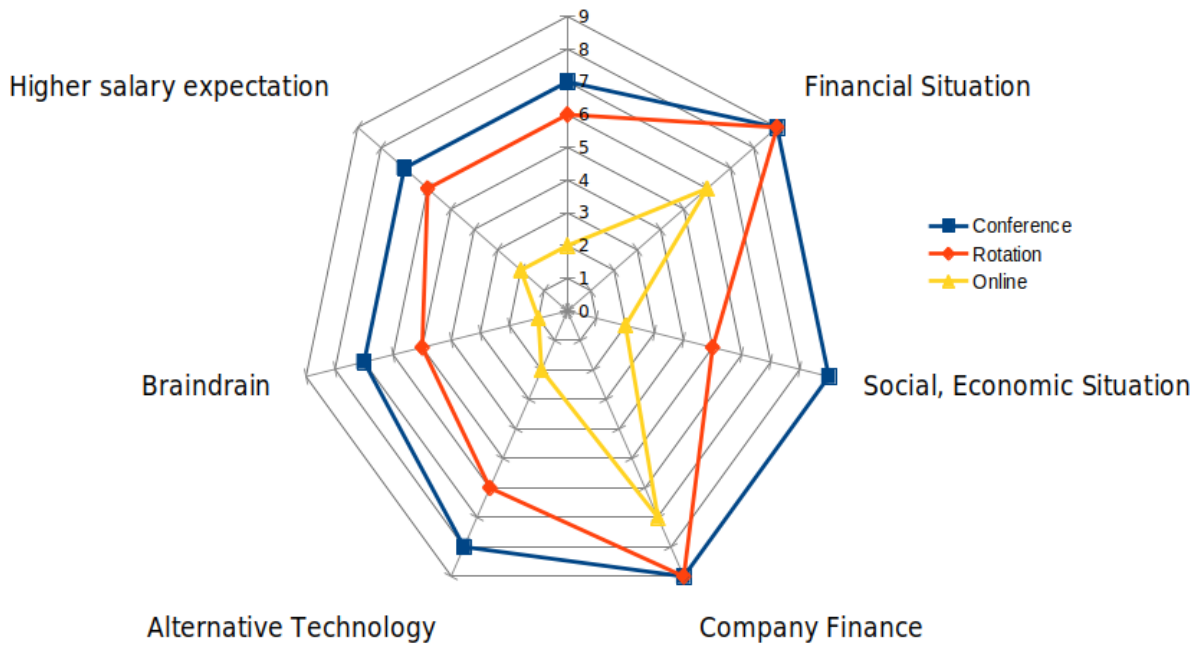


### Opportunities

Weaknesses



Threats



Threats


## APPENDIX 7. JustAnswer Software Engineering Conference Program

		Monday May 29 (SF Holiday)		Tuesday May-30		Wednesday May-31			
10:00	Normal Activities		Normal Activities		Normal Activities				
	Optional Lecture:		Optional Lecture:		Optional Lecture:				
	Busting a Career Move at JA Part 1		Busting a Career Move at JA Part 2		Busting a Career Move at JA Part 3				
		Title	Open	Title	Open	Title	Open		
11:00	Data Updates Getting the Data Model right while updating data		Yes	SP Detective How to master that SP you have to change		Yes	Hard SQL Problems Learning about the common development mistakes can get your story to production faster and avoid bug fixing. Things that trip developers up.	Yes	
	Chatbot architecture: types of chatbots, main components, natural language processing pipelines, types of machine learning models for chatbots.		Yes	Natural language pipeline for rule-based chatbots. ChatScript.		Yes	Machine learning engineering: software engineering practices, data challenges, how to think about ML product		Yes
	What are the best and worst customer experiences		Yes	Data Visualization Tools		Yes	Customer Side-car: Project		No
	Getting Started with Ionic 2, Navigation, and Working with HTTP		Yes	A review of data visualization tools			Putting it all together and shipping to an App Store		Yes
	Planning for Refactoring Legacy Code (1)		Yes	Ionic 2 Components (Basic and Advanced)		Yes	Dependency Breaking (1)		Yes
	S/W Change Categorization. Feedback is your safety net. Unit testing and TDD. Code coverage. S.O.L.I.D principals. An algorithm for change.			Techniques for Change (1) Refactoring with Time Pressure. Sprouting Methods and Classes. Wrapping Methods and Classes. Getting Classes and Methods into a test harness.		Yes	Adapt parameter. Break Out Method Object. Definition Completion. Encapsulating Global References.		
			Yes			Yes			Yes
12:00	Data Updates (workshop)		No	SP Detective (workshop)		No	Hard SQL Problems (workshop)		No
	Pearl architecture: main components, reasons for design decisions, what is where.		Yes	Intro to machine learning: what is it, types of machine learning models, how models are trained, applications, tools.		Yes	Machine Learning for Text Classification		Yes
	Customer Sidecar: Team Prioritization of Features		No	Customer Sidecar: Adding Visualization		No	Customer Sidecar: Project		No
	Getting Started with Ionic 2, Navigation, and Working with HTTP		Yes	Native Mobile Workshop		No	Native Mobile Workshop		No
	Planning for Refactoring Legacy Code (2). Sensing and Separation. Creating and Identifying Dependency Seams. Global and static calls. Pre-processor seams. Linker seams. Object seams.		Yes	Techniques for Change (2) Interception Points. Pinch Points. Refactoring Prototyping. Working with unstructured code. Restructuring monster methods and classes.		Yes	Dependency Breaking (2) Adapt parameter. Break Out Method Object. Definition Completion. Encapsulating Global References.		Yes
	Intro to TEA Pattern CSS Design Patterns Environment Setup		Yes	Grids & Flexbox Icons and Graphics State Life Cycles		Yes	Animations Performance Managing Side Effects		Yes
	Learn how data is used to set the future of JA. What factors determine whether a test is a winner or a loser? What tools do we have to determine data quality? What are the major differences between the data sources we have at JA?								
13:00	Lunch								
14:00	Projects - 4 Hours+		Projects - 4 Hours+		Projects - 4 Hours+				
15:00									
16:00									
17:00									
18:00	Dinner (optional)								
Total Required	6 Hours		6 Hours		6 Hours				



# APPENDIX 8. Employee Development Status Profile

## Your Development Progress



Andriy


**Description**

Title: Sr. Software Develop  
 Level: Senior I  
 Start Date: 01.10.2014  
 Line Manager: John Doe  
 Team: Asterix

**Attachments**

**Performance Review Information**

Link to Review Results  
 Link to Development Plan  
 Top 5 Skills for Development  
 Promotion to Lead Software Engineer: Skills improvement in progress



**Level Change history**

Level changed: 01/01/2018  
 Dates Level Changes.

**Skills Assessment**

Skills Matrix: Link  
 Next Assessment: 01/12/2018  
 Top 5 skills: C#, .Net, JS, Python, SQL  
 Top 5 skills to develop: System Design, Infrastructure, Technical Assessment, Technical Vision

**Activity Trainings**

Training Fulfillment Status  
 Selected trainings: Link  
 Rotation Team: Data Analytics Team  
 Date: 17/10/2018  
 Status: Completed  
 Feedback: Link

**Conducted Training**

JASEC 2018, stream workshop leader (Machine Learning Stream)  
 Lunch & Learn: Chatbot. The secret Scheduled  
 Other Trainings: None  
 Rotation Mentor Name: Alex L  
 Status: plan is prepared

## APPENDIX 9. Calculation of Direct and Indirect Expenses

<b>Expenses (direct, indirect)</b>	<b>Hours</b>	<b>cost per hour</b>	<b># of ppl</b>	<b>Sum</b>
Design and development	220	\$22.73	n/a	\$5,000.00
Promotion (perks, design, other)			n/a	\$500.00
per diem	30	\$7.00	40	\$1,400.00
Evaluation	76	\$15.00		\$1,140.00
Participants (cost per hour spent in Conference)	30	\$10.00	120	\$36,000.00
Facility rent				\$308.00
Logistics				\$4,292.00
Rotation	35	\$10.00	60	\$27,300.00
Online paid courses				\$280.00
<b>Total</b>				<b>\$76,220.00</b>

## APPENDIX 10. Project Return on Investment

### 1. Saving on Number of Bugs (errors) reported a year and cost for fixing them

Cost of bug fixing	hours in a year	Cost/person	Total
Before	96	1542.857143	\$185,143
After	64.32	1033.714286	\$124,046
<b>Saving</b>			<b>\$61,097</b>

### 2. Saving on Time for Task Completion

Task completion	Hours	Cost per hour	Hours of helper	Cost per hour	Total per person	Total
Before	96	\$13.00	96	\$20.85	\$3,249.60	\$211,224.00
After	28.8	\$13.00	28.8	\$22.00	\$1,008.00	\$65,520.00
<b>Saving</b>						<b>\$145,704.00</b>

### 3. Saving on Recruitment

Saving on Recruitment	Hours	Number of people involved	Cost per Hour	Total
Recruitment Cost	160	1	\$12.00	\$1,920.00
Onboarding and adaptation of newcomer	168	3	\$15.00	\$7,560.00
Average Salary for Middle Strong BI Developer	3000			\$3,000.00
External Interviews	7	4	\$18.00	\$504.00
Mentoring newcomer	40	1	\$21.00	\$840.00
<b>Total</b>				<b>\$13,824.00</b>
<b>Total For 4 position</b>				<b>\$55,296.00</b>

### Expenses on Rotating a Software Developer to SQL Developer

	Month	Total
Salary increase (in case if the salary range differs from current and future salary)	\$400.00	\$4,800.00
Rotation Cost		\$800.00
		<b>\$5,600.00</b>

For rotation and salary Increase of 4 Software Developers were spent ~ 22400 USD. Total Saving - \$32,896.00