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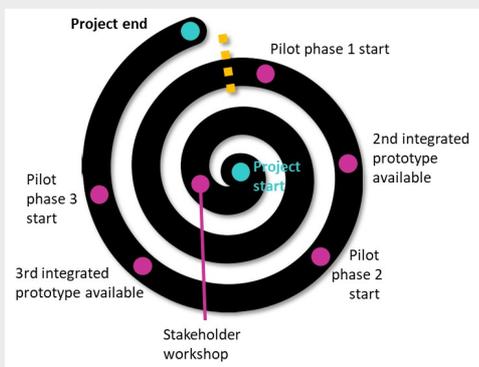


# Big O Newsletter #1

## WHAT IS BigO?

The overall goal of the BigO project is to develop a big data platform that collects and anonymizes behaviour data via a set of sensors in order to provide data-driven services (including advanced analytics and sophisticated visualizations) for policy advising, policy planning and clinical advising concerning childhood obesity.

The platform will be evaluated technically and scientifically via pilots that will take place in real school and clinic environments in three phases.



## BigO TIMELINE

The spiral development model adopted by BigO to allow close engagement between technical and non-technical partners and support agile development methodologies with continuous updates into design and development.

[Read more >](#)



## STUDENTS USING BigO APP IN SCIENCE PROJECT

Demonstration shows the data collection system works and can be deployed for researchers aiming to map relevant environmental factors involved in obesity growth in European school children.

[Read more >](#)

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## THREE QUESTIONS TO THREE BigO RESEARCHERS

Find out what the people creating the BigO project are all about.

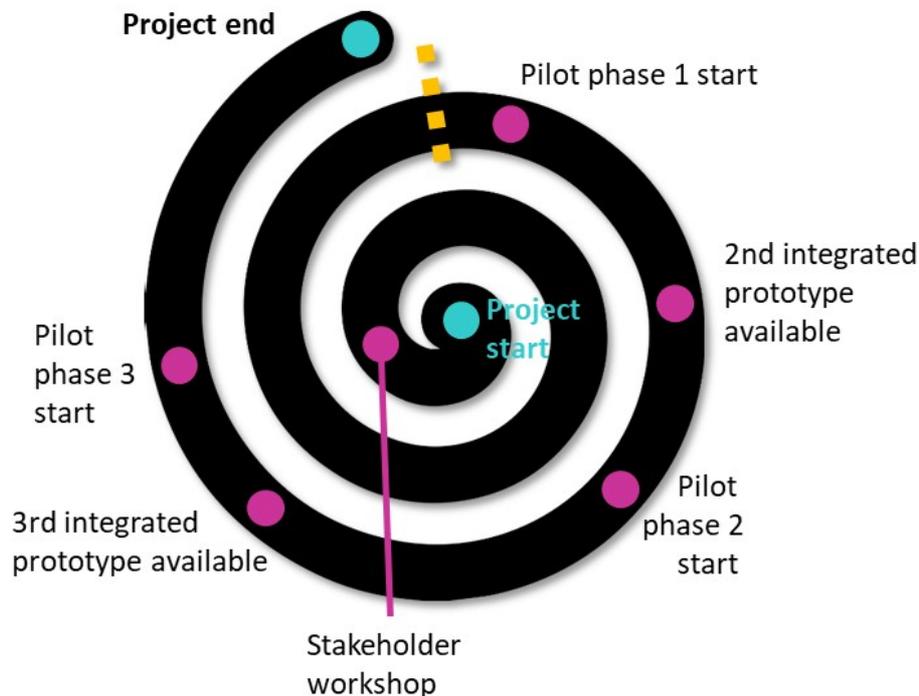
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## BigO TIMELINE

BigO has, during its first year, been engaged primarily in planning and development activities with the aim of being able to deploy the research activities in years 2 to 4 with precision.

To this end, use-cases, describing in detail how participants would engage with BigO tools, were developed. The objective was to define how the project should be conducted. This has, in turn, enabled the project to select the appropriate technology to use and to build the interface and the back-end with the dimensions foreseen by the initial studies.

The task of building the data-collection and analysis environment was performed in parallel with the development of the user interface. Both tasks were completed in November 2017.



In short, the BigO system will allow Public Health Authorities to evaluate their communities based on their obesity prevalence risk and to take local action, based on objective evidence.

To get there, a number of activities would have to ensue; firstly to consider what data to collect, how to collect it, devise a system for processing and analysing collected data, build tools to be used by participants, recruit and instruct participants (large scale), and so on until an entire ecosystem; the BigO project had been shaped.

The first step was to build use-cases, describing in detail how participants would engage with the BigO tools. This includes in what context devices would be used, what environments and situations would be likely, i. e. how to simplify the interaction between the user and the interface.

Secondly, the user interface – the app – had to be built according to the preliminary assessments of the project team, bearing in mind the hardware available in smartphones. In order to be able to access and analyse the collected data, extensive work was also put into building a secure system for file transfer and storage of images and geolocation.

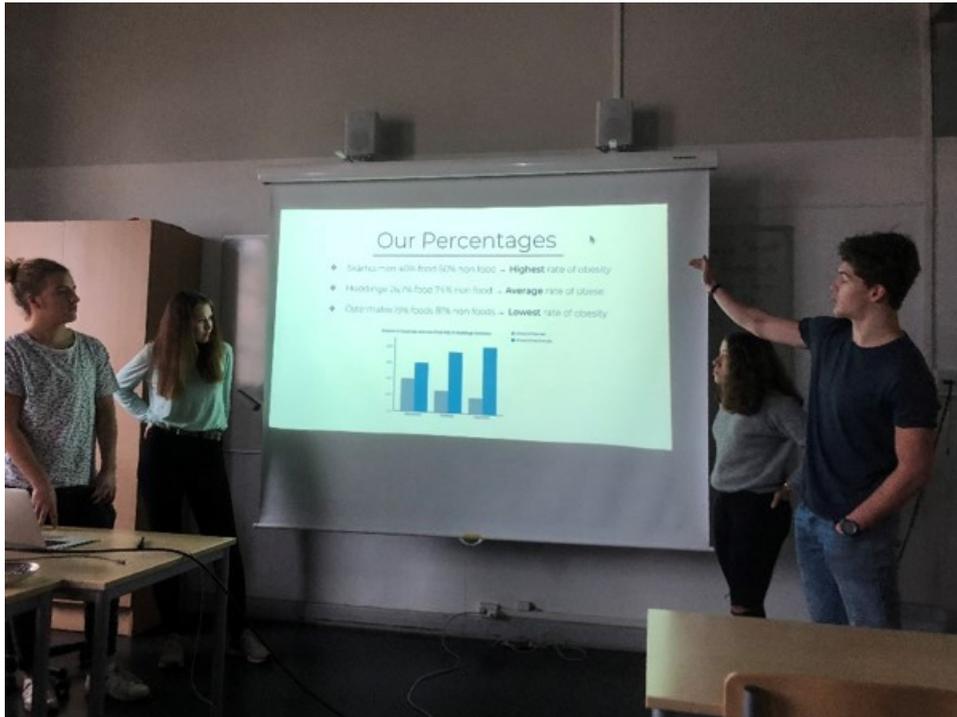
By November 2017, the work was completed and tests started in Stockholm, at the IEGS school. To everyone's delight – and no little amount of surprise – the trial was a success; the app worked as intended and the user-generated content was collected as expected.

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## STUDENTS USING BigO APP IN SCIENCE PROJECT

Demonstration shows the data collection system works and can be deployed for researchers aiming to map relevant environmental factors involved in obesity growth in european schoolchildren.



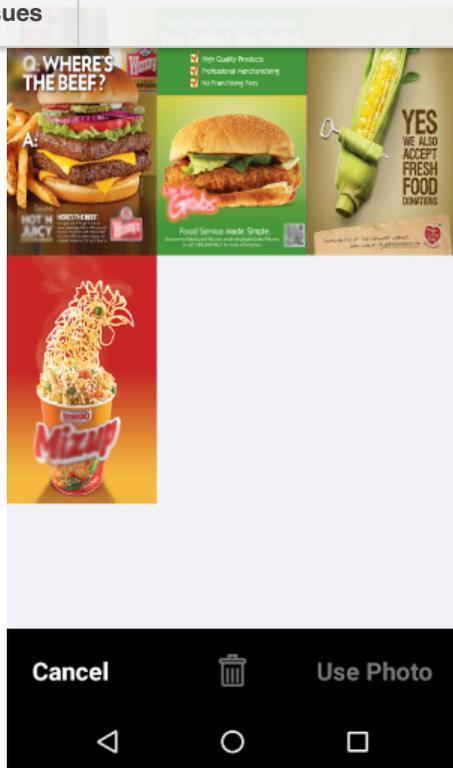
Students in the second year of the natural science program with social science specialization participated as citizen scientists in a 5 day data collection exercise during Project Week at Internationella Engelska Gymnasiet Södermalm (IEGS).

This year students in NS2A used the BigO app to document all food advertisements seen in three different neighborhoods around Stockholm with varying rates of average household income and adolescent obesity.

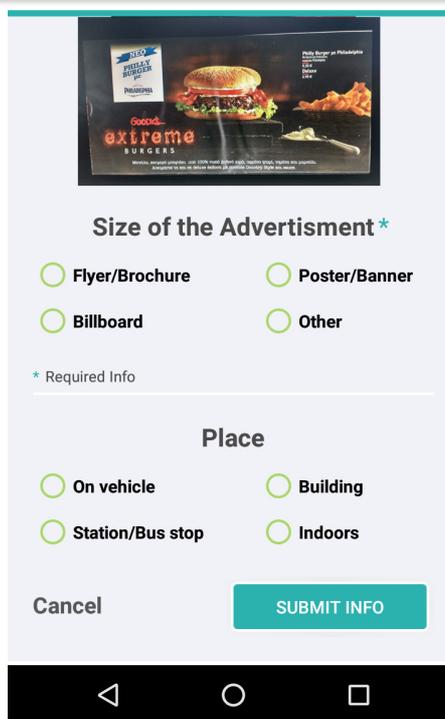
Afterwards the students analysed the collected pictures in order to quantify the types of advertisements per region. The students focused on the percentage of food advertisements in relation to the total number of advertisements, in each of these areas.

App trials have taken place on two more occasions in November; at IEGS and at Wageningen University, the Netherlands.

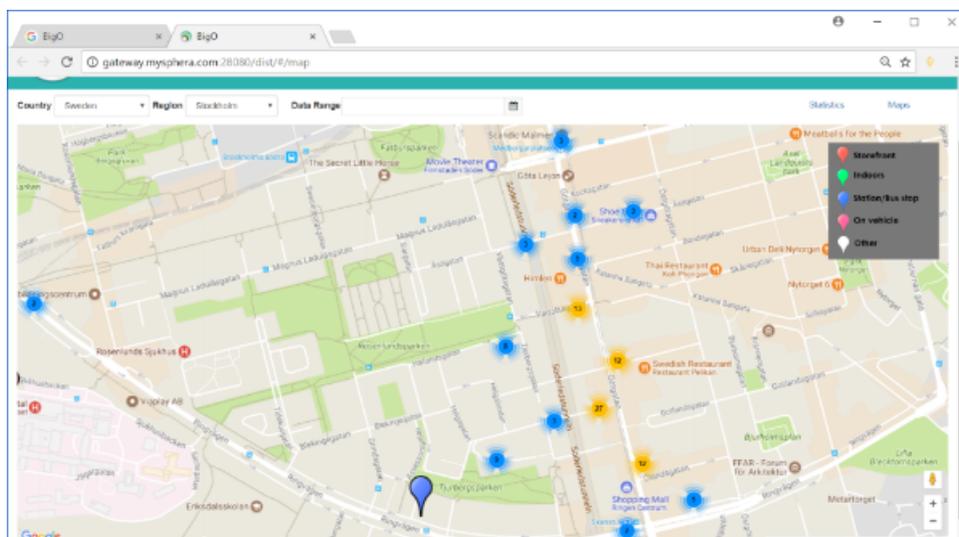
Below are two screen-shots of the app, (the first displaying the picture-selection feature, and the second the Advertisement info feature):



The user decides what photo to upload, depending on quality or how well it captures the object. (The images on the app screen are examples only.)



The Advertisement info feature in the app allows researchers to group ads in relevant segments for improved data analysis.



The above screenshot shows a "heat-map" of where in the Borough of Södermalm in Stockholm pics were taken and uploaded to BigO servers. Using this tool, researchers can map types of food advertisements with the environment in which they were found.

## Interviews with researchers

Find out what our researchers are doing and what their ambitions for BigO are



**Dr. Ioakeimidis (Ethics and Safety Advisor), could you tell us what you are currently working on in the project?**

Right now most of our efforts are dedicated to the coordination and the practical requirements for completing the initial set of data collection from high school students here in Stockholm.

During November, we distributed the BigO mobile app to 20 IEGS students, asking them to take pictures of food advertisements as they encounter them across their everyday life.

In December, 25 students were tasked to use the BigO app and visit three different areas of Stockholm

obesity prevalence, ranging from the "best" to the "worst". We want to see if there are significant differences in the quantity and the context of the food advertisements there as we start to analyse results.

#### Does this meet with the plans drawn up years ago, and have you had to rethink the initial plans and objectives once practical challenges crept in?

I think that we are ahead of the project schedule (something I have personally not experienced before in any project), since we were not really planning to get any significant data collected before May 2018. We decided to reach out to the student population early in order to let them use and evaluate the system, allowing them to have a meaningful effect to the future developments. We can happily say that the first uses of the system were very successful, both from a user-experience and from a technological perspective. Let's hope that this level of success and dedication will continue across the duration of the project.

#### How does the project compare to other projects in terms of innovation?

In other projects, the promised innovations are impressive, but unfortunately it is quite often that they are never fully developed and also rarely used to the extent that it is envisioned.

In BigO based on the first signs of the system use, we believe the planned innovations will mature nicely across the project and that the targeted population will adopt them. All in all, I am very optimistic that the outcomes of this project will be highly innovative, while being widely adopted by the target users.



#### Dr. Bergh, (CEO of Mando, a clinical site in BigO) what is the role of Mando in this project?

Mando is one of three clinical partners within BigO.

#### And what is your soft spot when it comes to the BigO project?

##### Why did you decide to participate?

The treatment outcome of obesity is poor especially for teenagers. New methods are needed. Teaching patients how to eat and how to feel full has proven successful in a randomized control trial. We hope to implement this method in other clinics.

#### What do you hope for as the end outcome of BigO?

That everyone in need will be able to access evidence-based technology in order to eat normally and maintain a healthy body weight.



#### Ms. Perez (Project manager at MySphera, responsible for back-end in BigO), what are your responsibilities in the BigO project?

As project leader of "System design and integration" and "User interfaces", I work very closely with all the partners to have the platform and the portals covering the needs of the project.

For MySphera, this means to provide the platform, integrate all the components, test them and cover the Service management aspect of the BigO. Regarding "User interfaces", we provide the interfaces for the end-users (at schools, in clinics, etc.) involved on BigO

#### And what is your current task in the project?

MySphera has a team of developers and system administrators that I'm coordinating with the objective to provide the best service for BigO, especially in terms of system design and user interfaces.

service for partners and end-users.

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A substantial part of the work consists of organising the actual data collection - mostly intended to be performed in educational environments such as schools and universities. This work entails numerous planning sessions and production of material to be used. Albeit this is a very important component in BigO, it is also fairly difficult to visualise all the work that goes into it. We will therefore encourage you to [make contact](#) with the participating schools if you want to know more about what they do.

In research, an important success factors is connecting with other reserarchers and stakeholders that can help improve the studies. BigO is committed to partnerships in research, to engaging with public health authorities, businesses and the population of the EU. To make BigO a success, we urge you to [contact us](#) if you want to share or know more about what we do to prevent and combat childhood obesity in the EU.

## More

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