

BUILDERBYTES

We are looking for startups that dare to create a new generation system that allows you to collect / analyze / interpret data on the activity of builders!



There are many tasks at the construction sites. This is a very complex process, where a lot depends on human resources, i.e. builders. Of course, there is a machinery, there are building materials that compose almost entire cost of construction, however, their correct and timely use and proper planning depend on people. Therefore, we depend on our human resources. The higher the qualification - the higher the impact on the construction.

At the moment there are no automated solutions for tracking builders' efficiency. Most of the things are tracked after actions took place. Disputes, losses over time, dissatisfied customers, financial losses, etc. are coming afterwards.

At this stage, there are different attempts to assess the efficiency of the builders. **The first one** is an access control system. It provides the data on how many people are there, at the construction area. Although there are some problems:

1. RFID cards are used in different ways. Those RFID do not identify a person unequivocally.
2. Usually, during peak hours several people enter with one card. So the total number in the ACS (access control system) report and the actual number of people at the site do not match.

The second one is analysis by timekeeping. Dedicated timekeepers come to the construction site and record the activity of each builder. When they came, when they were out for a smoke break, when they were out for restroom, when and with whom they were having a casual chat, when they went to lunch and returned, etc. All the activities that the builders do during working hours. The analysis was carried out at randomly selected construction sites, on randomly selected days. Various reasons for downtime were identified ("Useless work", "Inaction", "Uncoordinated action", "Error of action", etc.). Here are the main reasons:

- Smoking
- Conversations on a mobile phone
- Water, tea
- Communication between employees
- Planning meetings
- Search for toolboxes
- Waiting for the technician (type of equipment to indicate in the note)
- Waiting for material
- Waiting for help from an ancillary
- Lack of construction readiness
- Garbage collection
- Prohibitions from supervisory and supervisory bodies
- Ordering Material
- Restroom
- Delays
- Lunch time

- Time of arrival from lunch

Also, work was done to compile the cartography of the facility to analyze the efficiency of the location of key points:

- Material storage areas
- Instrument storage locations
- Restrooms
- Smoking areas

According to the results of the activity tracking, we came to the conclusion that the following main types of construction works have a great potential to increase the efficiency of builders:

- a. Reinforced concrete works
- b. Bricks laying
- c. Facade works
- d. Interior trim
- e. Utility works

Work types	Percentage of work in total costs	Percentage of work in total time	Time loss during working hours
Reinforced concrete	30%	45%	20%
Bricks laying	12%	10%	25%
Facade works	18%	15%	20%
Interior trim	10%	5%	10%
Utility works	15%	20%	20%
Other works	15%	5%	3-5%

All these works are important for improving the efficiency of construction. Our vision is that all these works should generate data in real time, so that we could automatically analyze it in the future.

There is a vision that a potential product may have 3 evolutionary stages:

1. **Who? When?** Who is on the construction area, what time did he come in? Now we are testing systems with face recognition. There are many other different solutions.
2. **Who? Where? When?** Who located where and when it's happening (GPS at the construction site)
3. **Who? Where? When? What?** A system that allows to get information about who is busy with what and in which location? Track the activity.

BUT this system is NOT a punishing tool for builders or contractors.

We want to create a system that will help us and our contractors to make better decisions.

The idea of creating a system, that allows you to analyze data on the activity of builders, is inspired by sports, i.e. the processing of data to improve sports performance. Good examples are:

- use of SAP in football (German Football Federation)
- the use of SPORTRADAR in basketball (NBA)
- use of the Strava, app for athletes.

Now we will take a closer look at how the SAP platform can work with large data and scenarios for the use of these technologies in sports. The company SAP SE announced SAP Sports One - a new solution for playing football. On the SAP Sports and Entertainment forum, which was held in Munich on the "Allianz Arena" the first details about the functions and capabilities of this solution were disclosed in SAP. According to the developers, this is the first cloud-based solution based on the SAP HANA platform, which was created specifically for sports. It represents a single platform for the management of teams and players, as well as for the analysis and optimization of sports performance. The new solution is the next step after SAP Match Insights, which was developed last year for the German Football Union for the preparation for the World Cup in Brazil. The solution consists of the following components: team management, training planning, physical form management of players and analysis of indicators. It not only facilitates the management of master data, but also provides a simple platform for teamwork to manage players and teams on any device, stressed in SAP. Detailed tracing of medical injuries and medical appointments, as well as diagnostics of indicators, will be possible; this information will constitute a comprehensive health card for each player. In order to analyze the results of the match, the integration with such information providers as Opta Sports Daten AG and Prozone Sports Ltd is planned. Accumulated information will help plan training, prevent injuries, adapt the tactics of the game and develop the team. The target audience for the new product is team managers, sports directors, trainers, football agents, video analysts and medical personnel. The first edition of SAP Sports One is designed specifically for football, in particular, for European representatives of this type of sport.

Sportradar, which collects and analyzes data in various sports, was founded in 2001. Its central office is located in the Swiss city of St. Gallen, offices are open around the world, and the product range extends from digital maps and applications to research solutions like radar360. Sportradar has already created a system for visualizing players statistics obtained from the NFL service Next Gen Stats. Next year, the company plans to develop a program together with its partner, Second Spectrum, to track the results of NBA players. At the same time, a tool called radar360 is already able to facilitate obtaining detailed data and customize displayed data for analyzing various scenarios and situations in the game.

"Strava" is an Internet portal and a mobile application for people who are keen on jogging and cycling. The project allows athletes around the world to share their training results and compete with other users. This mobile application is a GPS-navigator that tracks the route of a runner or cyclist, integrates it into the system and allows you to evaluate your own workouts. The information for each route is stored on the server. Each user of "Strava" can view detailed information about the trainings of his friends or team members. Within the project, all users can compete in individual and team races. The path, distance and time are parameters that determine the progress of each competitor.

If you have an idea or a startup that can help us to solve mentioned above problems, please refer to this contact:

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We are looking for those, who are ready to create or extend their business at BI Group site, following with global markets afterwards!

You can send us your materials until 15.07.2018