ATOMIUM EUROPEAN INSTITUTE
FOR SCIENCE, MEDIA AND DEMOCRACY

REISEARCH

CITIZEN ENGAGEMENT AND MEDIA CAMPAIGN ON DIGITAL SKILLS

Analysis and results of the launch of REIsearch 2.1

Atomium – European Institute for Science, Media and Democracy (EISMD) – brings together some of the most authoritative universities, newspapers and businesses in Europe in the first intersectoral platform to promote knowledge sharing and "out of the box" thinking on issues regarding the development of a European knowledge society.

Atomium – EISMD was launched publicly by the former President of France Valéry Giscard d'Estaing and by Michelangelo Baracchi Bonvicini, together the leaders of the institutions engaged, at the European Parliament in Brussels during the first conference on the 27th of November 2009.

Atomium - EISMD seeks to balance the interests and needs of six different societal actors: researchers, universities, businesses, media, policy makers and, most importantly, citizens. Focussing on the role of science in the 21st century, seeks to align the five key areas:

1) Science-Based Policy Making
2) Science Communication
3) Education
4) Equality and Equal Access
5) Innovation through Collaboration

Aligning these categories with each other will enable European citizens to successfully account for all the varied faces of society in an ultimately positive way.

In 2016, Atomium-EISMD launched the REIsearch Platform, with the support of the European Parliament and European Commission, as a bridge to linking citizens, researchers and policy makers on topics linked to the scientific research and to societal challenges that Europe will face in the years to come.

After the first cotizen engagement and media campaign on Chronic Diseases (April 2016), REIsearch has launched the campaign on the Next Generation Internet (April 2017) and is showing how a technology tool, coupled with a broad network of leading media, research institutions, researchers, civil society organizations, and citizens, can help policy makers to make better use of all knowledge and experience - wherever they may come from - to make better decisions based on evidence and experience, for the benefit of society as a whole.

Atomium - EISMD is organised under the Law of Belgium as an International Non-Profit Organization (Association International Sans But Lucratif).

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Author of the report:
Guido Romeo, *Editor in Chief, REIsearch*

INDEX

REI

EXECUTIVE SUMMARY

"The digital revolution is far more significant than the invention of writing or even of printing". Douglas Engelbart, father to the computer mouse, the hypertext language as well as the first computer networks to become what we now know as the Internet, made this observation 50 years ago. Today we are still struggling to fully grasp the full impact of what is now known as "digital transformation". This is a process not simply technological but foremost cultural and social.

As recently noted by Oecd[1], this transformation has been underway for decades but is now accelerating affecting all economic sectors. The most visible feature of this change is the development of almost universal connectivity and ubiquitous computing and drawing on the generation and utilization of vast amounts of data. This transformation has positive impacts on productivity for many firms and sectors, but rarely has translated into stronger productivity growth at the economy-wide level and to widespread benefits across society. Larger impacts could result from efforts to foster a more wide-spread diffusion of digital technologies to all firms, notably to small and medium-sized enterprises (SMEs); greater investments in critical complementary assets such as firm-level skills, organisational change and process innovation; as well as support for further structural change to enable the growth of new business models and digitally-intensive businesses which are very needed for stimulating economic growth, employment and societal wellbeing in Europe.

However, the wide scope of these technological changes creates significant uncertainty about their future directions and impacts. Indeed, predictions about technological timelines are often inaccurate and overestimation of their short-run impacts is common. The list of transformative technologies in the digital area is long, but some of them have the potential to be particularly far-reaching, notably Big data and AI, the Internet of Things (IoT) and blockchain. These transformative technologies present some common features, notably their dependence on large data sets and a range of digital technologies. They also have a strong potential to improve the design, implementation and evaluation of public policies.

These technologies will also dramatically impact employment scenarios in the form of robots, artificial intelligence, and through strategies like customer self-service. According to the World Economic Forum[2]: "current trends could lead to a net employment impact of more than 5.1 million jobs lost to disruptive labor market changes over the period 2015–2020." The Forum takes the view that 7.1 million jobs will be lost as a direct result of many innovations, with the majority of positions "concentrated in the office and administrative job family".

On the societal front the development of an ever wider "infosphere[3]" stimulated by social and new media and more generally the rise of cybersecurity threats both to individuals and organizations, are profoundly redefining the concept of privacy as well as our social structures as well as the way we interact individually and collectively.

Information and communication technologies have brought about a Fourth revolution in the long process of reassessment of humanity's fundamental nature and role in the universe as we are not immobile, at the centre of the universe (Copernican revolution); we are not unnaturally distinct and different from the rest of the animal world (Darwinian revolution); and we are far from being entirely transparent to ourselves (Freudian revolution). ICTs are now making us realise that we are not disconnected agents, but informational organisms (inforgs), who share with other kinds of agents a global environment, ultimately made of information, the infosphere (Turing revolution).

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1. *Transformative technologies and jobs of the future - Background report for the Canadian G7 Innovation Ministers'Meeting - https://www.oecd. org/innovation/transformative-technologies-and-jobs-of-the-future.pdf*
2. *http://www3.weforum.org/docs/WEF_FOJ_Executive_Summary_Jobs.pdf*
3. *The Fourth Revolution. How the infosphere is reshaping human reality - http://www.philosophyofinformation.net/books/the-fourth-revolution-how-the-infosphere-is-reshaping-human-reality/*

In this context REIsearch's last year of work has been dedicated to develop bridges between science and society and new spaces for increasing public awareness as it has become crystal clear to people that they live in an innovation society and that, at the same time, this innovation society is not always "for the best". Indeed, the diffused malaise that has grasped politics across Western countries is inherently linked to a growing discontent and distrust with innovation that does not play in favour of the majority, and that people's representatives lack the willingness or ability to reverse this course. Alarmingly, scientists, entrepreneurs, experts, and journalists have been clumped together with policy-makers into a category of self-referential and out-of-touch elites accused of representing their own private interests rather than public needs. The raise of social media, with the exponential growth in the quantity of information and sources available, the speed of news propagation and the formation of eco-chambers, has only accelerated and radicalised this phenomenon.

And of course, this is not just a matter of perception or misinformation. Rising inequality, decline of the middle class, reduced social mobility, and persistent unemployment are all real. Public opinion matters in a democratic society and such concerns are to be addressed swiftly. Decades of social investments to build people's capabilities have made them an indispensable partner in the innovation process. If people don't find a place in the innovation society where they can thrive, and don't trust institutions to help them do so, then innovation will never really become an engine for collective prosperity. On the contrary, innovation might turn into a source of social unrest, unleashing violent reactions against the same people and institutions that are tasked to protect and empower them. Without public trust and citizen engagement, institutions lose both their purpose and power to handle the uncertainty and disruptive forces in a fast-changing and globalising world.

Bringing citizens and their organizations together with researchers and public institutions, building trust between these actors and fostering genuine debate and exchange of information as a basis for collective action and social progress has never been so important. This is the ambitious goal of project REIsearch.

REIsearch has tackled this challenge taking action on two levels as illustrated in this report to help assess and develop citizens' digital skills Big data, analytics and AI; Social and New Media; Internet of Things Cybersecurity and Privacy.

The first is a renovated platform (REIsearch 2.1) with new tools and functionalities allowing citizens to interact with highly qualified researchers and receive answers on topics of their interest in the area of computer science (this was selected as emerging as the most popular in across all online courses). This new functionality which required the development of dedicated software, has been coupled with new materials and video explanatory lectures on the four main areas detailed above.

The second line of action, consistent with REIsearch's previous endeavours, has been a citizen and media engagement campaign on the same four areas. The campaign, running for three weeks from mid-October to the beginning of November 2018 in six languages (English, French, German, Italian, Portuguese and Spanish) saw 20 articles published in both on the paper and online editions of Atomium media partners (Der Standard, El País, Frankfurter Allgemeine Zeitung, Público, Il Sole24ore, Les Echos and Euroscientist) which account for a potential readership of 6 million and through a social media campaign reaching a potential target audience of over one million online users.

The present edition of the REIsearch campaign engaged more than 66.000 people on the new platform with more than 92.000 pages viewed (these figures were recorded at the beginning of November and continue to evolve upwards). The "stickiness" of the new platform has also improved above expectations as 17% of users come back to the site (almost 20% above the set target). The gamified survey to evaluate one's digital skills has been played by 26.000 users among which 12.000 (45%) completed the game in full. As above, these figures keep progressing indicating a growing interest from users.

As in previous editions the campaign helped circulate a survey which this year adopted a new gamified survey, the iNerd game, to stimulate engagement of respondents. As this report was going to press the survey collected complete answers from almost 12.000 users across the six language groups and remains active as users may play the quiz multiple times earning different badges in the four areas of expertise (Big data, analytics and AI; Social and New Media; Internet of Things Cybersecurity and Privacy) and share them through their social channels. Results of each session also prompt the user to explore the most appropriate contents on the REIsearch to develop his competences precisely in the area where he scores lowest.

Results from this survey exercise, although too small to constitute a scientifically representative sample, are in line with previous data indicating a shortage of digital skills across Europe (less than 1 in 10 respondent is proficient enough to earn the "Nerd in Chief" badge, while more than 50% are Digital Mr. Beans) especially among women.

The most important indication from this data is the interest of applying a gamified approach and online tools to interact with citizens online and their applications to learning and skill development.

We hope this approach may be further developed in the future in Atomium and REIsearch's work.

1 - REISEARCH

"REIsearch wants to successfully overcome the challenge of connecting the experience of EU citizens and the expertise of EU researchers to support policy makers in taking decisions that will affect society as a whole."

Valéry Giscard d'Estaing and Michelangelo Baracchi Bonvicini, Atomium – EISMD

"Some fear mass unemployment because of a looming robotics revolution. These concerns are completely understandable. We cannot - and should not - ignore them. But it is inevitable that some jobs will change. Some will also disappear. However, I do not believe in the mass unemployment scenario. The scenario I believe in is one of innovation, adaptation and new skills."

Andrus Ansip, European Commissioner for Digital Single Market and Vice President of the European Commission

"Social media and networks that have dramatically changed the way people exchange opinions, get informed and take advantage of online creative content. They allow unprecedented levels of freedom of speech and media pluralism, while the perfect integration of intelligent, wearable objects and the use of virtually augmented reality will make the social networks, social media and platforms of the future the preferred channel For communication, exchange, business, learning and acquisition of knowledge. However, there are challenges that we need to address with vigour."

Roberto Viola, Director General of DG CONNECT

INTRODUCTION

REISEARCH - A necessary bridge between citizens, researchers, and policy makers

REIsearch was proposed by the European Parliament as a Pilot Project to become a bridge connecting citizens, researchers and policy makers on topics linked to the scientific research and to societal challenges that Europe will face in the years to come.

REIsearch is a non-profit European initiative co-funded by the European Commission to demonstrate how a technological tool, coupled to a broad network of leading media, research institutions, researchers, civil society organisations, businesses and citizens, can help policy makers to make better use of all knowledge and experience - wherever it may come from - to make better decisions, based on evidence and experience, for the benefit of society as a whole. It aims to provide a secure and reliable platform which encourages information-sharing and dialogue, while ensuring the privacy of user data.

REIsearch is promoted by Atomium – European Institute for Science, Media and Democracy, launched eight years ago at the European Parliament by the former President of France Valéry Giscard d'Estaing and by Michelangelo Baracchi Bonvicini.

WHAT

REIsearch is an online tool that brings together different and existing communities around specific challenges with the aim to bring together their experience and expertise to the benefit of society as a whole.

REIsearch communities are built by bringing together individuals and organisations around specific challenges, starting from the societal challenges as outlined by Horizon 2020, the EU's Research and Innovation programme, and reflecting the policy priorities of the Europe 2020 strategy:

- Health, demographic change and wellbeing;

- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy;

- Secure, clean and efficient energy;

- Smart, green and integrated transport;

- Climate action, environment, resource efficiency and raw materials;

- Europe in a changing world - inclusive, innovative and reflective societies;

- Secure societies - protecting freedom and security of Europe and its citizens.

For the beta test of REIsearch, in 2016, the platform opened on the challenge of **health**, **demographic change** and **wellbeing**, and more in particular of **chronic diseases**.

In 2017 the core topic of the campaign and platform was **NGI – Next generation internet**.

The 2018 deployment and upgrade have aimed at consolidating this work focusing on the **digital skills** Europeans shall develop to ensure their quality of life and the competitiveness of the Union.

REI

TECHNICAL FEATURES AND IMPROVEMENTS

Technical work to enhance the REIsearch platform aims at increasing "stickiness" to retain users on the platform and raise frequency and length of visits. To achieve this goal, Atomium EISMD technical team have worked with subcontractors and partners both to re-organise and fine-tune existing pages and functions and to create new ones. The following sub-objectives have been identified to facilitate the achievement of the general objective:

1. To clarify the value proposition, based on the needs of the different target audiences addressed, starting with citizens.

2. To improve existing functions, and particularly the search engine and data visualisation tools, and to realise data collected via the campaigns in open format.

3. To create new content pages as well as new functions (particularly the magisterial lessons function and the "ask a researcher" function)

Homepage

The welcome page of the platform, also called dashboard, not only allow the user to access the various sections of the website, but present to the user the three main innovation of this year: the gamified survey, the magisterial lessons and the "ask a researcher" function to allow users and researchers to interact on the platform following the social media paradigm.

The main menu include links to the following section of the platform:

- My questions: here the user can see his questions submitted to researchers, see the status of each request and read the response.
- Discussions: opens the platform forum.
- More on CS Initiative: through this menu the user can read detailed information about the thematic areas.
- About: contains useful information about the platform and the involved partners.
- Results and statistics: this section shows, in real time, statistical information about the survey.
- Initiative: is a link to the past results of our initiatives.

The home page is divided into sections: The topmost section „Are you Nerd ?" links the gamified survey, immediately below are presented the four topics of this year's magisterial lessons. In the lower part of the page, the user can find a first overview of the statistical information about the survey, news from EurLex and REIsearch and Twitter feed.

From the dashboard, the user can also search between millions of scientific articles, provided by Mendeley, OpenAIRE, ScienceDirect.

MAIN FUNCTIONALITY OF THE PLATFORM

Ask a researcher

The objective of this section is to develop a function facilitating interaction among researchers and citizens on the sub-topics which are the object of the video-lessons and media campaign.

This function has been implemented in close collaboration with the Editorial Office (in charge of engagement activities) and the project Coordinator (in charge of institutional relations). The in-house Network Officer (who has both technical skills and a background in science-communication) have facilitated relationships between in-house developers, subcontractors and the network of researchers who will answer questions asked by citizens. For this reason we have created a network of 300 volunteer researchers that will anwser to the questions made by citizens.

REI

The "ask a researcher" function allows to sort questions between researchers and, once answers are ready, to index them and recall them when asked again. The citizen initially must fill a form with title and description of the request and at least 3 kewords that are required to better describe semantically the inquiry. The keywords are automatically suggested during the typing from a large list of words selected according to ACM organization's ontology.

Semantic search engine functions has been implemented to help route questions to the most appropriate researchers. This year, the process is semi-automated: within Atomium editorial team, the network officer will make sure that the questions posted by citizens are relevant (with respect to the courses' subject) and appropriate (not offensive for instance) and will also make sure that the 5 researchers selected to answer the questions via the algorithm developed at this end have the right expertise (based on their CV), alerting the technical team in case issues arise so that they can "train" the algorithm to better match questions and researchers.

Once the match is cleared, the question is sent to the one of the 5 most qualified researchers in the network, who will have 24h to answer. If the researcher does not reply in 24h,the question is sent to the second one in the list and so one, until one of the researcher send an answer.

The answer will then be automatically published in the forum where the question originally was posted. All the other researchers to whom the question was sent will be notified in real-time and will be free to decide if they want to provide a different answer or not. Answers will be archived on REIsearch in the section „Q&A" for future reference, meaning that if a similar question is asked a second time, the answer will automatically be displayed. The objective, that will be achieved thanks to data collected in the first 12 months, is to have a totally automatized system in place by next year.

Ranking algorithm

In order to select the most suitable researcher for each request coming from the citizen, we have created a ranking algorithm based on the information we collected from the database made available by Elsevier.

Starting from a selection of more than 7.000 researchers, we collected all the data available about these persons in the Elsevier's database and organizedd the data following different criteria. We created a tool to automatically interface with the Elseviers' API, parse the incoming data and stored them in an internal database, optimized in a way that ensure our algorithm to search for the best researchers in a few seconds.

The information on which the ranking system is base are:

■ **Title and text of the request:** we process the title and description of the request and select the keyword that are contained in it.

■ **Keywords:** since the user must add some keyword to the request we also consider that one. We use the list of keyword defined by the ACM organization.

■ **Journal impact factor:** we collect data of all publications made by each researcher and we matched them with the impact factor of the journal in which the paper was published

■ **h-Index:** this value is considered one of the most significant index to show how much influence have the work of a researcher.

■ **Frequency and timing of publications:** we also consider the age of publications and the continuity of the publication over time.

All these information are taken into account when sorting the researchers. We use three different methodologies to find the best possible researcher, and then joined, producing a final ranking value for each researcher. The ones with the highest score are considered valid candidates to answer the request.

These methodologies are:

- Matching between the request and the researchers. The system match the keywords included in the request with the ones linked to each researcher, producing a rank value.

- Matching between the request and abstract of the papers. The system match the keywords included in the request with the ones linked to each paper published by the researchers, producing a rank value based also on the journal impact factor.

- Popularity index of the researchers. This information is based on the h-index that is provided directly from Scopus.

Display the media campaign's four topics

This year the focus of the media campaign is on four IT topics, much debated and extremely interesting among the citizens:

- Social networks and new media

- Cybersecurity and privacy

- The Internet of things

- Big data and analytics

For each of this topic, we have created a dedicated section in the home page of the platform, each of which contains the following information and functionality:

- Magisterial lessons: for each topic we present two interviews made with important representatives of the European scientific and political world. Each interview is made of three "chapters", the first with basic information about the topic to let the citizen better understand the scientific aspects; the second explain the state of the art, and in the third one the expert describe the future and the perspectives of that area. Each video, with an average duration of 15 minutes, was realized by a professional video-makers team.

- Comments: linked to each video there is a discussion area in the platform's forum. The user can access these discussions by clicking on the icon directly under each video.

- Ask a researcher: if the citizen have a specific question and he wants to contact a researcher to obtain a complete answer, he can access this functionality and type in his request.

- Articles: for each topic we list a small selection of interesting articles, which is updated over time when new articles are published

- Discussions: In this section the user can see a list of the most recent discussion and click on the various thread to read in details and contribute.

How Nerd are you?

This game has been implemented under the supervision of REIsearch's Senior Developer and in close collaboration with the Editorial Office, who together coordinated with a specialised e-media company subcontracted to create a gamified survey which will be circulated by REIsearch's media partners (newspapers) and widely disseminated on Facebook, Twitter and Instagram to launch the new realise of the platform.

The module is multilingual: English, Italian, French, German, Spanish, Portuguese.

The purpose of the game is to identify the technological readiness and inclinations of users who will participate in it. A random selection of questions from a container database is shown to the user and an algorithm allow to generate 10 avatar graphic cards according to the users' profiles which will be easily sharable on major social media. Results are stored in a database and users are able to see aggregated results and also specific result for each question. At the end of the media campaign we will create a report with all the results. This report will remain available in the coming months, in the initiatives section, along with the reports of previous years.

My questions

When a user have submitted a request to a researcher, via the „Ask a researcher" functionality, he/she can follow the evolution of his/her request in this section.

Just after the request has been submitted, it will be listed in a Waiting status. Thise mean that our team is evaluating the reqeust in order to decide if it complain our requirement and relevance, accuracy, appropriateness and interest.

Once approved the request is shown in a Working status. This means that the reqeust has been approved and submitted to the researchers, waiting to receive an answer from them.

When the researcher submit his answer, this is automatically added to the request and the user receive an notifcation email.

In case the request should not be accepted, it will be listed as Declined. In many cases we will send to the citizen an email in which we explain why the request has been declined.

Discussions

The discussion area allow citizen to start conversations related to the four main topics. For each of the videos there is a dedicated discussion, but users can start new discussions, add new comments in existing discussion or add comments to other existing comments.

This section is designed to attract persons who are stimulated by the topics and help them interact and deepen their knowledge.

Search

This functionality was already available in the past version of the platform. Thanks to an agreement with Elsevier, we are able to search through millions of articles and papers published by researchers in any area of the research activity. Based on the open-source API provided by Mendeley, OpenAIRE, ScienceDirect and EuroLex, the search engine is capable to extract results from all aforementioned scientific repositories.

This year, in order to offer a more easy to use, yet powerful search engine, we adopted the following solutions:

1) Optimisation of the Search engine: the search engine has been optimised to better order results according to their relevance, either thematic, chronological, or related to authors;

2) Crossing Data: heterogeneity of data from partners' repositories has been addressed, allowing displaying richer crossed query results in a user-friendly way. Additional metadata has been used to allow users to filter results between different sources and crossing them;

3) Visualization and navigation within graphs and open data: users is now allowed to navigate large networks of news, scientific articles, posts, and to openly access all the data related to the project. Javascript libraries allows visualization and navigation within large sets of results without compromising the good performance of the website has been identified and tested to find the best solution.

Main technical aspects of the platform

The platform is fully realized with open-source tools: PHP language for the server side, and HTML5,CSS3 and JavaScript for the frontend side, adopting respectively these tools: Laravel framework for PHP language, SCSS for creating CSS, and JQuery and Vue as Javascript frameworks. Relational and non-relational databases such MySql and Redis were used to manage, store and cache platform generated data, as well as contents from external sources.

More in details, Laravel frameworks permits to build a robuts platform with solid architectural patterns with modular approach, protecting it against the most serious security risks: SQL injection, cross-site request forgery, and cross-site scripting.

All the content pages and areas of the platform had been refined and the use of Ajax technology was accurately adopted to enhance the speed of the Search functionality and improve user experience.

2. CITIZEN ENGAGEMENT AND MEDIA CAMPAIGN ON DIGITAL SKILLS

ABOUT

In September 2018, Atomium – European Institute for Science Media and Democracy (EISMD) launched a citizen engagement and media campaign on the skills for a digital Europe. The campaign was timed to create a synergy with the release of the third beta version of REIsearch sporting new features as the "Ask the Reasearcher" a new function automatically routing users questions on digital matters to the most appropriate experts. Coherently with previous editions, the aim was to stimulate public awareness on the skills needed both by workers and citizens as well as develop a debate between policymakers, scientists and citizens and better understand the evidence, the constraints and the opinions of citizens across Europe.

On October 14, the campaign went public, with dedicated articles published both on the paper and online editions of Atomium media partners, including Der Standard, El País, Frankfurter Allgemeine Zeitung, Público, Il Sole24ore, Les Echos and Euroscientist. Elsevier and the European Commission's DG Connect facilitated the engagement of researchers through their social media channels. Based on readership, the potential public reached by the campaign was equal to over 5,7 million Europeans.

Media partners were asked to run at least three stories: one at the kick-off of the campaign presenting the game and with a supporting story on digital competences of young europeans and one within three weeks from that with the data gathered through the platform.

The campaign ran for 3 weeks and 20 articles were published around four main topics: (i) social and new media (ii) big data and AI (iii) IoT and (vi) cybersecurity and privacy.

The online articles contained a link to a gamified questionnaire, the iNerd game, accessible online in a responsive format automatically adapting to mobile devices.

A social media campaign was also run in parallel with the article publications. The social media campaign reached approximately 1 Million people across all media channels as detailed further on.

The data above, as figures below, date from the end of October 2018 and are evolving as the campaign remains active beyond the completion of the present project.

This has translated into:

a) more than 66.000 users visiting the REIsearch site and taking part to the media campaign, exceeding the 20.000 target set in the initial proposal by 230%.

b) The gamified survey was accessed by 26.000 people and fully completed by 45% (12.000) marking a 243% hike compared to the 2017 answer rate of the questionnaires on NGI technologies.

c) 13.500 views of expert videos (531% above target).

d) 17% of users returning to the platform at least once (almost 20% above target).

e) 26% of users trying different functions beside the gamified survey (5% above target).

Finally, the results of the campaign and gamified survey were presented and enriched during the Next Generation Summit, held in Brussels on the 6th and 7th of November 2018, which saw the participation of over 250 people consisting of speakers and participants.

AIM

In line with the two previous editions, the aims of the campaign were to:

1) Create a responsible and informed multi-stakeholder debate on the issues facing Europe, involving thousands of European citizens, researchers, policymakers and stakeholders;
2) Create and promote access to reliable information on the issue;
3) Increase inter-disciplinary and inter-sectoral debate;
4) Collect and analyse results to deliver to citizens, media, researchers and policymakers;
5) Bridge the gap between science, society and policy in an innovative way.

TOPIC

The topics for the 2018 media campaign, have been chosen through multiple consultations and interviews with experts and researchers as well as looking at the results of the 2017 Next Generation Internet Summit[1] where First Vice President of the European Commission, Frans Timmermans underlined that: "The next generation internet must be more than the Internet of things. It must be the Internet of values. This means that, first, we must protect democracy and our way of life"[2]. The choice of these topics is also instructed by a solid body of literature and evidence on the importance of digital skills in developed societies.

a. Social and new media

Social media is an increasingly disruptive force on the information and social landscape. It challenges traditional, mainstream media to reconsider how they operate and often releases information of which mainstream media might not have been aware or have ignored.

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1. www.ngis.org
2. Speech of First Vice-President Frans Timmermans at the Next Generation Internet Summit - 6 June 2017 - https://ec.europa.eu/commission/commissioners/2014-2019/timmermans/announcements/speech-first-vice-president-frans-timmermans-next-generation-internet-summit_en

REI

It can offer a wider, more diverse perspective on life but has also proven to play a powerful role in creating echo chambers[3] and filter bubbles[4].

Overall, one may think social and new digital first media have a positive impact on society as where people have access to more and diverse sources of information, the better the chances for democracy to flourish. By empowering individuals to share information and opinion with a mass audience, using technologies of rapid and mass dissemination previously available only to communicators in traditional media, social media cannot but be good for democracy.

As recently noted by The Economist[5]: "Political scientists have long pointed out that social media make it easier for interests to organise: they give voice and power to people who have neither. For instance, they helped get Black Lives Matter, a movement fighting violence against African-Americans, off the ground, according to a recent study[6] led by Deen Freelon of the American University in Washington, DC. But research into another effect has only just begun: social media are also making politics and collective action more "chaotic", argues a new book called *Political Turbulence*[7]". In this perspective social media are making democracies more "pluralistic", but not in the conventional sense of the word, involving diverse but stable groups. Instead, the authors see the emergence of a "chaotic pluralism", in which mobilisations spring from the bottom up.

It is this crucial for our communities to keep evolving in stable democracies to improve the general audience's understanding of the mechanisms regulating the functioning of societies where social and new media have a growing role in shaping collective perceptions and beliefs.

b. Big data and Predictive Analytics

The concept of big data has been around for years. Most organizations now understand that if they capture all the data that streams into their businesses, they can apply analytics and get significant value from it. But even in the 1950s, decades before anyone uttered the term "big data," scientists, businesses, and policymakers were using basic analytics (essentially numbers in a spreadsheet that were manually examined) to uncover insights and trends. The new benefits that big data analytics brings to the table, however, are speed and efficiency. Whereas a few years ago one would have gathered information, run analytics and unearthed information that could be used for future decisions, today you can identify insights for immediate decisions. The ability to work faster – and stay agile – gives organizations a competitive edge they didn't have before.

This innovation has a positive impact not only in companies, but also in government where many agencies are facing the need to tighten budgets without compromising quality or productivity and in the health sector where patient records, health plans, insurance information and other types of information can be managed more efficiently and at lower costs while extracting more information useful for developing preventive measures both for the individual patient as well as for the society at large.

c. The internet of things

From wearables to autonomous cars and smart-homes, today billions of devices are connected to the Internet in what we call the "Internet of Things" or "IoT". These devices are already transforming our lives, but as they do, there are also serious challenges that must be addressed to maximize the potential benefits. As noted by the Internet society: "Projections for the impact of IoT on the Internet and economy are impressive, with some anticipating as many as 100 billion connected IoT devices and a global economic impact of more than $11 trillion by 2025". At the same time, however, the Internet of Things raises significant challenges that could stand in the way of realizing its potential benefits. Attention-grabbing headlines about the hacking of Internet-connected devices, surveillance concerns, and privacy fears already have captured public attention. Technical challenges remain and new policy, legal and development challenges are emerging.

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3. An echo chamber is a metaphorical description of a situation in which information, ideas, or beliefs are amplified or reinforced by communication and repetition inside a defined system.
4. A state of intellectual isolation that can result from personalized searches when a website algorithm selectively guesses what information a user
5. The Economist - 11/4/17 - "Social media's threat to democracy"
6. Deen Freelon, Charlton D. McIlwain, and Meredith D. Clark | February 29, 2016 - Beyond the hashtags: #Ferguson, #Blacklivesmatter, and the online struggle for offline justice - http://www.cmsimpact.org/blmreport
7. Helen Margetts Peter John, Scott Hale, Taha Yasseri - Political Turbulence: How Social Media Shape Collective Action

REI

d. Cybersecurity and privacy

Cyber risk is now firmly at the top of the international agenda as high-profile breaches raise fears that hack attacks and other security failures could endanger the global economy. The World Economic Forum (WEF) Global Risks report[8], included this rather stark warning: "Cybersecurity risks are also growing, both in their prevalence and in their disruptive potential. Attacks against businesses have almost doubled in five years, and incidents that would once have been considered extraordinary are becoming more and more commonplace. The financial impact of cybersecurity breaches is rising, and some of the largest costs in 2017 related to ransomware attacks, which accounted for 64% of all malicious emails. Notable examples included the WannaCry attack—which affected 300,000 computers across 150 countries—and NotPetya, which caused quarterly losses of US$300 million for a number of affected businesses. Another growing trend is the use of cyberattacks to target critical infrastructure and strategic industrial sectors, raising fears that, in a worst-case scenario, attackers could trigger a breakdown in the systems that keep societies functioning".

Cybersecurity is also key for the digitazation of services, both private and public and for the development and expansion of e-government as many identity theft ranks among the top fears of Europeans when asked about live in the digital world[9].

FORMAT

REIsearch's 2018 media campaign has been designed along the paradigm of the "attention economy" as in a digital world it twill be competing with a variety of content of diverse nature as articulated by Herbert A. Simon, who argued that: "...in an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it".

To emerge in this competitite environment we designed the campaign along two lines. The first has been the development of REISearch's media partners network to include 11 among the most prominent European media organizations (*Frankfurter Allgemeine Zeitung, El País, Il Sole 24Ore, Luxemburger Wort, La Libre Bèlgique, Publico, Der Standard, Les Echos*, the scientific publisher *Elsevier* and *Euroscientist*) pairing it with a structured social network campaign. Details and figures of this activity are detailed in the detail description of week activities.

The second line of work has been the development of a gamified and user centric approach to gathering data and engaging citizens. This is in line with reasearch showing gamification has the potential to improve the quality of learning by better engaging users with learning activities[10]. When people hear gamification, they envision games created for a business purpose. But gamification is not about creating something new. It is about amplifying the effect of an existing, core experience by applying the motivational techniques that make games so engaging. When you gamify high-value interactions with users, employees, and partners, you drive more sales, stronger collaboration, better ROI, deeper loyalty, higher customer satisfaction and more engagement. Gamification has a growing number of applications in the educational and trainig field and has been shown to be a good design methodology to influence motivation and behavioral change. A noted by Lobna Hassan[11], "Civic engagement and its online platforms could benefit from gamification, as these areas suffer from low engagement levels, thus defeating the purpose for which they are created".

The result of this first edition of REIsearch's new line of citizen-cetric campaigns has been **iNerd**, rolled out in the fall of 2018[12]. iNerd is a gamified survey strongly oriented to social media and helping users explore their level of competences and awareness of the digital world. iNerd launched at the end of September 2018 for 3 weeks in 6 languages[13].

8. http://www3.weforum.org/docs/WEF_GRR18_Report.pdf
9. Eurobarometer 2016 - http://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/ResultDoc/download/DocumentKy/79734
10. https://aisel.aisnet.org/pacis2013/206/
11. Governments Should Play Games - Towards a Framework for the Gamification of Civic Engagement Platforms - http://journals.sagepub.com/doi/full/10.1177/1046878116683581
12. Appendix 1: Timeline of the media campaign.
13. Appendix 2: Brief of the gamified survey.

The iNerd game allowed users to asses their level of "nerdiness" and discover if they are a Steve Jobs like digital guru or a Mr Bean of the digital world. The game may be played at game.reisearch.eu and on all media partners sites when embedded, is designed to be both entertaining and informative. Players are encouraged to explore their knowledge of four key areas of the digital world: big data and artificial intelligence, social media and Internet of things earning scores, profiles and badges they may share online. Upon completion of each session (iNerd can be played multiple times to test one's improvements) the player's score will also lead him to a selection of explanatory videos and articles meant to improve his weaker spots. The videos, 24 in total, have been produced by REIsearch and feature eight leading european experts in the fields of big data and Ai, social and new media, Internet of things as well as privacy and cybersecurity. The campaign will be significantly promoted online through the hashtag: #hownerdyareyou.

The data, collected from users in a Gdpr compliant format, has been used by REIsearch to gauge the level of competence and awareness of the general European public in areas that are ever more crucial for Europeans ad AI and automation are profoundly remodeling our societies and job market. In this context digital skills and competence are becoming a key assett for Europe's democratic and social resilience and inclusion as well as for its economic growth and competitiveness. As European Commission's President Jean-Claude Junker noted in his recent State of the Union Address the number of active workers in Europe (239 million people) has never been so high and yet: «Youth unemployment is at 14.8%. This is still too high».

All data gathered will be released in open format as recommended by the 2017 REIsearch reviewers.

THE SURVEY

As part of the 2017 Campaign, REIsearch ran a multi language survey in English, French, German, Spanish and Portuguese consisting of a maximum of 11 questions delivered through the iNerd game. The gamified survey was posted on the REIsearch platform and media partner's websites. Social media (Facebook, Twitter, Linkedin and Instagram) were used to circulate the survey and participants were encouraged to share the badges and results they earned through their social channel. The overall participants in the iNerd gamified survey totalled above 26.000 respondents with 12.000 surveys fully completed (243% hike compared to the 2017 answer rate) as this report was goint to print in October 2018. The survey remains open to gather more data and help citizens discover more contents.

THE REQUIREMENTS

The fundamental requirements for the design of the iNerd game were five:

1. **Accessiblity.** iNerd is accessible on REIsearch as well as on media partners websites and from Facebook, Twitter and LinkedIn. The user experience is as smooth as possible thanks to FB and LinkedIn easy-logins.

2. **Reward.** Every user is rewarded discovering his profile. E.g.: you may come out as Steve Jobs or Bill Gates if you're particularly skilled, Mr. Bean if you're careless about copyright or, maybe, an American president if you're particularly bad at tweeting. Every outcome will be associated with an "ID card" and badge you may share on social networks inviting friends and other users to test their knowledge of the digital world as well. This, however will not be the only reward as, according to your profile, the system will also point you to contents present on the REIsearch platform (e.g.: Socrates videos and others) aimed at learning more about those areas where you appear to be less skilled.

3. **Durability.** iNerd uses a stratified structure of questions allowing different outcomes if the same user tests multiple times (possibly after consuming contents and videos on REIsearch and expanding his understanding of the digital world). This expands the "shelf-life" and improves the user experience of the game encouraging users' interest to test repeatedly.

4. **Network effect.** The structure survey is strongly integrated with the social networks of largest use in Europe (ie: Facebook and Twitter) and visibility has been enhanced by the media campaign envolving all Atomium media partners (El Pais, De Standard, Frankfurt Allgemeine Zeitung, Il Sole24Ore, Les Echos, Publico, La Libre Belgique and Luxembourg Wort), and all other outlets willing to support it without breaking the media partner's priviledge to run it first. Media partners will also be supported in running stories to push the game at its launch and with interim and final results. To maximise impact and visibility iNerd has been published in English, German, French, Spanish, Portuguese and Italian encouraging respondents from Europe and elsewhere.

5. **Transparency.** Recent scandals as the "Facebookgate" and "Grindrgate" have increased the public concerns on how their data is actually treated. Transparency on how iNerd works and how it is made GDPR compliant have thus been crucial to the success and acceptability of the game. Special attention has been devoted to explaining users how their data is managed and what they are actually sharing.

THE STRUCTURE

Users engaging with iNerd are offered from 8 to 11 questions extracted from a set of 100 covering the four different areas of interest for Reisearch: Big data and analytics; internet of things; social and new media; cybersecurity and privacy. Each question is selected by the system thanks to an adaptive algorithm making the experience of every user unique tailored on his answers.

This allows to better gauge the level of competences, awareness and sensibilities of each users for the topics in question and a better recommendations of what contents to look at on REIsearch. Moreover this feature will allow the user who has viewed REIsearch contents to engage again the survey, experience progressively different outcomes and share his progress online.

Once elaborated and approved in English the 100+ questions have been shared in a POedit file allowing for the localization of the survey in French, German, Spanish and Portuguese.

Four different kind of questions will be submitted to users:

1. Checkbox (more than 1 answer applies)

2. Multiple choice with only one correct answer

3. Radar with Yes or No answers

4. Ordering

The 8-11 questions, together with the demographic information provided by the user at the login (ie: sex, age, nationality and education level) will lead to a final score of the user representing the level of competence/awareness of digital and the 4 areas of interest. The final score of each individual user will be based on two metrics:

A. **"level"** measuring his degree of competence and awareness of the digital world. This score will allow to divide users in three tiers (Top, Medium, Basic) and corresponding profiles.

B. **"colour"** indicating his strenghs and represented by an object for each one of the 4 areas. Each colour will be treated as a "badge" the user may collect similarly to other online gamifications. Badges will be represented with familiar and coloured objects on the final profile of the user as, for instance:

AREA	OBJECT
Big data and analytics	Data cloud Hard disc/servers Trend graph Robots (AI)
Internet of things	AR/VR Visors Smartglasses Smartphone Smartwatch
Social ad new media	Profile of online user or Friend Information bubble Tablet reader Loudspeaker
Cybersecurity and privacy	Bitcoin/cryptocurrency Antivirus shield Anonymous mask Security lock icon

Once completed the test, the user is encouraged to consume contents present on the REIsearch platform accordingly with his score (i.e. video lectures and other materials, made available by the REIsearch platform) and to test again (e.g.: "Take the iNerd challenge again!). This prompting has two aims: improve his overall score as well as expand his collection of "colours".

All registered users have a profile enabling them to track and eventually share their improvements in time.

Results aggregated by country and typology of users (by age, gender and so on) are used to generate real time visualizations on REIsearch's platform also to be shared with Atomium's media partners for embedding on their platforms.

REI

THE QUESTIONS

iNerd is GDPR compliant and gathers from users two sets of data. The first consisting of demographical data (age, sex, education) and the second and larger set measuring their level of digital competence and awareness.

The first step is covered during the login procedure where users may register in multiple way. This data will be vary valuable for the data analysis of the respondents across Europe.

1. Directly on the site filling in the following five fields:

    a. name

    b. sex

    c. age

    d. level of education

None of these fields will be made compulsory but the user is warned that not completing theme will significantlt diminish the quality of his experience.

2. Using a Facebook or Linkedin Login to contribute the same data listed above.

The second set of questions is composed of 8-11 questions asked through a straightforward interface (example below in Fig. 1) chosen by iNerd's algorithm from a database of 100 questions[14] used to build the iNerd gamification were evaluated and vetted by researchers from Oxford university's Internet Institute and the Department of Computer Science of the University of Milan.

Fig. 1 - Mock up of the question interface.

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14. Annex 1

THE PROFILES

At the end of the game the user will be confronted with a dashboard presenting him with the resulting profile avatar and with a series of badges assigned according to his score in each one of the four areas. Users will also be encouraged to view contents offered on the REIsearch platform (eg. video lectre and others) relating to the areas where their scores were lowest. Users may then test again to improve ther score and earn new badges they may share in their social profile.

LEVEL	MEN	WOMEN
Top	Steve Jobs	Claire Foy as the hacker Lisbeth Salander
Medium	Sean Parker	The Kardashian sisters
Low	Rowan Atkinson	Hillary Clinton

Upon completing the game, each user receives a unique and personalized badge (fig. 2 below) with his name and profile avatar as well as 5 messages, the first one (P) relating to the avatar and the following four to the level he conquered (top, medium, low) he conquered in each of the 4 areas of testing (Big Data; IoT; Cybersecurity and Privacy; Social and New Media). Below are the text to integrate in the badges and mock-up of the graphic (colours are tentative and may change in the final version) for the mobile version. The site is responsive to accomodate users from PCs as well a different formats of mobile devices.

Fig. 2 - Mock up of final badge.

The text for the three different levels of the main text (P) associated with tge profile.

LEVEL	P TEXT FOR BADGE
Top	Congrats! you're definetly the Hacker in Chief here and earned the top iNerd badge!
Medium	Well done. You sure know how to work the web but do you actually know how it works? Why not check some of our videos and test again?
Low	Ehhhhm... Did you know you can actually read on a tablet besides chopping vegetables on it? You really want to check our videos and earn a better badge!

The scores for each of the three levels of the four areas.

4 LEVELS in 4 areas	A (IOT)	B (BDA)	C (CYO)	D (SNM)
1 (Top)	A1: Yeah, you're the master of all thing connected!	B1: Well, you really know your way around big data, analytics and all things automated.	C1: Ohoo! Check out Mr. Anonymous!	D1: Hi there Social Master in chief! If you haven't already invented the next social network you really should think about one!
2 (Medium)	A2: That's actually pretty good. You know your way around networks and connection, but you still have some way to go.	B2: Good. You have a good grasp of why data is important and how AI works, but there are still a few things you need to figure out.	C2: Your devices and networks are safe. Or are they? Better start learning a bit more about this stuff asap!	D2: You tweet, post allright, but you might want to learn a bit more of what's really going on behind all that sharing you do.
3 (Low)	A3: No, self driving cars are not sci-fi and you should quickly learn what's going on. Check out some of our videos on IoT.	B3: Yes, speaking home appliances are an real thing. You better catch-up o what is happening!	C3: Pssst: change all your passwords as fast as you can. Even if you're not a Tv star or a Presidential candidate you could get hacked just too easily!	D3: Maybe you don't even have a social media profile but that's not a reason for ignoring how the online media sphere works. It's not a fad but a feature here to stay.

BACKGROUND ON THE CHALLENGES RAISED BY NEW DIGITAL COMPETENCES

Information and communication technologies (ICT) are profoundly changing not only the skill profile of jobs but also the basic competences needed by every citizen to access basic services and, even more importantly, access, elaborate and evaluate information. This need is accelerated by the growing number of countries pushing a digital transformation of the state. Besides the pioneering experiences of Estonia in e-gov and e-citizenship, many large European countries as France with its France Connect initiative and Italy with its Spid unique digital identity programme, are moving towards a digital state allowing a more open and inclusive government. This transition is becoming so strong one might say access to digital skills has become a matter of democratic empowerment.

This is already very clear for as noted by the Oecd: "Ensuring that everyone has the right skills for an increasingly digital and globalised world is essential to promote inclusive labour markets and to spur innovation, productivity and growth. Several types of skills are needed: technical and professional skills, including ICT specialist skills for workers who drive innovation and to support digital infrastructures and the functioning of the digital eco-system; ICT generic skills for workers and citizens alike to be able to use digital technologies; and ICT complementary "soft" skills, such as leadership, communication and teamwork skills, required for the expanding number of opportunities for ICT-enabled collaborative work[15]".

Figures 1 and 2 (below) show the growing gap among generations when it comes to digital skills.

Fig. 1 - The majority of adults have low proficiency in problem solving in technology-rich environments
Percentage of 16-65 year-olds performing in each proficiency level.

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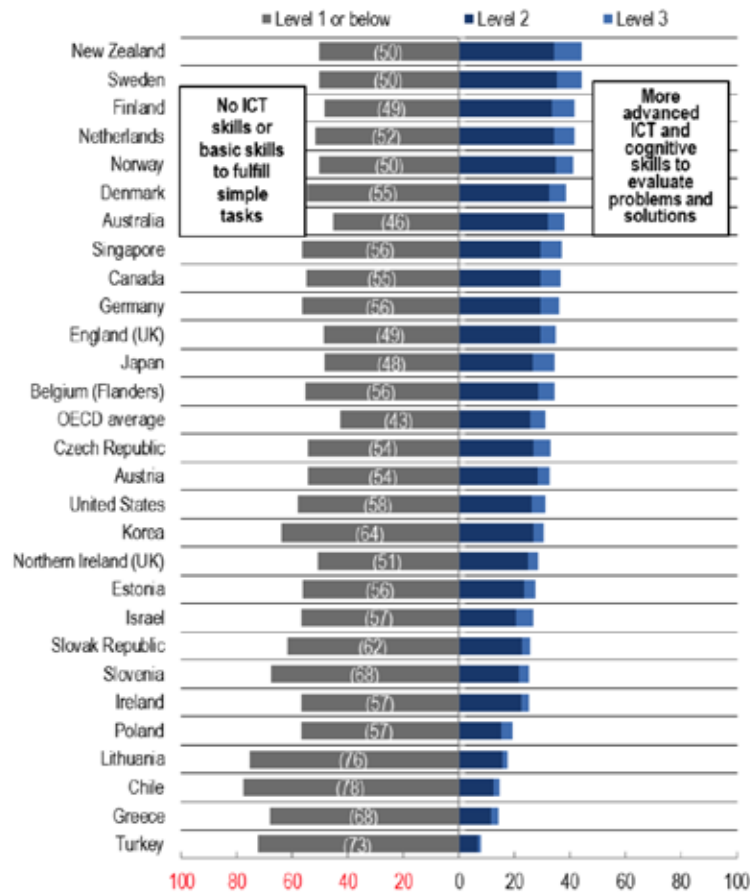
15. Oecd 2016 – Skills for a digital world - https://www.oecd.org/els/emp/Skills-for-a-Digital-World.pdf

Fig. 2 - Younger people are better prepared for the digital working environment than older people
Share of 25-34 and 55-64 year-olds performing at Level 2 or 3 in Problem Solving in Technology-Rich Environments
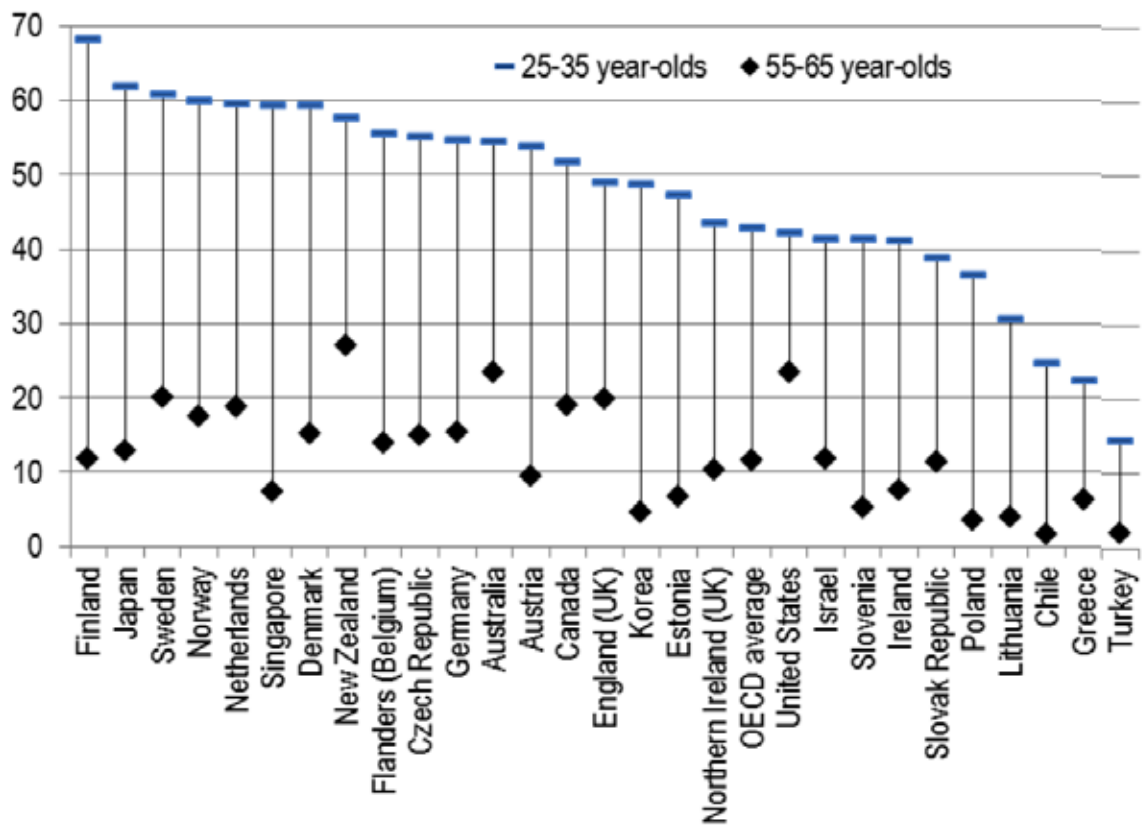
The evidence on how well countries are prepared for the digital economy is rather disturbing. OECD's Survey of Adult Skills (PIAAC) suggests that more than 50% of the adult population on average in 28 OECD countries can only carry out the simplest set of computer tasks, such as writing an email and browsing the web, or have no ICT skills at all (see Figure 1). Only around a third of workers have more advanced cognitive skills that enable them to evaluate problems and find solutions[16]. As a result, many workers use ICTs regularly without adequate ICT skills: on average, over 40% of those using software at work every day do not have the skills required to use digital technologies effectively.

16. OECD Skills Outlook 2013: First Results from the Survey of Adult Skills, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264204256-en

MEDIA PARTNERS

The Citizen Engagement and Media Campaign ran in **seven** different languages and with the support of nine leading media partners including national newspapers as well as European publisher Elsevier.

In the next page you can see the reach of the individual media partners in terms of percentage of national population and of the European population.

Together the media partners of the campaign have a circulation of over one million and reach over 5,7 million people. The fact that the campaign was also featured by other newspapers - including the Guardian - and specialized media outlets, ensured further reach to our campaign.

Reach among the global scientific community was granted via the participation of Elsevier, which promoted the campaign through its channels, leading to over 2 million impressions and nearly 2.000 clicks through.

Overall circulation of media partners.
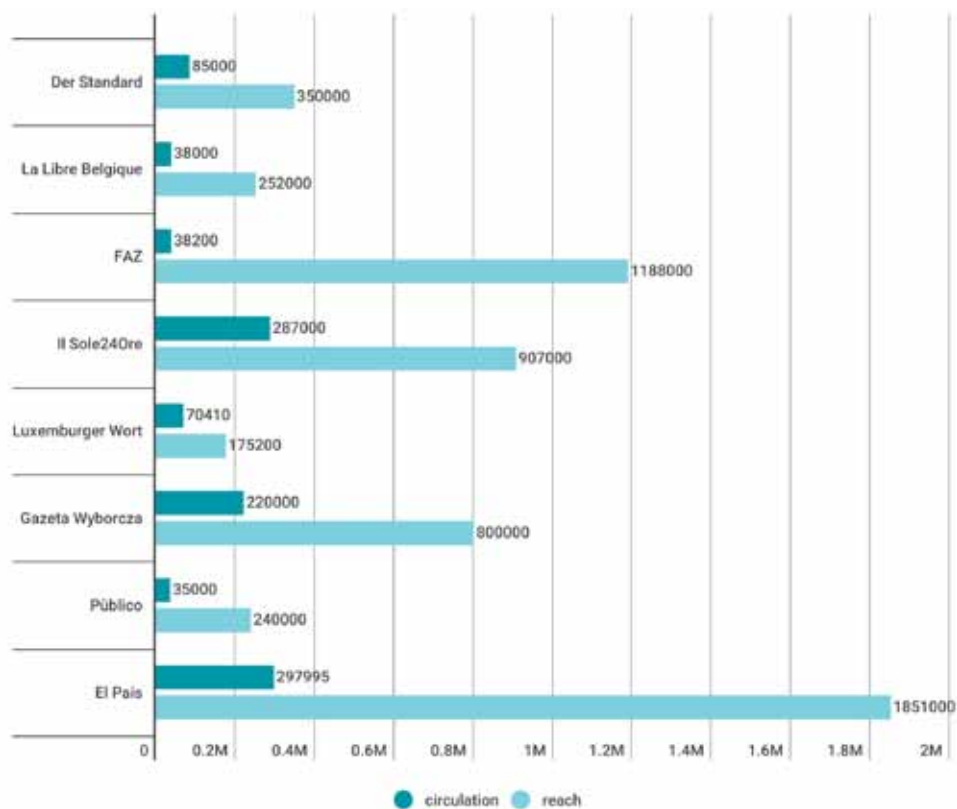
Overall estimated online reach of media partners.
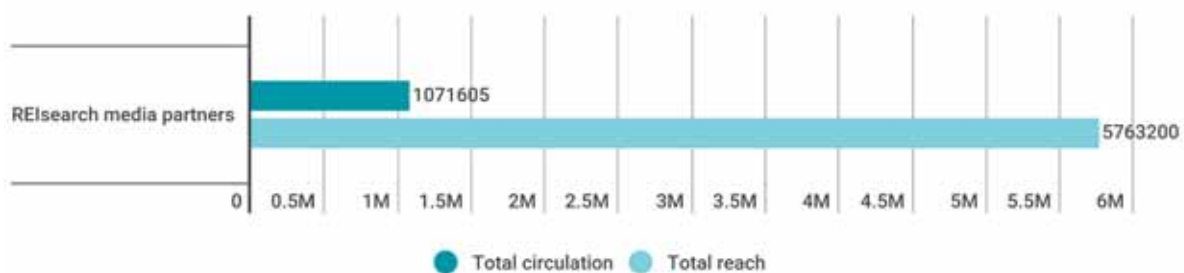
Please find below a detailed list of the media partners:

AUSTRIA – DER STANDARD

Der Standard is an Austrian national daily newspaper that is published in Vienna.

Der Standard is one of Austria's best-selling quality newspapers and is readily quoted by foreign media when an opinion from the Austrian press is required.

Der Standard iis published in accordance with the honour code of the Austrian press (which sets rules on matters such as a transparent division between news and comment and the right to privacy). The paper's general editorial stance could be described as socially liberal and most of its regular columnists also tend to this position, although guest writers come from a wide variety of political positions.

GERMANY – FRANKFURTER ALLGEMEINE ZEITUNG

Frankfurter Allgemeine Zeitung (FAZ) is a German daily published in Frankfurt. Founded in 1949, this major conservative-liberal daily is a reference tool in business circles and among intellectuals, who appreciate its literary supplement, *Feuilleton*.

The *FAZ* is the German daily with the widest circulation abroad and one of the world's largest networks of correspondents, which makes it by and large independent from the press agencies.

The *FAZ* promotes an image of making its readers think. The truth is stated to be sacred to the *FAZ*, so care is taken to clearly label news reports and comments as such. Its political orientation is classical liberal with an occasional support for conservative views by providing a forum to commentators with different opinions. In particular, the *Feuilleton* and some sections of the Sunday edition cannot be said to be specifically conservative or liberal at all.

GLOBAL – ELSEVIER

Elsevier, the modern publishing business, was founded in 1880 and takes its name from the original House of Elzevir, a Dutch family publishing house founded in 1580.

It has evolved from a small Dutch publishing house devoted to classical scholarship into an international multimedia publishing business with over 20,000 products for educational and professional science and healthcare communities worldwide. Elsevier has been at the forefront of the open science movement and has massively contributed to digitizing scientific contents. Over 3,800 journals were made available via ScienceDirect, of which 1.800 have the option to publish open access articles, meaning that a growing amount of contents is available to any reader without the need to make a subscription. More than 35.000 books were also digitized and indexed on ScienceDirect - with digital archives reaching as far back as 1.823, for a total of over 14 million peer-reviewed publications.

ITALY – IL SOLE 24 ORE

Il Sole 24 Ore is an Italian daily published in Milan. Italy's reference business daily was founded in 1965 after the merging of *Il Sole* (founded in 1865) and *24 Ore* (1946).

It is the third national daily, with circulation boosted by an increase in publication of non-economy related articles. Its Sunday culture supplement *Domenica* pulls in an intellectual readership that normally shows little interest for economics.

Il Sole 24 Ore's website is more like a portal: in addition to a selection of articles published in the print edition, it features a wide range of services related to the stock exchange and the economy, most of which are subscriber-only.

PORTUGAL – PÚBLICO

Público was first published on 5 March 1990. Founded as a joint project by a group of journalists and the investor group Sonae, this liberal paper quickly became a newspaper of reference, particularly among the political class, entrepreneurs and intellectuals. *Público* is published in tabloid format and has its headquarters in Lisbon.

Público is one of the first Portuguese mainstream newspapers to have an online edition which was started in 1995. The online edition of Público was named as Europe's online-medium of the year in 2013. The paper was awarded the European Newspaper of the Year in the category of nationwide newspapers by European Newspapers Congress in 2014.

SPAIN – EL PAÍS

El País is the world's leading daily newspaper in Spanish and a byword for quality in the field of journalism in the Hispano-American world. It was first published on May 4, 1976, and its founders envisaged it as an independent quality, European-oriented newspaper, and an advocate of multiparty democracy.

Today, the newspaper remains true to its founding principles, while it continues to adapt to the changing times. *El País* can be read today in its print version, on the Internet, in any electronic format and through social networks.

FRANCE – LES ECHOS

Les Échos is the first daily French financial newspaper, edited in Paris since 1908. The paper is headquartered in Paris and has a website launched in 1996. The paper publishes economical analyses by leading economists, including Joseph Stiglitz and Kenneth Rogoff and has a circulation of 120.000.

GLOBAL – EUROSCIENTIST

EuroScientist is the official journal of EuroScience, a grassroots association of scientists and people with an interest in science-related matters in Europe. EuroScientist focuses on science policy, funding, science in society, scientists' careers, responsible science, ethics, innovation, scientists' lifestyle and more generally about what is happening at the interface between science and society.

Big data, Ai, sociale media: la nuova corsa globale è per le skills digitali

EL PAÍS

Así ha pasado la inteligencia artificial de diagnosticar el cáncer a tratarlo

Como se põem mais raparigas a sonhar com tecnologia?

Frankfurter Allgemeine

Wie steht es um die Sicherheit im Internet?

Security

DER STANDARD

Wie steht es um Ihre digitalen Kompetenzen?

Das STANDARD E-Paper für iPhone, iPad, Android und Desktop.

HOW NERDY ARE YOU? TAKE THE QUIZ!

European science conversations by the community, for the community

Euro Scientist

HOW NERDY ARE YOU? TAKE THE QUIZ!

NERD: HOW NERDY ARE YOU? HOW

Les Echos.fr

TECNOLOGIA

Con gli oggetti intelligenti e connessi, aumentano i rischi per la sicurezza

EL PAÍS

Europa examina su 'frikismo' tecnológico

REI SEARCH

Les Echos ENTREPRENEURS

CHANGEDRIVERS
L'art du changement

Découvrez l'art de conduire le changement selon Raphael Gorgé, CEO du groupe Gorgé

La nouvelle ruée mondiale vers les compétences numériques

COMMITTEES

As for the 2016 campaign on *Chronic Diseases* and the 2017 edition on *Next Generation Internet*, the 2018 *Citizen Engagement and Media Campaign on Digital Skills* required two characteristics be as trustworthy and reliable and therefore a success.

- Firstly, the relevance and reliability of the information presented and the questions asked had to be ensured. The campaign had to present the most relevant information from an interdisciplinary and intersectoral perspective whilst ensuring that there was no bias built into the content.

- Secondly, the editorial content had to be independent, relevant and represent the interest of the citizens. In order to ensure the two above conditions to be met, two committees where set-up to support the editorial team when developing the content and drafting the questions: an Editorial Committee and a Scientific Committee.

The **Editorial Committee** supported REIsearch's editorial team by highlighting the priorities and key questions of interest to their diverse readership. They also ensured the independence and authoritativeness of the information presented and the questions developed for the campaign.

The members of the Editorial Committee represented the media partners of the initiative that come from different countries, backgrounds and political orientations.

THE EDITORIAL COMMITTEE

Patricia Fernandez de Lis
Editor in Chief of Science and Technology of El País

Patricia Fernandez de Lis has been working for over 15 years as a journalist, covering the economy, science, and technology. She is the Editor in Chief of Science and Technology of El País and a Lecturer on the Master's degree in Communication of Science, Technology and the Environment at the University Carlos III Madrid.

Luca De Biase
Editor in Chief of Nòva24 – Il Sole24ore

Luca De Biase is the founder and editor of Nòva24, the weekly technology and new media insert of Il Sole 24 Ore and is co-founder of Italia Startup. He is author of numerous books and essays on science and digital culture and runs one of the most popular Italian blogs dealing with the knowledge economy, news and social media.

Iris Kisjes
External Partner Relations Manager, Elsevier

Iris currently works for Elsevier as External Partner Relations Manager. She has been actively involved in public relations, corporate- & marketing communications, media- and stakeholder relations with two industry awards: in PR and marketing communications. Working in high-tech environments where technology is the driving innovation is the focal point throughout her career having worked for various Fortune 500 companies including: Dentsu, BT and Elsevier.

Teresa Firmino
Science Editor of Público

Teresa Firmino is Science Editor in Chief at Portuguese daily newspaper Público. She holds a Degree in Social Communication from Lisbon New University and was a Knight Science Journalism fellow at Massachusetts Institute of Technology (MIT).

REI

Benoît Georges
Ideas Editor of Les Echos

Benoît started working for Les Echos in 2000, as a sub-editor for the weekly supplement Les Echos.net, then for the Innovation section of the newspaper. Since 2009, he is the editor of the Ideas and op-ed section both on print and online, for which he created a weekly page focused on prospective. He writes mostly about innovation, AI, robotics, collaborative economy, mobility and the future of work. In March 2018 he also launched a special section of Les Echos' website focused on artificial intelligence (https://www.lesechos.fr/intelligence-artificielle/).

Joachim Mueller Jung

Science Editor of Frankfurter Allgemeine Zeitung

Joachim Mueller-Jung is Chief Science Editor of Frankfurter Allgemeine Zeitung, a national German daily newspaper. He joined in 1995 and took responsibility for the science department "Natur und Wissenschaft" in 2003. His had a journalism training at the "Kölnische Rundschau" in Cologne after graduating in Biology in Heidelberg, Cologne.

Klaus Taschwer
Science Editor of Der Standard

Klaus Taschwer is science editor of the Austrian daily newspaper Der Standard. He was trained in sociology, political science and social studies of science. Klaus co-founded a course-programme on communicating science and authored books on the history of Austrian science in the 20th century.

REI

3. OUTCOMES

The media campaign proper was precedeed by a social media campaign launched on August 29 on Facebook, Twitter, Linkedin and Instagram and led by a dedicated social media editor. An advertising campaign was also rolled out reaching a total of 200.000 people.

Social Media Campaign Highlights

- Campaign is running on Twitter, Facebook, Instagram and Linkedin

- Posting began 29 August 2018

- The campaign has seen **238.200** impressions on Twitter over 63 days

- The website has received **16.393** sessions in this time and **29.602** page views

- We have reached approx. **1M** people across all social media channels

- There has been **4.720** engagement interactions across all 4 platforms

- The Facebook advertising campaign has resulted in **240.761** impressions, **1.444** post reactions, and **4.770** link clicks

- The iNerd was launched on 11th October

Web Visitors overview
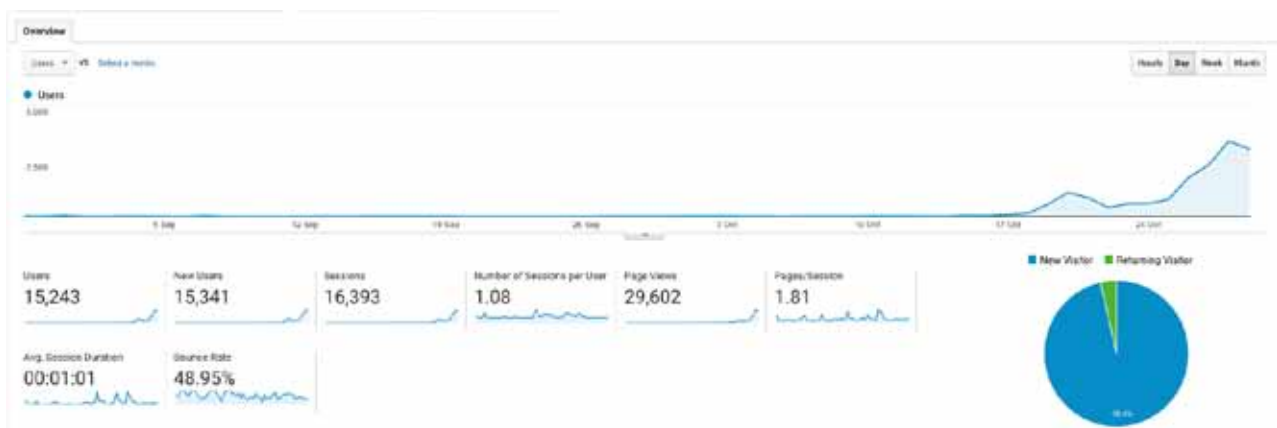
How did our website visitors find us?

Top Channels

- Organic Search
- Referral
- Social
- Direct
- Email

Users

- Users

5,000

2,500

5 Sep | 12 Sep | 19 Sep | 26 Sep | 3 Oct | 10 Oct | 17 Oct | 24 Oct

	Acquisition			Behaviour		
	Users	New Users	Sessions	Bounce Rate	Pages/Session	Avg. Session Duration
	15,243	15,341	16,393	48.95%	1.81	00:01.01
1. Organic Search	8,509			49.37%		
2. Referral	4,063			43.00%		
3. Social	1,473			44.70%		
4. Direct	1,348			64.54%		
5. Email	11			33.33%		
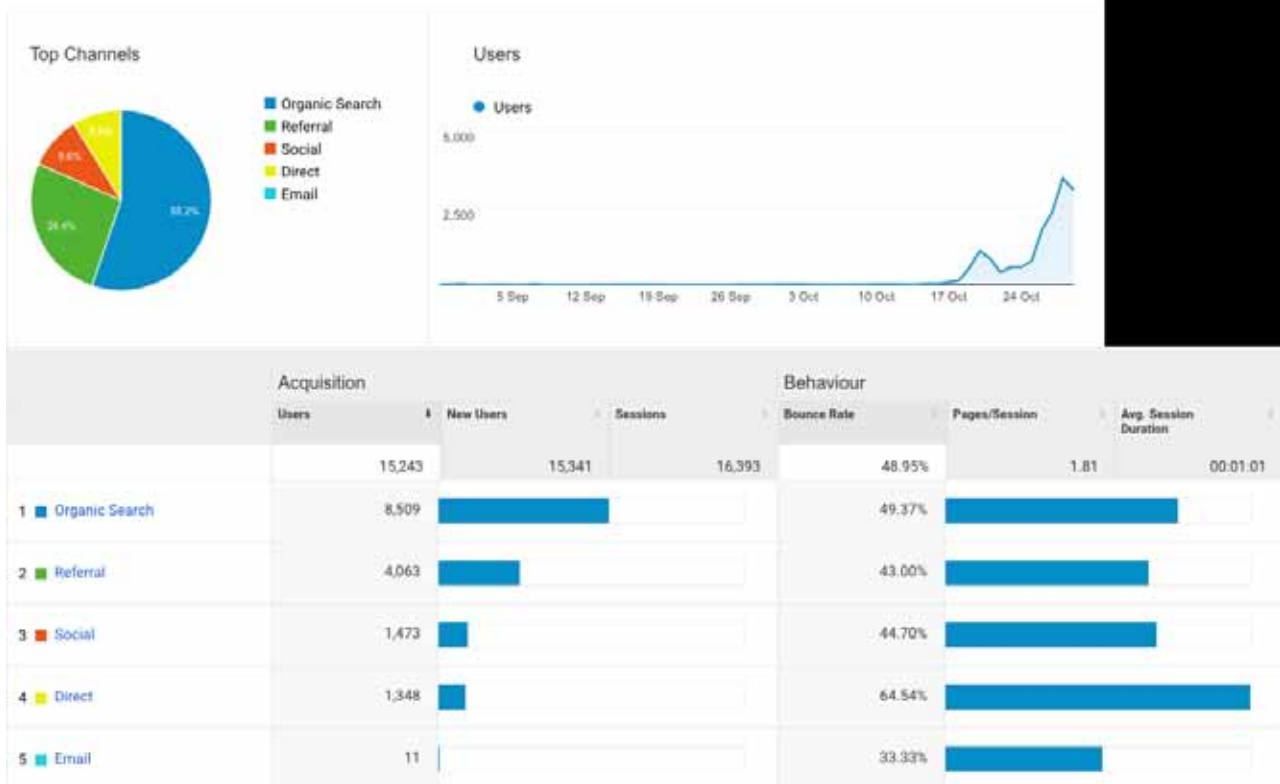
Website Landing Pages

Page		Page Views	% Page Views
1. /		17,385	58.73%
2. /login		938	3.17%
3. /register		740	2.50%
4. /results		541	1.83%
5. /page/initiatives		290	0.98%
6. /dashboard		268	0.91%
7. /page/privacy-policy		230	0.78%
8. /page/terms-conditions		211	0.71%
9. /password/reset		183	0.62%
10. /posts		153	0.52%

REI

Website Social Media referrals
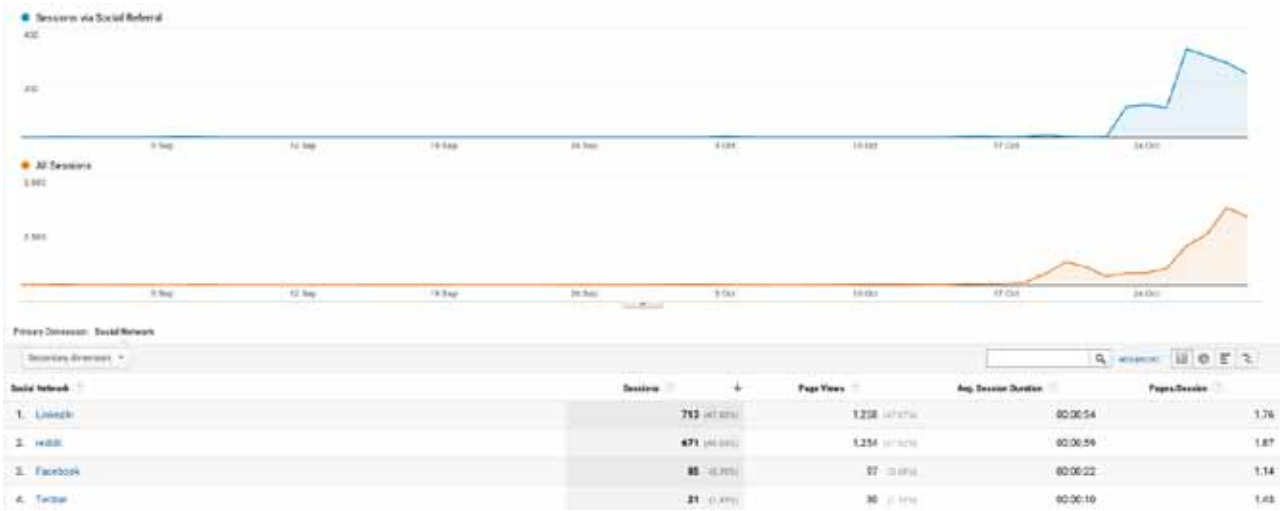
Advertising Campaign at a glance

- approx. 200.000 people reached
- 302.417 impressions
- 12.892 link clicks
- 1.444 post reactions
- 308 page likes

Who we have reached through the advertising campaign

Where do they live?

COUNTRY	REACH
Portugal	40.292
Greece	31.523
Croatia	27.171
Italy	22.434
Hungary	21.346
Poland	10.209
Spain	9.857
Belgium	8.033
Czech Republic	7.329
Netherlands	2.976
Ireland	1.152
Austria	640
Germany	352
Finland	312
France	256
Switzerland	232
UK	160
Sweden	32
Denmark	41

Twitter Impressions

Your Tweets earned **238.2K impressions** over this **63 day** period

REI

Twitter Engagements

Engagements
Showing 63 days with daily frequency

Engagement rate
1.3%

Oct 30
1.1% engagement rate

Link clicks
8.3K

Oct 30
3 link clicks

On average, you earned **131 link clicks** per day

Retweets
319

Oct 30
10 Retweets
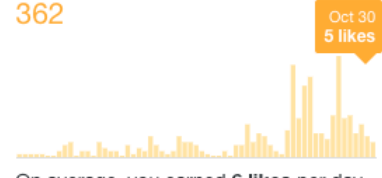
On average, you earned **5 Retweets** per day

Likes
362

Oct 30
5 likes

On average, you earned **6 likes** per day

Replies
22

Oct 30
0 replies

Top Tweets

REIsearch @REIsearchEU
#HowNerdyAreYou 🤓 Our NEW online quiz
😜 aims to test your #digital skills. How do
you think you'll do? 😂 http://bit.ly/2OPouwV
pic.twitter.com/rgfHAmW5Rb
iNerd

Impressions	6,295
Total engagements	83
Link clicks	33
Media engagements	24
Likes	7
Retweets	6
Profile clicks	5
Hashtag clicks	4
Detail expands	3
Replies	1

REIsearch @REIsearchEU
Games can be a great way to start
conversations. See here how they can be
used to inform decisions about research and
innovation policy via @nesta_uk
https://buff.ly/2PejgYK #innovation
pic.twitter.com/ePfM4c58lv

Impressions	4,474
Total engagements	13
Retweets	4
Link clicks	3
Detail expands	3
Media engagements	1
Likes	1
Profile clicks	1

REIsearch @REIsearchEU
🔒"Ensuring that everyone has the right skills
for an increasingly #digital and globalised
world is essential to promote inclusive labour
markets and to spur #innovation, productivity
and growth" 👍 Thank you @OECD
pic.twitter.com/ElqFZ5opy1

Impressions	3,395
Total engagements	13
Media engagements	6
Likes	3
Detail expands	3
Profile clicks	1

Facebook Reach

Total Reach
The number of people who had any content from or about your Page enter their screen.

Organic   Paid

BENCHMARK
Compare your average
performance over time.

Organic

Paid

60K
40K
20K
0

28 30 03 05 07 09 11 13 15 17 19 21 23 25 27 29 03 05 07 09 11 13 15 17 19 21 23 25 27 29
SEPT   OCT

REI

Top Facebook Posts

Top Instagram Posts

- 274 followers
- 2,421 engagement interactions
- 49 posts
- 21,120 impressions

Top Linkedin Posts

Campaign Moments

Instagram

• Top followers: Gadget Flow (179k followers), Mike Quindazzi (digital influencer), Adam Franciso (95.3k followers), David Stepania (50k followers), Tim Maliyil (13.3k followers)

•Comments

- Bryan Tan "Interesting insights! Thanks for sharing! I will look into Algorithm Serendipity it's my first time hearing of it J"

- Simon Chanpmba "I am really enjoying your content"

Twitter

• Top followers: Liam Byrne MP (UK Shadow Minister for Digital 29.9k followers), Tach Native (75.6k followers), Yves Mulkers (82.6k followers), Gratton Boy (227k followers), Antonio Grasso (55.2k followers)

• Top mention from @elpais_tec: "¿Cómo de 'nerd' eres? Participa en el juego de @reisearchEU y demuestra tus habilidades tecnológicas"

• Retweets from Patricia Fernandez (17.3k followers), Nige Willson (52.3k followers) Iot London (6287 followers) Gratton girl (239.2k followers) Luca de Biase (75.9k followers)

• Tweet from @ComputerworldES was retweeted 12 times

Facebook

Comment from Compass Project: "It's a tough test but very motivating indeed!"

REI

THE MEDIA STORIES

A total of 20 media stories have run in the three weeks between Oct. 14 and November 4, 2018 on the print and online editions of Atomium's media partners.

During the first week of the campaign stories have concentrated on the impact of social and new media as well as on big data and AI. These two topics were chosen to kick-off the campaign as more than two centuries after Benjamin Frankling said that "an investment in knowledge always pays the best interest," the american matemathician and statesman observation could not be more relevant.

WEEK 1 - BIG DATA, AI AND SOCIAL AND NEW MEDIA

While digital technologies have triggered the greatest wave of automation in human history, they are also increasing the need for new skills, not just for workers and companies but also for citizens. In a context in which information is increasingly distributed by algorithms and social networks and fake news can influence a political election, the digital literacy of civil society is becoming a democratic necessity. At the same time, big data and artificial intelligence systems are driving a digital transformation of the world of work at all levels, from manufacturing, where numbers are larger, to services, where the impact is likely to be devastating (more than 7% of the GDP of the Philippines is generated by call centres where AI systems will cut many jobs). Replacing workers with machines (which are nothing but a form of capital) is nothing new, but this time, unlike in other industrial revolutions, it is also hitting white-collar workers as lawyers, doctors, and managers, for whom the ability to collaborate with and possible even train machines is already becoming a competitive factor.

Automation is therefore also severely hitting the middle class with an extremely rapid effect. Economists are very familiar with this development and there is no lack of alarm signals regarding the "digital mismatch" - the asymmetry between the skills required and the actual skills of workers. In fact, a recent study by the European Commission shows that nine out of ten jobs will require digital skills over the next decade, but that 44% of Europeans aged between 16 and 74 do not have the skills to tackle this transition. The most dramatic figure concerns women above all, because in 2016 there were three times as many male students as female students in the ICT field at European universities. All this is happening in a context of increasingly global digital ecosystems increasingly dominated by US or Chinese multinationals. In fact, not even a single one of the top 15 companies in the world in terms of capitalisation is European, and out of the top 200 online platforms in the world, only eight (4%) are European.

This gap is likely to widen because America's domination in terms of technical scientific skills is being undermined by China, which has engaged in a real competition with the West that also aims to attract brains from abroad. Although internet penetration is barely 44%, there are already 632 million Chinese people online: more than double the figure for the United States and Europe, as the McKinsey Global Institute observed. Its digital economy represents 4.4% of GDP, placing the People's Republic ahead of the USA, France, the UK, Germany, and Italy. It must be said that labour productivity in China still fluctuates around a tenth of that in America and Europe, but Beijing is investing heavily in training and infrastructure with the aim of gaining 7 points of GDP by 2025.

Europe is reacting on various levels to this race for digital transformation. The Commission has recently fielded the Digital Europe Programme, a 9 billion package of measures to promote five areas: high-performance computing, artificial intelligence, cybersecurity and trust, and, above all, skills and adoption of digital technologies in society through the Digital Skills and Jobs Coalition programme, which has planned budget of 700 million for the period 2021-2027.

WEEK 2 - IOT, CYBERSECURITY AND PRIVACY

Digital skills, however, do not only represent a challenge for the public; many private companies are making efforts on this front in Europe and even multinationals such as Facebook and Microsoft are investing to support skills in several EU countries such as Spain, Italy, and Poland, which suffer from most severe digital mismatch, as well as in the UK. In fact, Europe is presenting a far from united front in the global race for digital skills. The Economist's Automation readiness index, which ranks countries on three parameters (innovation ecosystem, labour policies, and training policies) indicates that while Germany is a world-leader, often on a par with Japan and South Korea, Estonia is in the lead on the training front, ahead of South Korea, while Germany comes fourth and France and the UK come sixth and eighth respectively in the band of developed countries. Italy, meanwhile, is still in the group of "emerging" countries behind the Arab Emirates and Argentina.

The second week of the campaign was dedicated to the opportunities and risks of the IoT explosions and to its impact on cybersecurity and privacy for European citizens.

These two topic were coupled as cyberattacks are growing exponentially and the development of the Internet of Things, with its networks of smart objects, promises to further accelerate them. Two figures offer insight into this new scenario. In 2016, the Mirai attack against Dyn, one of the world's leading internet providers, put more than 150 thousand websites offline, including some of the major web platforms, such as Amazon, Spotify, Twitter, Reddit, Yelp, Netflix, and the New York Times website, by exploiting the vulnerabilities of common webcams, which it turned into systems to attack a target. Over 14 thousand customers abandoned Dyn's services, bringing the company, which was subsequently acquired by Oracle, to its knees. The second figure is 300%, which is the increase in the number of connected objects to 75 billion between now and 2025. These will include more and more cars, pacemakers, toys, and, of course, large infrastructures such as power plants, nuclear plants, and other utilities and transport networks. It is no coincidence that the projections for the cybersecurity market follow the same trend. Global turnover is set to rise over 62% from approximately 153 billion dollars in 2018 to 248 billion in 2023, according to Gartner analysts, who see the healthcare sector as being in the forefront for investments.

The attacks on our electronic security, both individual and collective, can take different forms, from DoS ("denial-of-service") attacks that bring down entire sites, to phishing attacks with deceptive emails and the spread of the dreaded "ransomware", computer viruses that hold whole systems hostage, blocking them until a ransom is paid. The latest Europol report on organised crime indicates that ransomware, which hit more than a billion people worldwide in 2017 alone, is the most dangerous. In fact, it was ransomware that held the IT systems of 14 British hospitals and several Spanish electricity companies, as well as another 45 thousand computers in 74 countries, hostage for 14 days in May 2017. Its name, WannaCry, could not be more apt, because thousands of people could not access basic services, such as electricity and healthcare, until the systems were unlocked.

A complicating factor in this scenario is the growing presence of governmental players who do not act for merely economic purposes, but also strategic ones, such as altering the results of an election or weakening a hostile government by sabotaging its vital infrastructure, such as electricity and water grids. The European Parliament launched the GDPR, the new European privacy regulation, in recent months, and has recently expressed concerns over the risk that, with the approach of the European elections next June, Facebook, Twitter, and other social networks could be vulnerable to interference activities aimed at tampering with the result of the vote. The EU has already put in place some initiatives to counter interference, including an amendment to the rules on party funding aimed at prohibiting the collection and use of user data for profiling purposes. The amendment will only apply to European "political groups", as the European Commission has no authority to directly sanction political parties in individual countries. Concerns are also growing on the other side of the Atlantic, where California has recently approved SB-327, the first US law on the security of smart objects, which imposes new security measures on all manufacturers as of 1 January 2020.

This measure has already been contested by many who consider the provision too vague, but it does at least have the merit of stealing a march on the Federal Congress, which is still dithering over the Internet of Things Cybersecurity Improvement act.

However, the most ambitious provision remains a Digital Geneva Convention aimed at protecting civilians from cyberattacks on vital infrastructures such as power grids and hospitals. It was recently re-launched by the president of Microsoft Brad Smith on the centenary of the armistice of the First World War, at the time called the war to end all wars. "Unfortunately, it was not", Smith emphasised, "and, as Albert Einstein noted, to really improve human life we have to adapt our policies and organisations to keep up with technology".

WEEK 3 - ONE OUT OF TWO EUROPEANS IS A DIGITAL MR. BEAN

The final week was dedicated to the dissemination of the results of data collected through the iNerd gamified survey and what are the issues to address.

The data collected through the gamified quiz

Big data, AI, social media, the Internet of things and cybersecurity are transforming our work environments as well as our life as citizens and consumers but more than 56% of Europeans is still lacking the basic skills and competeces to navigate effectively this new world. The indication emerges from the data collected in the first two weeks of REIsearch's 2018 campaign launched across Europe in six languages (English, French, German, Italian, Portuguese and Spanish) wit the support of nine leading European media organisations – including Der Standard, El País, Frankfurter Allgemeine Zeitung, Les Èchos, Il Sole24ore, Público, Euroscientist and Elsevier, to assess and improve the digital competences of European citizens.

As in previous campaign, the aim has not been to collect statistically significant data as the time frame and sample are too small, but to increase European citizen's awareness of topics crucial for their professional and social develpment and well-being through a gamified approach allowing both a rapid self assessment of one's digital skills as well as a path to discovering contents (e.g.: the explanatory video lectures on REIsearch website and the literature connected to them).

The data, presented at the European Parliament on November 6 during the "Toward a Good AI Society Summit", was collected online through iNerd, a gamified quiz on 4 topics: big data and AI, IoT, cybersecurity and privacy, and social and new media. Overall, in its first 4 weeks iNerd has been played by more than 26.000 Europeans collecting 12.000 complete surveys (the game remains active and numbers keep growing) delivering "Steve Jobs" or "Mr Bean" badges to be shared on social channels with the tag: #hownerdyareyou. The game remains active and the data collected so far shows that less than 1 in 10 Europeans (9,53%) scores high enough to win the "Nerd in Chief" badge, while more than 1 in 2 (56,3%) respondents obtains a digital "Mr Bean" badge having trouble defining an echo chamber or a kilobyte. More than 1 out of 3 respondents (34,7%) has however an intermediate level of skills. On average, the areas where Europeans seem more competent are big data, artificial intelligence and IoT while cybersecurity, privacy and social media remain more obscure.

Nerds in Chief and Digital Mr. Beans in Europe

Nerd in Chief
9.5

You can improve!
34.2

Digital Mr.Bean
56.3

Chart: REIsearch • Source: REIsearch • Get the data • Created with Datawrapper

Overall iNerd average scores

Social and New Media

23.76

Cybersec & Privacy

24.42

Big data and Ai

25.9

IoT

25.92

Chart: REIsearch · Source: REIsearch · Get the data · Created with Datawrapper

Men seem to fare slightly better answering correctly 47% of the times while women resond successfully on 44% of questions.

Successful answers by gender

Women

44%

Men

47%

Chart: REIsearch · Source: REIsearch · Get the data · Created with Datawrapper

Overall, French speakers emerge as the nerdiest group with the highest scores in three areas (social and new media; cybersecurity and privacy; big data and AI) while Germans come out first on IoT and second in all others. Spanish and Italian speakers come in third overall but with different strenghts: the first seem more skilled in social media and big data while the second score better on IoT and cybersecurity and privacy. Portuguese come in fifth overall but show the lowest awareness in the cybersecurity and privacy area while English speakers, which constitute more than 65% of respondents, show the lowest scores in three areas out of four: big data and Ai, Iot and social and new media.

iNerd scores by language of respondents

French speakers emerge as the nerdiest Europeans, while Germans come out first on IoT. Spanish and Italian speakers come in third overall but with different strengths. Portuguese come fifth overall with the lowest scores in cybersecurity and privacy. English speakers show the lowest scores in three areas out of four: big data and Ai, Iot and social and new media.

Big Data and AI | Cybersec and Privacy | Internet of Things | Social and New Media

Chart: REIsearch · Source: REIsearch · Get the data · Created with Datawrapper

REI
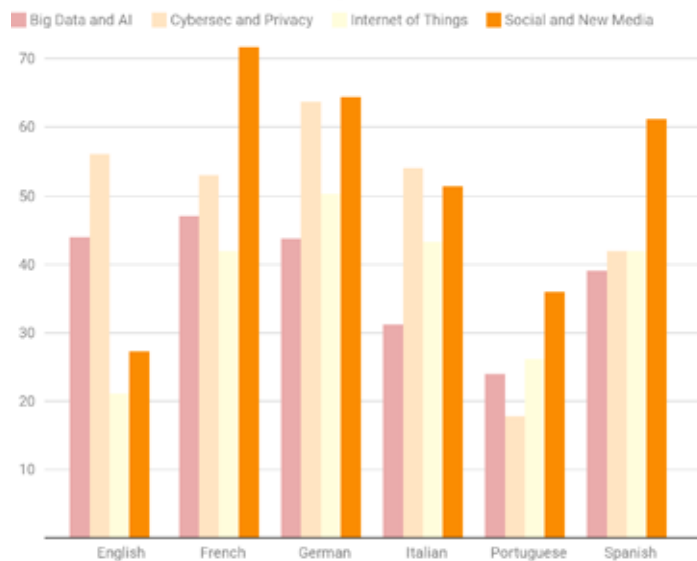
CONCLUSIONS

While not aiming to constitute a scientifically representative study, data collected through REIsearch's 2018 gamified survey in a Gdpr compliant modality, is in line with previous observations on European's digital skills and has shed a few indications on the general level of awareness of the European public on topics such as AI, social media and digital skills.

However, the most important observation is the need for accessible tools for self-evaluation of one's digital skills not only in the professional domain but expecially on the general knowledge of the digital world. This requires a non specialistic language, and a playful voice for questions to make participation fun.

Recommendations for more support to member states in developing infrastructure and connectivity as well as expanding advanced and lifelong training companies and Universities already abundant[1].

However, as recently noted by UNESCO, the the most critical area seem entry-level digital skills, meaning basic functional skills required to make basic use of digital devices and online applications, are widely considered a critical component of a new set of literacy skills in the digital era, with traditional reading, writing, and numeracy skills.

At the advanced spectrum of digital skills are the higher-level abilities that allow users to make use of digital technologies in empowering and transformative ways such as professions in ICT. Major digital transformations such as Artificial Intelligence (AI), machine learning, big data analytics, change skills requirements and, in turn, impact capacity building and skills development for the 21st century digital economy.

To thrive in the connected economy and society, digital skills must also function together with other abilities such as strong literacy and numeracy skills, critical and innovative thinking, complex problem solving, an ability to collaborate, and socio-emotional skills.

The topics of future media and citizen engagement campaigns should therefore be designed to maximise dissemination of the resources made available on the REIsearch platform (e.g. for 2018 these cover four areas of coumputer science: Big data and analytics; internet of things; social media; cybersecurity) and to other contents made available on the new REIsearch platform.

The more user friendly, entertaining as well as informative, engagement campaign of 2018 has been met with strong approval by our media partners (El País, Der Standard, Frankfurt Allgemeine Zeitung, Il Sole24Ore, Les Echos and Pùblico), as it is better aligned with their content and readership and technically simpler to integrate in their websites.

All data gathered by the the 2018 and following campaigns will be made available to the public in an open data format to maximise its reuse and visibility.

We believe users will be more attracted to participate in future REIsearch campaigns as this will contribute to enhance their social reputation as experts in their fields of interest as well as their professional and educational profile.

As the language and culture of digital media evolve rapidly REIsearch's campaigns will have to keep the pace. New features to be considered for gamification of subsequent campaigns are:

1. Public leaderboards by area of expertise or geografical regions displaying the citizens[2] engagement points.

2. Possibility for groups (e.g. classrooms of groups of students) to hold private challenges.

3. Possibility for single users to individually challenge each other in real time.

4. Closer integration with media partners with long permanence of the game on their sites (ideally 6 months).

5. Agreement with media partners of actual rewards for the best users (e.g.: free subscription for the top scorers).

1. *Research for CULT Committee - Digital Skills in the 21st century http://www.europarl.europa.eu/RegData/etudes/STUD/2018/617495/IPOL_ STU(2018)617495_EN.pdf*
2. *CCBYNC – Creative Commons, attribution and non-commercial.*

ANNEX 1 - THE QUESTIONS OF THE SURVEY

The iNerd gamified survey was published on REIsearch's platform in six languages (English, French, German, Italian, Portuguese and Spanish) and publicized through direct links and banners by the media partners and directly by REIsearch through social media.

The game, still active at: https://game.reisearch.eu has an adaptive algorithm proposing from 8 to 11 questions to the user (the number and choice of questions varies according to ones performance).

AREA: BDA

BDA - 01

QUESTION	What type of test measures whether some observed value is similar to the population statistic, or if the difference between the observed value and the population statistic is large enough that it isn't likely to be by coincidence.
MULTIPLE CHOICE	A) Significance test - B) P-value - C) Critical value - D) Z score
CORRECT ANSWER	B) P-value
SCORE	10

BDA - 02

QUESTION	Moore's Law relates to how many transistors can be put on a computer chip.
YES OR NO ANSWERS	Radar with Yes or No answers
CORRECT ANSWER	Yes
SCORE	5

BDA - 03

QUESTION	Order these amounts of information from smallest to largest.
ORDERING	yottabyte, kilobyte, megabyte, zetabyte, gigabyte, exabyte, terabyte, petabyte
CORRECT ANSWER	kilobyte, megabyte, gigabyte, terabyte, petabyte, exabyte, zetabyte, yottabyte
SCORE	5

BDA - 04

QUESTION	A voluminous amount of structured, semi-structured and unstructured data that has the potential to be mined for information.
MULTIPLE CHOICE	A) Small Data - B) Meta Data - C) Statistical Data - D) Big Data
CORRECT ANSWER	D) Big Data
SCORE	15

BDA - 05

QUESTION	Leading analyst firm Gartner defines Big Data from three aspects, all starting with the letter V. Which of these are not a part of their consideration of big data?
MULTIPLE CHOICE	A) Value - B) Volume - C) Variety - D) Velocity
CORRECT ANSWER	A) Value
SCORE	15

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BDA - 06

QUESTION	How many hours of video are uploaded to YouTube every minute?
MULTIPLE CHOICE	35 - 60 - 100
CORRECT ANSWER	100
SCORE	10

BDA - 07

QUESTION	How many Exabytes of data is the Large Hadron Collider capable of producing in just one day.
MULTIPLE CHOICE	10 Exabytes - 100 Exabytes - 500 Exabytes
CORRECT ANSWER	500 Exabytes
SCORE	10

BDA - 08

QUESTION	What decade did formal "artificial intelligence" research begin?
MULTIPLE CHOICE	A) 1950s - B)1970s - C) 1960s
CORRECT ANSWER	A) 1950s
SCORE	5

BDA - 09

QUESTION	How much did Google pay for artificial intelligence firm DeepMind?
MULTIPLE CHOICE	A) $275 million - B) $750 million - C) $400 million
CORRECT ANSWER	C) $400 million
SCORE	5

BDA - 010

QUESTION	In 2016, who won the game of Go between world champion Lee Sedol and DeepMind's AlphaGo computer?
YES OR NO ANSWERS	Lee Sedol - AlphaGo
CORRECT ANSWER	AlphaGo
SCORE	5

BDA - 011

QUESTION	According to a study conducted by IBM, what is the largest single source where data is gathered?
MULTIPLE CHOICE	A) Email - B) Social Media - C) Business Transactions - D) Log Data
CORRECT ANSWER	C) Business Transactions
SCORE	5

BDA - 012

QUESTION	SAAS stands for?
MULTIPLE CHOICE	A) System Aerosurface Actuator Simulation - B) Systems as a Service - C) Software acting as Service - D) Software as a Service
CORRECT ANSWER	D) Software as a Service
SCORE	15

REI

BDA - 013

QUESTION	Which of the following is/are correct types of data?
CHECK BOX	A) Semi-structured Data - B) Unstructured Data - C) Semi Data
CORRECT ANSWER	A and B
SCORE	15

BDA - 014

QUESTION	The branch of data mining concerned with the prediction of future probabilities and trends.
MULTIPLE CHOICE	A) In-memory Analytics - B) Predictive Analytics - C) Behavioral Analytics - D) Big Data Analytics
CORRECT ANSWER	B) Predictive Analytics
SCORE	10

BDA - 015

QUESTION	Does Big Data analytics pose a threat to privacy?
MULTIPLE CHOICE	A) Yes - B) No - C) Only if the access to data is not controlled and accepted by users - D) Big Data analytics has nothing to do with privacy
CORRECT ANSWER	C) Only if the access to data is not controlled and accepted by users
SCORE	5

BDA - 016

QUESTION	Which of the following industries use Big Data analytics extensively? Check all that apply.
CHECK BOX	A) Finance and banking - B) Retail and healthcare - C) E-commerce and social media
CORRECT ANSWER	All
SCORE	10

BDA - 017

QUESTION	By "Concept Drift" Data Scientists refer to what?
CHECK BOX	A) A change in the respose the model used by analytics should provide - B) A change in the model adopted by analytics - C) A change in the users interacting with analytics
CORRECT ANSWER	A) A change in the respose the model used by analytics should provide
SCORE	15

BDA - 018

QUESTION	Data Streams require models supporting?
CHECK BOX	A) Discontinuity - B) Incremental updates - C) Data consistency
CORRECT ANSWER	B) Incremental updates
SCORE	15

BDA - 019

QUESTION	The acronym of the CAP theorem stands for
CHECK BOX	A) Composition Availability Price - B) Consistency Availability Partition tollerance - C) Consistency Availability Performance
CORRECT ANSWER	B) Consistency Availability Partition tollerance
SCORE	15

BDA - 020

QUESTION	By lambda architecture Data Engineers refer to
CHECK BOX	A) A data-processing architecture designed to handle massive quantities of data by taking advantage of elastic engines B) A data-processing architecture designed to handle massive quantities of data by taking advantage of Spark and Hadoop C) A data-processing architecture designed to handle massive quantities of data by taking advantage of both batch- and stream-processing methods
CORRECT ANSWER	C) A data-processing architecture designed to handle massive quantities of data by taking advantage of both batch-and stream-processing methods
SCORE	15

BDA - 021

QUESTION	According to Asimov's three laws, under what circumstances is it all right for a robot to injure a human being?
MULTIPLE CHOICE	A) Never - B) When the human being specifically requests it - C) In case of an accident - D) In case the robot controller is infected with a computer virus.
CORRECT ANSWER	A) Never
SCORE	10

BDA - 022

QUESTION	A robot car or truck can best keep itself traveling down a specific lane of traffic by means of:
MULTIPLE CHOICE	A) Stereoscopic machine hearing - B) Epipolar navigation - C) Edge detection - D) Proximity sensing
CORRECT ANSWER	C) Edge detection
SCORE	10

BDA - 023

QUESTION	The total number of ways in which a robot arm can move is known as
MULTIPLE CHOICE	A) Functional orientation - B) Degrees of freedom - C) Dimensional versatility - D) Coordinate geometry
CORRECT ANSWER	B) Degrees of freedom
SCORE	10

BDA - 024

QUESTION	Where did Hadoop get its name?
MULTIPLE CHOICE	A) It's an acronym - B) Toy elephant - D) An imaginary friend - C) A fictional character from literature
CORRECT ANSWER	B) Toy elephant
SCORE	15

BDA - 025

QUESTION	What is Artificial Intelligence?
MULTIPLE CHOICE	A) Logical Reasoning - B) Knowledge Representation - C) Natural Language Processing - D) All of the above and much more
CORRECT ANSWER	D) All of the above and much more
SCORE	5

AREA: CYP

CYP - 026

QUESTION	The Internet of Things is improving every day, but what percentage of devices were found to contain a security vulnerability?
MULTIPLE CHOICE	A) 15% - B) 30% - C) 50% - D) 70% - E) 90%
CORRECT ANSWER	D) 70%
SCORE	10

CYP - 027

QUESTION	What does the "https://" at the beginning of a URL denote, as opposed to "http://" (without the "s")?
MULTIPLE CHOICE	A) That the site has special high definition - B) That information entered into the site is encrypted - C) That the site is the newest version available - D) That the site is not accessible to certain computers - E) None of the above - F) Not sure
CORRECT ANSWER	B) That information entered into the site is encrypted
SCORE	15

CYP - 028

QUESTION	Which of the following is an example of a "phishing" attack?
MULTIPLE CHOICE	A) Sending someone an email that contains a malicious link that is disguised to look like an email from someone the person knows - B) Creating a fake website that looks nearly identical to a real website in order to trick users into entering their login information - C) Sending someone a text message that contains a malicious link that is disguised to look like a notification that the person has won a contest - D) All of the above - E) Not sure
CORRECT ANSWER	D) All of the above
SCORE	10

CYP - 029

QUESTION	A group of computers that is networked together and used by hackers to steal information is called a...
MULTIPLE CHOICE	A) Botnet - B) Rootkit - C) DDoS - D) Operating system - E) Not sure
CORRECT ANSWER	A) Botnet
SCORE	10

CYP - 030

QUESTION	Some websites and online services use a security process called two-step authentication. Which of the following images is an example of two-step authentication?
MULTIPLE CHOICE	IMAGES to select:A) http://assets.pewresearch.org/wp-content/uploads/sites/14/2017/02/14152926/pi_cybersecurity-quiz_question4_image-1_two-factor.png - B) http://assets.pewresearch.org/wp-content/uploads/sites/14/2017/02/14151835/pi_cybersecurity-quiz_question4_image-2_captcha.png - C) http://assets.pewresearch.org/wp-content/uploads/sites/14/2017/02/14151838/pi_cybersecurity-quiz_question4_image-3_security-questions.png - D) http://assets.pewresearch.org/wp-content/uploads/sites/14/2017/02/14151840/pi_cybersecurity-quiz_question4_image-4_confirm-image.png - E) http://assets.pewresearch.org/wp-content/uploads/sites/14/2017/02/14151840/pi_cybersecurity-quiz_question4_image-4_confirm-image.png - F) None of these - G) Not sure
CORRECT ANSWER	A) http://assets.pewresearch.org/wp-content/uploads/sites/14/2017/02/14152926/pi_cybersecurity-quiz_question4_image-1_two-factor.png
SCORE	5

CYP - 031

QUESTION	Which of the following four passwords is the most secure?
MULTIPLE CHOICE	Boat123 - WTh!5Z - into*48 - 123456 - Not sure
CORRECT ANSWER	WTh!5Z
SCORE	5

CYP - 032

QUESTION	Criminals access someone's computer and encrypt the user's personal files and data. The user is unable to access this data unless they pay the criminals to decrypt the files. This practice is called …
MULTIPLE CHOICE	A) Botnet - B) Ransomware - C) Driving - D) Spam - E) None of the above - F) Not sure
CORRECT ANSWER	B) Ransomware
SCORE	5

CYP - 033

QUESTION	"Private browsing" is a feature in many internet browsers that lets users access web pages without any information (like browsing history) being stored by the browser. Can internet service providers see the online activities of their subscribers when those subscribers are using private browsing?
CHECK BOX	Yes - No - Not sure
CORRECT ANSWER	Yes
SCORE	5

CYP - 034

QUESTION	Turning off the GPS function of your smartphone prevents any tracking of your phone's location.
CHECK BOX	True - False - Not sure
CORRECT ANSWER	False
SCORE	5

CYP - 035

QUESTION	If a public Wi-Fi network (such as in an airport or café) requires a password to access, is it generally safe to use that network for sensitive activities such as online banking?
CHECK BOX	Yes, it is safe - No, it is not safe - Not sure
CORRECT ANSWER	No, it is not safe
SCORE	15

CYP - 036

QUESTION	What kind of cybersecurity risks can be minimized by using a Virtual Private Network (VPN)?
MULTIPLE CHOICE	Use of insecure Wi-Fi networks - Key-logging - De-anonymization by network operators - Phishing attacks - Not sure
CORRECT ANSWER	Use of insecure Wi-Fi networks
SCORE	10

CYP - 037

QUESTION	What is a computer network?
MULTIPLE CHOICE	A) super computer owned only by the government - B) A web of connected computers or devices - C) A computer vulnerability D) An Internet service provider - E) All of the above
CORRECT ANSWER	B) A web of connected computers or devices
SCORE	5

CYP - 038

QUESTION	Why are cyber vulnerabilities unlikely to ever go away?
MULTIPLE CHOICE	A) They're protected in a secret base on the moon - B) Criminals need them to steal identities - C) They are side effects of the freedom and ease of communicating online - D) The government won't allow people to fix them
CORRECT ANSWER	C) They are side effects of the freedom and ease of communicating online
SCORE	10

CYP - 039

QUESTION	The size and complexity of networks grew enormously when:
MULTIPLE CHOICE	A) Only governments and universities owned computers - B) Spamware caused some computers to break down - C) The number of personal computers greatly increased - D) The hacktivists started using the internet
CORRECT ANSWER	C) The number of personal computers greatly increased
SCORE	5

CYP - 040

QUESTION	Which of these groups exploits cyber vulnerabilities?
CHECK BOX	A) Criminals - B) Governments - C) Hacktivists
CORRECT ANSWER	All of the above
SCORE	10

CYP - 041

QUESTION	Which of the following may try to intercept and use your messages for their own purposes?
CHECK BOX	A) News outlets - B) Governments - C) Advertising agencies - D) Crime rings
CORRECT ANSWER	All of the above
SCORE	10

CYP - 042

QUESTION	Why do hackers hack?
MULTIPLE CHOICE	A) To make discoveries - B) To protect information - C) To steal information - D) To expose corruption - E) All of the above
CORRECT ANSWER	All of the above
SCORE	15

REI

CYP - 043

QUESTION	When a company posts a privacy policy, it ensures that the company keeps confidential all the information it collects on users
YES OR NO ANSWERS	True - False
CORRECT ANSWER	False
SCORE	15

CYP - 044

QUESTION	In 2013, researchers showed that, in theory, a small amount of data on a person's movements is enough to uniquely identify them in an anonymized mobile phone metadata set. How many locations and times are needed to identify someone?
MULTIPLE CHOICE	Two - Four - Seven - Ten
CORRECT ANSWER	Four
SCORE	15

CYP - 045

QUESTION	Many implanted medical devices, like pacemakers, are now wirelessly accessible, making them a new focus of privacy concerns. Which prominent figure dramatized the risk that an implanted device could be hacked?
MULTIPLE CHOICE	Former Vice President Dick Cheney - Homeland's fictional Vice President William Walden - North Korean leader Kim Jong-un - German Chancellor Angela Merkel
CORRECT ANSWER	Homeland's fictional Vice President William Walden
SCORE	15

CYP - 046

QUESTION	How much information is required to mathematically capture the unique features of your face?
MULTIPLE CHOICE	256 gigabytes (an entire computer hard drive) - 256 megabytes (a big movie file) - 256 kilobytes (a small image file) - 256 bits (a single sentence)
CORRECT ANSWER	256 bits (a single sentence)
SCORE	15

CYP - 047

QUESTION	Sites visible in the EU are required by law to display a privacy policy on their website.
YES OR NO ANSWERS	True - False
CORRECT ANSWER	True
SCORE	5

CYP - 048

QUESTION	If a company has a privacy policy on its website it should no share my personal information infringing it.
YES OR NO ANSWERS	True - False
CORRECT ANSWER	True
SCORE	10

CYP - 049

QUESTION	Internet "cookies" are:
MULTIPLE CHOICE	A) The same as browser bookmarks - B) Delicious - C) Text packets stored on your computer by Web sites - D) Illegal to use
CORRECT ANSWER	C) Text packets stored on your computer by Web sites
SCORE	15

CYP - 050

QUESTION	If I give a company my email address and they contact me via email, the email must contain:
CHECK BOX	A) A subject line that accurately reflects the content of the message. - B) A valid physical postal address for the company - C) A clear and conspicuous way to opt out of future emails.
CORRECT ANSWER	All
SCORE	15

AREA: IOT

IOT - 051

QUESTION	How many wireless connected devices will there be by 2020?
MULTIPLE CHOICE	A) Less than 10 million - B) 11-20 billion - C) 21-30 billion - D) 31-40 billion - E) 40+ billion
CORRECT ANSWER	E) 40+ billion
SCORE	10

IOT - 052

QUESTION	How much will the Internet of Things be worth by 2020?
MULTIPLE CHOICE	A) $1-2 trillion - B) $2-4 trillion - C) $4-6 trillion - D) $6-8 trillion - E) $8-10 trilion
CORRECT ANSWER	D) $6-8 trillion
SCORE	5

IOT - 053

QUESTION	The Internet of Things will run on many communication standards. Which of these is not a standard body or protocol?
MULTIPLE CHOICE	A) Zigbee - B) AllSeen - C) Open Interconnect Consortium - D) Tyrell - E) Thread
CORRECT ANSWER	D) Tyrell
SCORE	15

IOT - 054

QUESTION	How many connected cars will be on our roads by 2020?
MULTIPLE CHOICE	A) < 50 million - B) 51-100 million - C) 101-150 million - D) >150 million
CORRECT ANSWER	D) >150 million
SCORE	5

REI

IOT - 055

QUESTION	What does reasearch suggest that people value most when buying a new car?
MULTIPLE CHOICE	A) Power and handling - B) Colour - C) Engine size - D) Free added extras - E) In-car technology
CORRECT ANSWER	E) In-car technology
SCORE	5

IOT - 056

QUESTION	What do start-ups think is the most important aspect of a successful wearable product?
MULTIPLE CHOICE	A) Price - B) Connectivity - C) Features - D) Design - E) Third-party apps
CORRECT ANSWER	D) Design
SCORE	10

IOT - 057

QUESTION	Machine-to-Machine devices will connect many industrial processes to networks for the first time thanks to Embedded SIMs. How many will be in use by 2020?
MULTIPLE CHOICE	A) < 10 million - B) 10-15 billion - C) 15-20 billion - D) 20+ billion
CORRECT ANSWER	C) 15-20 billion
SCORE	5

IOT - 058

QUESTION	People love paying with contactless cards, and are increasingly able to use their mobiles to pay too. 0.5% of people around the world paid with their smartphone at least once a month last year. In 2015 this will increase:
MULTIPLE CHOICE	A) 2x - B) 4x - C) 6x - D) 8x - E) 10x
CORRECT ANSWER	E) 10x
SCORE	10

IOT - 059

QUESTION	How many usernames and passwords does the average person have?
MULTIPLE CHOICE	A) 10 - B) 15 - C) 20 - D) 25 - E) 30
CORRECT ANSWER	D) 25
SCORE	10

IOT - 060

QUESTION	The Apple iPhone was first released in what year?
MULTIPLE CHOICE	2005 - 2007 - 2009 - 2011
CORRECT ANSWER	2007
SCORE	10

IOT - 061

QUESTION	"Net Neutrality" refers to
MULTIPLE CHOICE	A) The posting of a website that are non partisan - B) The way Wikipedia editors handle new entries - C) Equal treatment of digital content by Internet providers
CORRECT ANSWER	Equal treatment of digital content by Internet providers
SCORE	15

IOT - 062

QUESTION	What year does futurist Ray Kurzweil believe AI will meet adult human intelligence?
MULTIPLE CHOICE	A) 2029 - B) 2024 - C) 2082
CORRECT ANSWER	A) 2029
SCORE	15

IOT - 063

QUESTION	What is the difference between Augmented Reality and Mixed Reality
MULTIPLE CHOICE	A) In AR the user interects with the real world enriched with virtual features while in MR the user interacts with virtual elements - B) MR is only a feature of video games
CORRECT ANSWER	B) MR is only a feature of video games
SCORE	15

IOT - 064

QUESTION	In AR "Occlusion" is important because:
MULTIPLE CHOICE	A) It adds perspective to the environment - B) It allows viewing virtual elements in space - C) It alloes to hide virtual elements behind real ones
CORRECT ANSWER	A) It adds perspective to the environment
SCORE	15

IOT - 065

QUESTION	What is IoT built on?
MULTIPLE CHOICE	A) Cloud computing - B) A network of data- gathering sensors - C) Both
CORRECT ANSWER	C) Both
SCORE	15

IOT - 066

QUESTION	Who said this? "The internet will disappear. There will be so many IP addresses, so many devices, sensors… that it will be part of your presence all the time. Imagine you walk into a room and you are interacting with the things going on in there."
MULTIPLE CHOICE	A) Mark Zuckerberg - B) Bill Gates - C) Steve Jobs - D) Eric Schmidt
CORRECT ANSWER	D) Eric Schmidt
SCORE	5

REI

IOT - 067

QUESTION	Which challenge comes under securing the information in IoT networks?
MULTIPLE CHOICE	A) Signaling - B) Security - C) Presence detection - D) Power consumption
CORRECT ANSWER	B) Security
SCORE	5

IOT - 068

QUESTION	The huge numbers of devices connected to the Internet of things have to communicate automatically, not via humans. What is this called?
MULTIPLE CHOICE	A) Machine to Machine (M2M) - B) Bot to Bot (B2B) - C) Skynet - D) Intercloud
CORRECT ANSWER	A) Machine to Machine (M2M)
SCORE	10

IOT - 069

QUESTION	TRUE or FALSE: Seals have been connected to the Internet of Things?
YES OR NO ANSWERS	A) True - B) False
CORRECT ANSWER	A) True
SCORE	5

IOT - 070

QUESTION	Groningen, Netherlands has Internet-enabled dustbins. What benefit does this provide?
MULTIPLE CHOICE	A) The bins can report vandals - B) The bins can ask to be emptied - C) The bins sort recyclable materials
CORRECT ANSWER	B) The bins can ask to be emptied
SCORE	10

IOT - 071

QUESTION	Some companies refer to the IoT as the IoE. What does it mean?
MULTIPLE CHOICE	A) Internet of Ethernet - B) Internet of Everything - C) Internet of Enterprise - D) Internet of Elegance
CORRECT ANSWER	A) Internet of Ethernet
SCORE	15

IOT - 072

QUESTION	Why did the City of London ask a recycling firm to stop a test project using connected recycling bins?
MULTIPLE CHOICE	A) There were fears of radio-wave exposure - B) The bins were tracking people's smartphones - C) The bins used too much electricity
CORRECT ANSWER	B) The bins were tracking people's smartphones
SCORE	5

IOT - 073

QUESTION	Security expert Eugene Kaspersky calls the IoT what?
MULTIPLE CHOICE	A) The Internet of Totality - B) The Internet of Threats - C) The Internet of Teams - D) The Internet of Time
CORRECT ANSWER	B) The Internet of Threats
SCORE	10

IOT - 074

QUESTION	What is the size of the IPv6 addressed?
MULTIPLE CHOICE	A) 32 bits - B) 64 bits - C) 128 bits - D) 256 bits
CORRECT ANSWER	C) 128 bits
SCORE	15

IOT - 075

QUESTION	Who invented the term Internet of Things?
MULTIPLE CHOICE	A) Tim Berners Lee - B) Steve Jobs - C) Kevin Ashton - D) Glenn Mecaughty
CORRECT ANSWER	C) Kevin Ashton
SCORE	15

AREA: SNM

SNM - 076

QUESTION	One of these is a new social network used by hundreds of millions of teenagers and valued at $1bn. The other four do not exist. Which one is real?
MULTIPLE CHOICE	A) Music.ly - B) BantsBible - C) VidVote - D) BullyME - E) #SingSong
CORRECT ANSWER	A) Music.ly
SCORE	5

SNM - 077

QUESTION	A giraffe in a New York zoo became a YouTube sensation when the birth of her fourth calf was watched by 30 million people. Why did YouTube cut the livestream midway through?
MULTIPLE CHOICE	A) Soothing birthing music was playing in the background and the zoo didn't have the rights - B) The zoo hadn't paid for a premium YouTube account - C) The calf appeared to breech and they were worried about upsetting young viewers - D) There were concerns the stream violated YouTube's nudity and sexual content policy
CORRECT ANSWER	D) There were concerns the stream violated YouTube's nudity and sexual content policy
SCORE	5

SNM - 078

QUESTION	Why was Donald Trump's Twitter account briefly shut down?
MULTIPLE CHOICE	A) It was suspended because it was in violation of Twitter's policy on hate speech - B) It was suspended by a disgruntled, Trump-hating employee on their last day - C) Trump himself accidentally suspended the account while trying to add #MAGA to his Twitter name - D) It was suspended because Twitter CEO Jack Dorsey said he couldn't live with his conscience if he continued to enable such globally destabilising horror.
CORRECT ANSWER	B) It was suspended by a disgruntled, Trump-hating employee on their last day
SCORE	5

REI

SNM - 079

QUESTION	Jenna Abrams was a Trump-loving "alt-right" internet star who had 70,000 Twitter followers. But what was recently discovered about her?
MULTIPLE CHOICE	A) She voted for Hillary Clinton - B) She was being paid by Steve Bannon for specific pro-Trump tweets - C) She is suing Trump in court for breach of contract in a real estate deal - D) She was created by a Russia-based troll farm and doesn't really exist
CORRECT ANSWER	D) She was created by a Russia-based troll farm and doesn't really exist
SCORE	15

SNM - 080

QUESTION	In 2017 Twitter increased its limit to 280 characters. Taking advantage of the extra space, very tedious people used Wingdings to play all but one of the following games:
MULTIPLE CHOICE	A) Pong - B) Connect Four - C) Chess - D) Tetris
CORRECT ANSWER	A) Pong
SCORE	15

SNM - 081

QUESTION	In 2017 this image - https://www.flickr.com/photos/13476480@N07/26169340584 - was banned by Facebook because:
MULTIPLE CHOICE	A) It showed an image of war - B) It was judged unamerican - C) It infringed copyright - D) It ws in black and white - E) It violated the network's nudity policy
CORRECT ANSWER	E) It violated the network's nudity policy
SCORE	15

SNM - 082

QUESTION	Which of the following is not a social media application?
MULTIPLE CHOICE	A) Flickr - B) My Space - C) Linked In - D) All of these - E) None of These
CORRECT ANSWER	E) None of These
SCORE	5

SNM - 083

QUESTION	You don't have to be an official representative of an organization to create a Facebook page for that organization.
YES OR NO ANSWERS	A) True - B) False
CORRECT ANSWER	A) True
SCORE	10

SNM - 084

QUESTION	You can modify your YouTube account so comments must be approved before they are visible.
YES OR NO ANSWERS	A) True - B) False
CORRECT ANSWER	A) True
SCORE	15

SNM - 085

QUESTION	What social networking site has a feature called "Answers" that allows users to ask other members for professional advice?
MULTIPLE CHOICE	A) Wikipedia - B) Cha Cha - C) Yahoo - D) Linked In
CORRECT ANSWER	B) Cha Cha
SCORE	15

SNM - 086

QUESTION	What is the most popular day for tweets?
MULTIPLE CHOICE	A) Friday - B) Saturday - C) Sunday - D) Monday - E) Tuesday
CORRECT ANSWER	A) Friday
SCORE	10

SNM - 087

QUESTION	Translate this emoji sentence: https://static01.nyt.com/images/2014/07/19/fashion/19EMOJI_10/19EMOJI_10-master315.jpg
MULTIPLE CHOICE	A) My television is broken. I've been kicking it around like a soccer ball. I should call a repair man later - B) I'm watching the World Cup. Call me later - C) I don't usually watch television until after I browse the Internet, exercise and make my evening phone calls - D) Can you watch the World Cup and talk later?
CORRECT ANSWER	B) I'm watching the World Cup. Call me later
SCORE	15

SNM - 088

QUESTION	Translate this emoji sentence: https://static01.nyt.com/images/2014/07/17/fashion/19EMOJI_1/19EMOJI_1-master315.jpg
MULTIPLE CHOICE	A) I'm sad because I lost all my money betting on a horse race - B) I'm sad because I don't have enough money to buy a horse - C) I refuse to spend money at the horse track - D) I bet you that horse is not going to win the race
CORRECT ANSWER	A) I'm sad because I lost all my money betting on a horse race
SCORE	5

SNM - 089

QUESTION	Who is this internet leader? http://assets.pewresearch.org/wp-content/uploads/sites/14/2014/11/internet-leader-copy.jpg
MULTIPLE CHOICE	A) Melissa Meyer - B) Sheryl Sandberg - C) Meg Whitman - D) Arianna Huffington
CORRECT ANSWER	B) Sheryl Sandberg
SCORE	10

SNM - 090

QUESTION	In what year did Facebook launch?
MULTIPLE CHOICE	2007 - 2004 - 2006 - 2002
CORRECT ANSWER	2004
SCORE	5

REI

SNM - 091

QUESTION	In what year did Twitter launch?
MULTIPLE CHOICE	2002 - 2004 - 2006 - 2008
CORRECT ANSWER	2006
SCORE	10

SNM - 092

QUESTION	What featured in the most retweeted Twitter image of all time?
MULTIPLE CHOICE	A) Grumpy Cat - B) Barak Obama celebrating re-election - C) Ellen's Oscar selfie - D) Someone's lunch
CORRECT ANSWER	C) Ellen's Oscar selfie
SCORE	5

SNM - 093

QUESTION	Can you permanently erase a social media post from Facebook?
YES OR NO ANSWERS	A) True - B) False
CORRECT ANSWER	B) False
SCORE	5

SNM - 094

QUESTION	In news media, the term echo chamber indicates:
MULTIPLE CHOICE	A) a situation in which beliefs are amplified or reinforced by communication and repetition inside a closed system as in some social networks - B) a music listening space online - C) an "acoustic mirror" you able to play the sounds it is exposed to
CORRECT ANSWER	A)
SCORE	10

SNM - 095

QUESTION	In internet slang a "troll" is:
MULTIPLE CHOICE	A) a class of being in Norse mythology and Scandinavian folklore - B) a demon and malignant creature - C) a person who sows discord on the Internet by starting quarrels or upsetting people
CORRECT ANSWER	C) a person who sows discord on the Internet by starting quarrels or upsetting people
SCORE	10

SNM - 096

QUESTION	Let's see how good you are at spotting fake news: is this pic of Julian Assange and Pamela Anderson real or fake? https://img.buzzfeed.com/buzzfeed-static/static/2018-05/4/16/enhanced/buzzfeed-prod-web-04/enhanced-6743-1525465690-1.png?downsize=715:*&output-format=auto&output-quality=auto
YES OR NO ANSWERS	Real - Fake
CORRECT ANSWER	Real
SCORE	15

SNM - 097

QUESTION	Let's see how good you are at spotting fake news. TRUE OR FALSE: 2014 was one of the deadliest years for plane crashes: 22 accidents resulted in 992 fatalities. This proves that flying is no longer safe.
YES OR NO ANSWERS	True - False
CORRECT ANSWER	False
SCORE	15

SNM - 098

QUESTION	Let's see how good you are at spotting fake news. TRUE OR FALSE: "I watched when the World Trade Center came tumbling down. And I watched in Jersey City, New Jersey, where thousands and thousands of people were cheering as that building was coming down."
YES OR NO ANSWERS	True - False
CORRECT ANSWER	False
SCORE	15

SNM - 099

QUESTION	What is the proprietary algorithm regulating Instagram users' experience?
MULTIPLE CHOICE	A) Edgerank - B) Pagerank - C) Timebased - D) InstaRank
CORRECT ANSWER	A) Edgerank
SCORE	10

SNM - 100

QUESTION	Facebook allows to advertise your posts as:
MULTIPLE CHOICE	A) CPC (cost per click) - B) CPM (cost per mille impression) - C) Pageviews - D) CPC and CPM
CORRECT ANSWER	D) CPC and CPM
SCORE	10

SNM - 101

QUESTION	Facebook allows to advertise your posts as:
MULTIPLE CHOICE	A) The number of times the item is uploaded - B) The number of times the item is viewed - C) The number unique users viewing the item
CORRECT ANSWER	C) The number unique users viewing the item
SCORE	5