

The age of digital enlightenment



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Executive Summary: Is your digital transformation strategy instinctive?

The digital transformation of UK plc and the public sector will empower us to live better, healthier, smarter lives. But whose insights and experiences are informing digital strategy? A pre-Internet generation that values the opportunity, but to whom digital is still widely a foreign language? Or digital natives, those who have been immersed in digital their whole lives?

The Realtime Generation survey reveals the digital footprint and behaviours of 13-17 year olds: our future workforce, customers, students, and recipients of digital transformation strategies.

Instinctively digital

The 17 year olds surveyed were born when the first smartphones were launching. For the third consecutive year, their number one role model is Bill Gates.

Spending on average nine hours a day online and mobile (93% own a smartphone), either collaborating, consuming, publishing content, or coding their own digital solutions, they are increasingly sophisticated in their digital literacy. For Realimers there is an app for everything – and if one doesn't exist, 18% potentially have the skills to build their own.

Digitally literate

A Silicon Valley addiction and a revised ICT curriculum, with its focus on 'how' as well as 'what', means the percentage learning to code (18%) is steadily increasing (16% in 2014, 7% in 2013). A respectable 41% are studying a qualification in computer science, and the number one career choice for boys is IT & Information Management.

7% have tried hacking - 1 in 14. Proportionately this equates to at least one hacker per classroom. And whilst most say they are hacking out of curiosity, it's important we channel their skills to the benefit of society.

A digital economy

Building a knowledge economy – innovating the next big technology trend, nurturing unicorns – needs creators and coders. We also need skilled ICT engineers to

help established organisations implement new digital infrastructures, to enable digital transformation, and maintain competitive advantage from the continued computerisation of operational processes.

It's essential however that we also recognise the economic opportunity of digitally literate Realimers. 52% are expecting to create their own applications to use on Higher Education and company networks and devices. They instinctively know how to use and exploit digital apps, devices, and data.

That 42% are happy to share their data in return for cash suggests a deep understanding of the value of data for personal or societal gain. Employers will be expected to mine data insights and to incentivise and responsibly monetise data for the benefit of customers, employees, and profit margins alike.

Reportedly 35% of jobs will be lost to computerisation, yet surely we will need a workforce able to manage increasingly digitalised functions, apps, and the Internet of Everything? Knowing how to use ICT is therefore as beneficial to future GDP as those that create and code the new technologies that keep us competitive in a global economy.

Digital enablement

From schools to business to UK Government, organisations should be mapping their digital transformation and enablement, bringing the insights of the digitally literate into the strategy process.

Realimers have an opportunity to achieve the efficiency and productivity gains from ICT that we promise ourselves and find difficult to deliver - and enable the digitalisation of our businesses whilst establishing new careers to achieve this. Let's create the opportunity for this generation to do so.

Gerry Carroll
Marketing Director,
Logicalis UK

My Digital Footprint: Instinctively Digital

Instinctively Digital: **Connected, consuming, collaborating**

The average Realtimer spends 9 hours a day digitally engaged

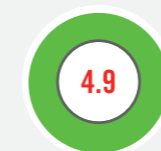
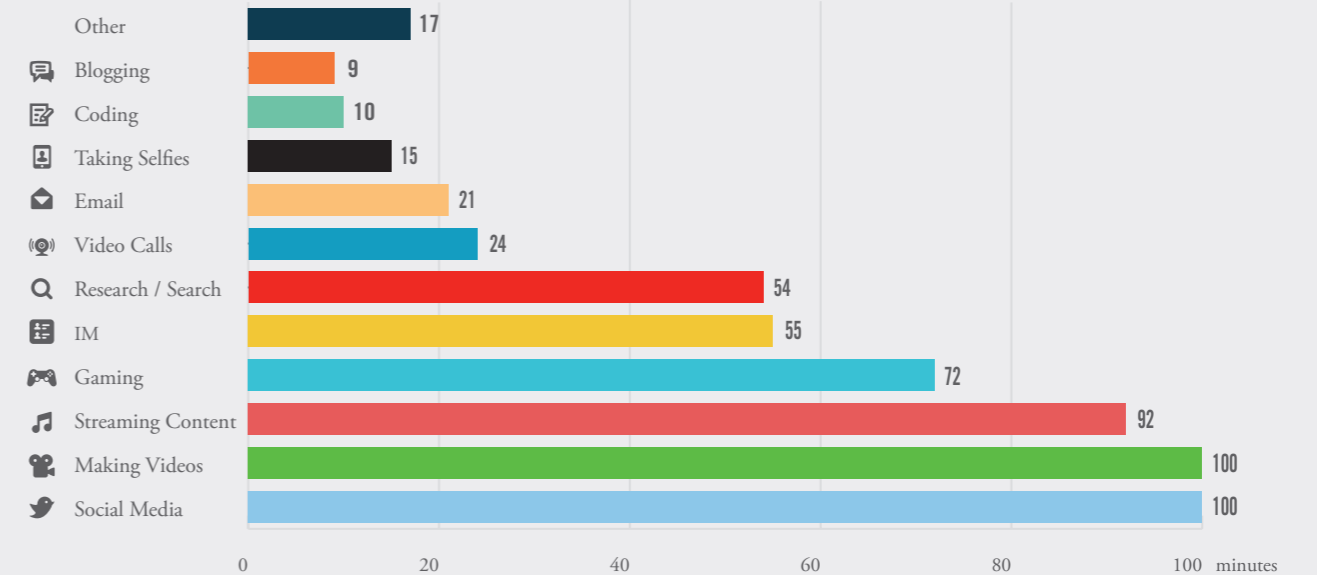
93% of those surveyed own a smartphone: this generation is online, mobile, and has an app for everything. They own an average of 4.9 digital devices, compared to six in 2013.

The availability of feature-rich devices and growth in the apps market puts some powerful technologies in the hands of these Real timers – and they're naturals at exploiting it. They average nine hours each day using digital devices to consume content and information, collaborate with peers, make and share their own content, and to code their own IT solutions.

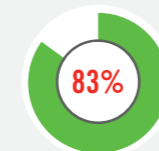
We should celebrate our digitally immersed teenagers: in a future where digitalisation is forecast to swallow up to 35% of jobs, their online activities are an early education for future careers that don't yet exist.



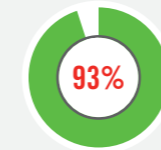
Average time spent per day (minutes)



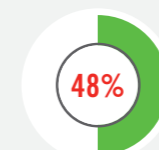
The average Realtimer owns 4.9 digital devices



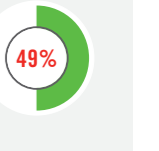
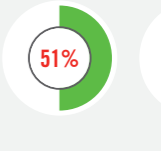
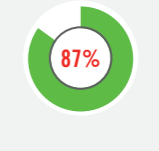
83% choose their devices, in 68% of cases somebody else pays for them



93% own a smartphone
55% Apple iOS, 39% Android OS



48% use online storage services



Top 3 platforms for content

YouTube (87%), Netflix (51%), Spotify (49%)



Instinctively Digital: @School

79% like using digital devices and tools in the classroom

47% have access to a campus-wide wireless or cabled network

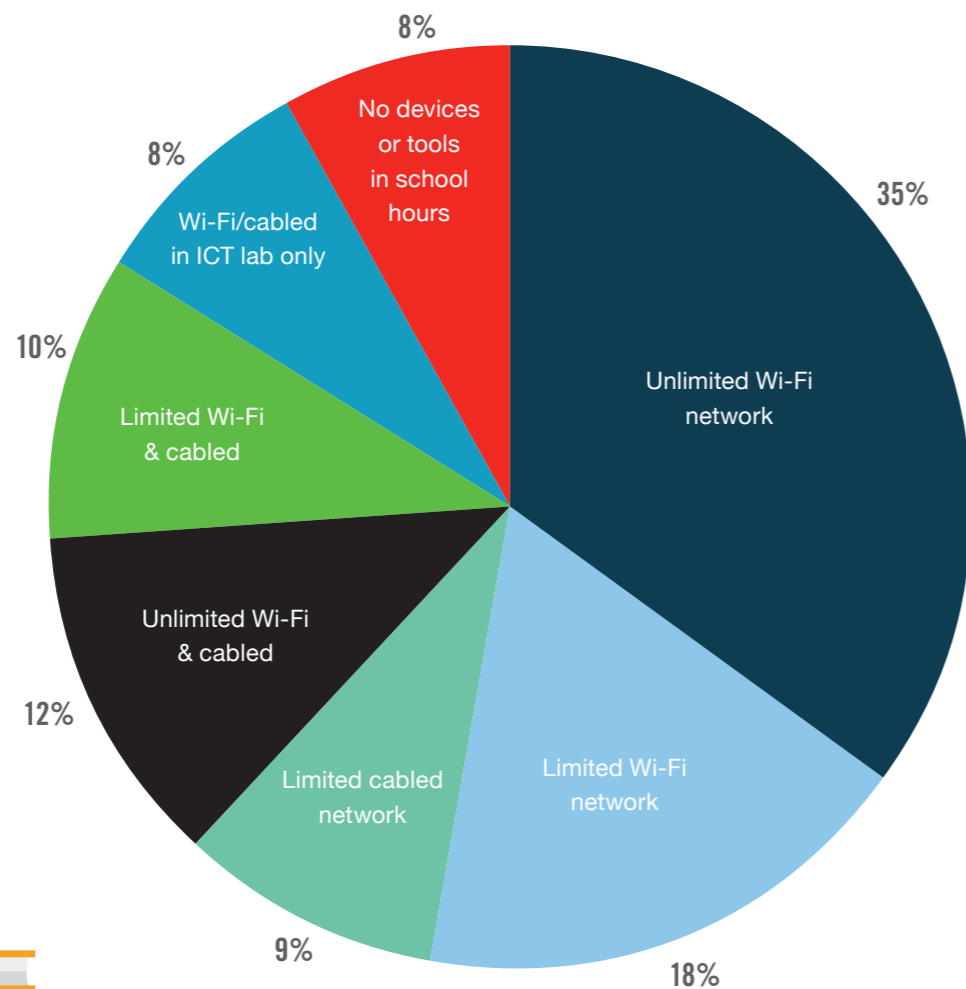
16% attend schools with limited or no IT facilities whatsoever

81% think teachers do a great job integrating digital learning into the classroom

Just as digital has infiltrated their personal profiles, so too has it at school. They're embracing the use of digital devices and applications within the classroom, and 79% think teaching is the better for it.

14% however would prefer to limit the use of digital devices and tools to IT and computer science classes, whilst 7% would prefer not to use any devices in class. Whilst this is a small percentage, it is not insignificant. Schools should be mindful to consider the most useful and relevant application of digital tools within the classroom; it's easy to fall into the trap of implementing technology for technology's sake and inhibit the usefulness of a digital strategy.

Student access to school ICT network infrastructure



Instinctively Digital: Customers

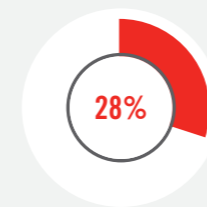
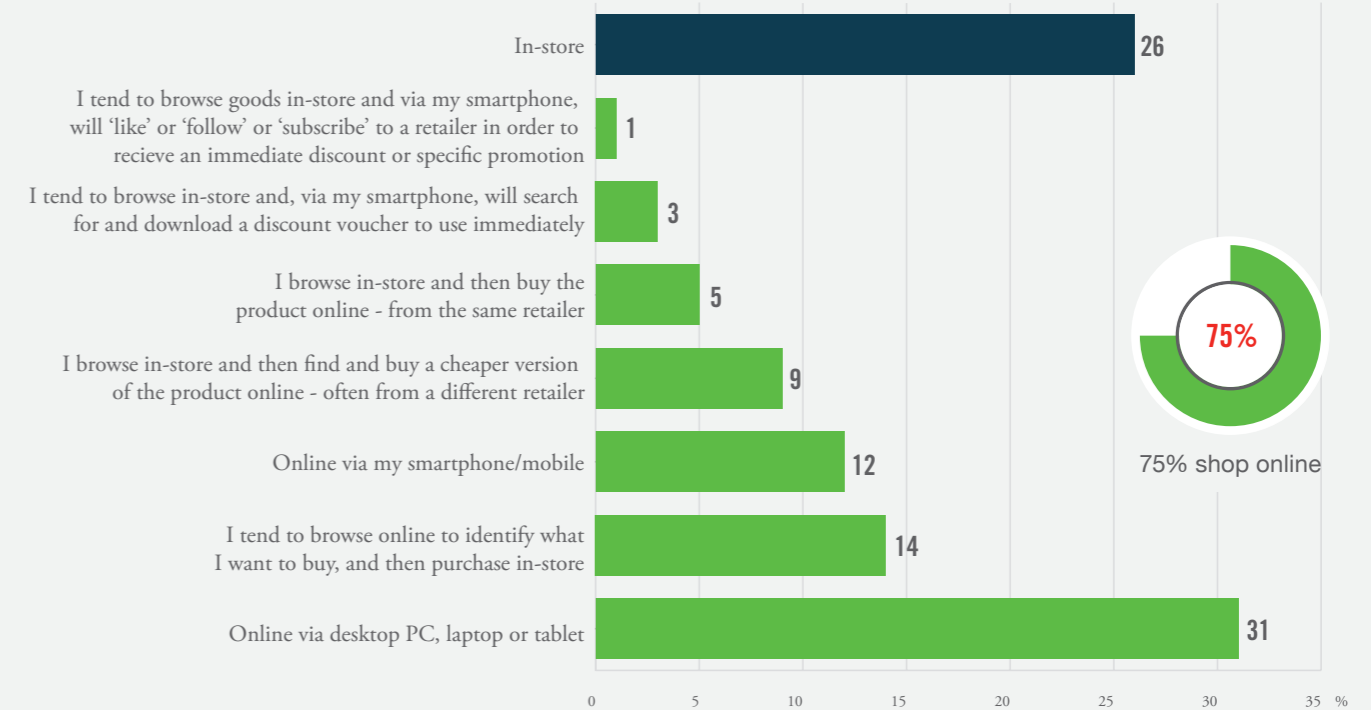
42% would rather earn £15 cash from giving away their personal data, than earn cash from a job

Inevitably, this generation's digital lifestyle is a marketers' dream. 73% follow brands they like, 62% click on ads within social media, and 57% make in-app or in-game purchases.

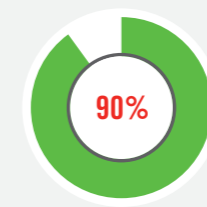
75% shop online or engage with a brand online, often to seek a better deal, as part of their shopping ritual.

They may not consider the impact of the data they are sharing, but the ease with which this generation engages digitally with brands (unknowingly?) is generating a lasting profile. This data is enabling organisations to better develop and market products and services. If you are not online, social, and incentivising in return for their loyalty, you will struggle to maintain brand awareness and future market share.

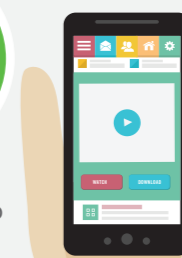
Which of these statements best applies to how you like to shop?



28% have given their personal information in return for discount or promotion



90% watch video tutorials



1/4 of girls follow more than 10 brands on social sites

Instinctively Digital: Creators of IT

18% are coding, of which 48% are girls and 52% are boys

65% of boys are coding at home versus 28% of girls

28% of boys are coding to solve a problem or because they couldn't find the app they needed

43% are coding or would like to learn how; 52% would make ICT & computer sciences a mandatory qualification in the curriculum

Though few are coding, at 18% this is greater than last year's 16% and more than double the 7% in 2013. A further 25% this year indicated they would like to learn how to code.

Even the familiar gender divide has reached a tipping point – of those coding, 48% are girls. Though 74% of these girls are coding for school projects it is important to recognise the economic potential of these figures.

Realtimers also recognise the benefit from ICT to their future careers – 52% would make ICT and computer sciences a mandatory qualification in the curriculum. Of which, 45% were girls.

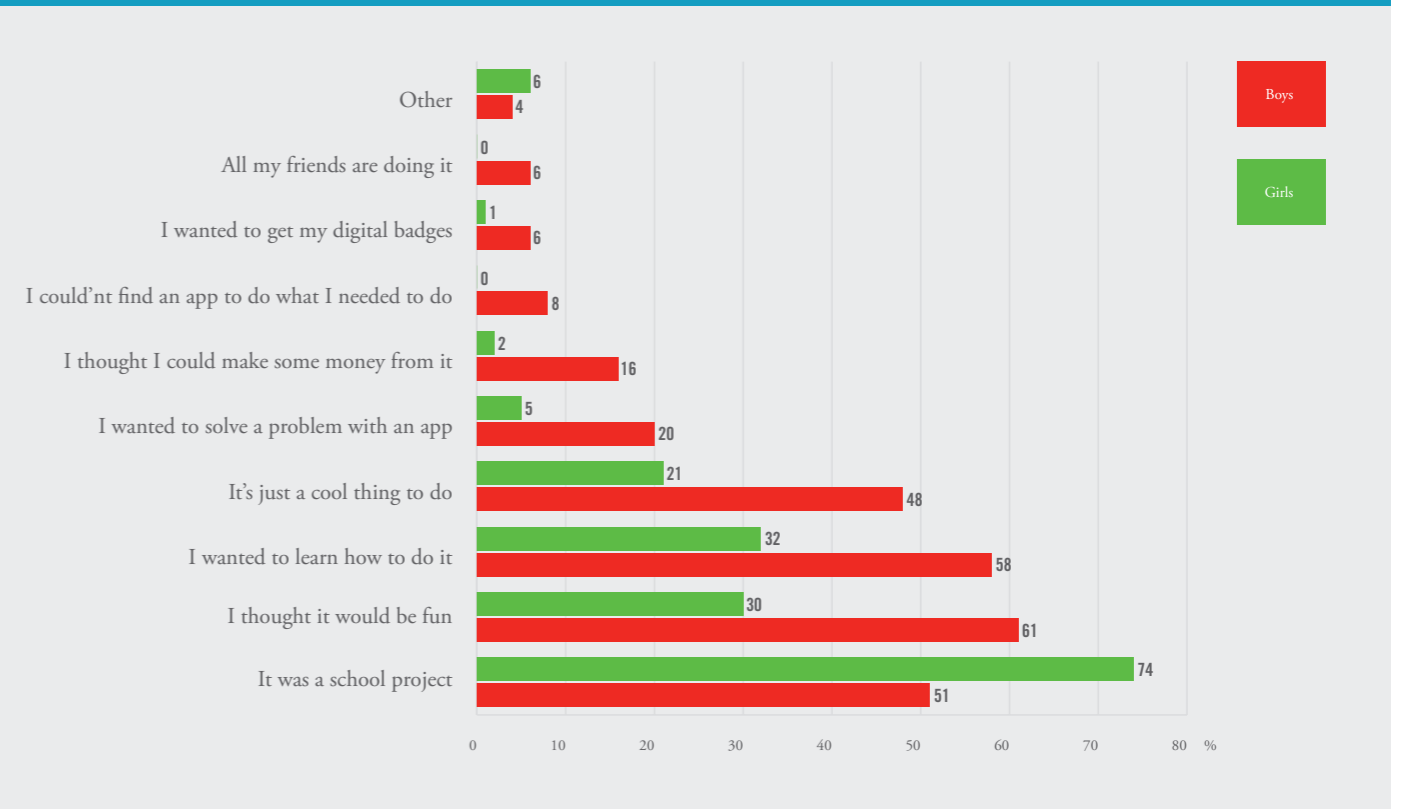
On the face of it, Realtimers appear to be voracious consumers of everything digital rather than creators of IT. With the recent change in UK curriculum and its emphasis on the building blocks of ICT – upon which we create apps, integrate processes, enable better synchronisation of data – within 10 years however a large proportion of your future workforce will probably know how to create or have the know-how to commission the IT they want.

In 15 years, the five year olds starting school now will graduate fully skilled in using, managing, and even coding their own digital solutions. Regardless of whether they work as an ICT engineer, on a shop floor, or product designer, this generation's digital instincts will be light years ahead from our existing expectations of 'ICT skills'.

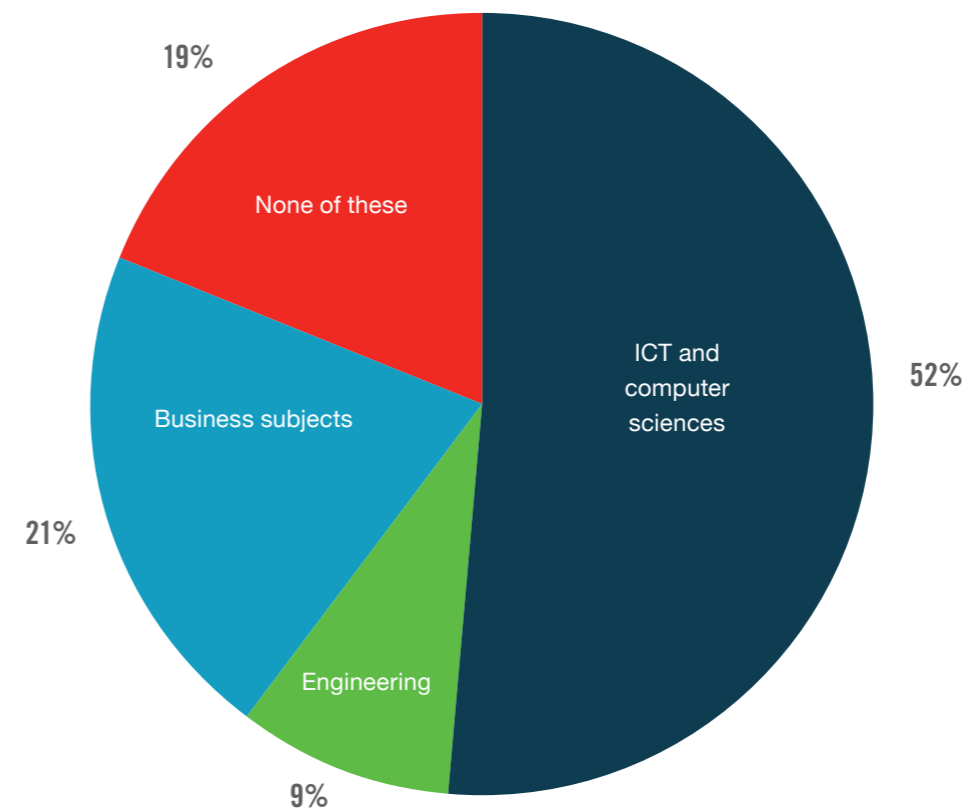
Just as personal PCs and virtual assistants replaced typing pools, and tablets transformed warehouse efficiency, how will your business adjust to embrace this digitally literate population?



Why are you coding? Girls versus boys. (multiple responses)



For the best possible career prospects, which of the following subjects should be mandatory at GCSE/Standard Level?



41% are currently taking a qualification in a computer science subject

58% of boys & 45% of girls would make ICT & computer sciences a mandatory qualification in the curriculum

Instinctively Digital: **Secure**

54% of girls are reporting suspicious online behaviour

37% of respondents have been targeted by an Internet scam

19% have been hacked

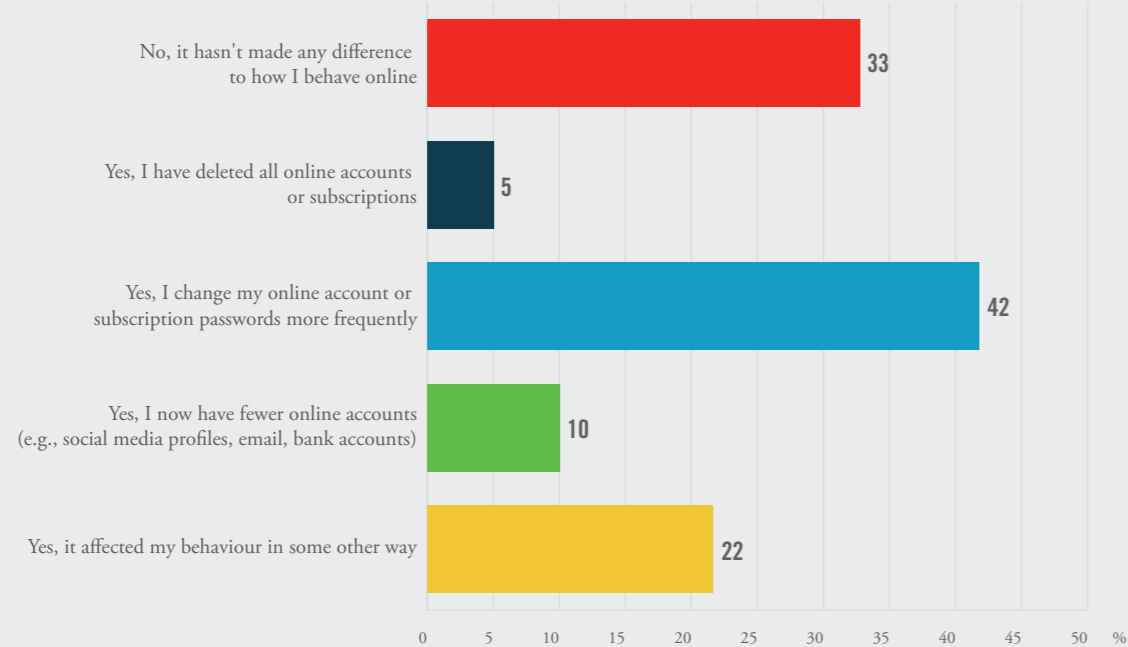
44% have reported inappropriate online behaviour, 7% have tried hacking

Just over half of all girls surveyed are regularly reporting inappropriate online behaviour, compared to 33% of boys. The fact that girls spend on average 45 minutes more per day on social networks is perhaps indicative of their increased exposure to suspicious behaviour. And whilst it's dismaying to see such a high number reporting suspicious behaviour, it's reassuring that Realtimers recognise threats and know how to report them.

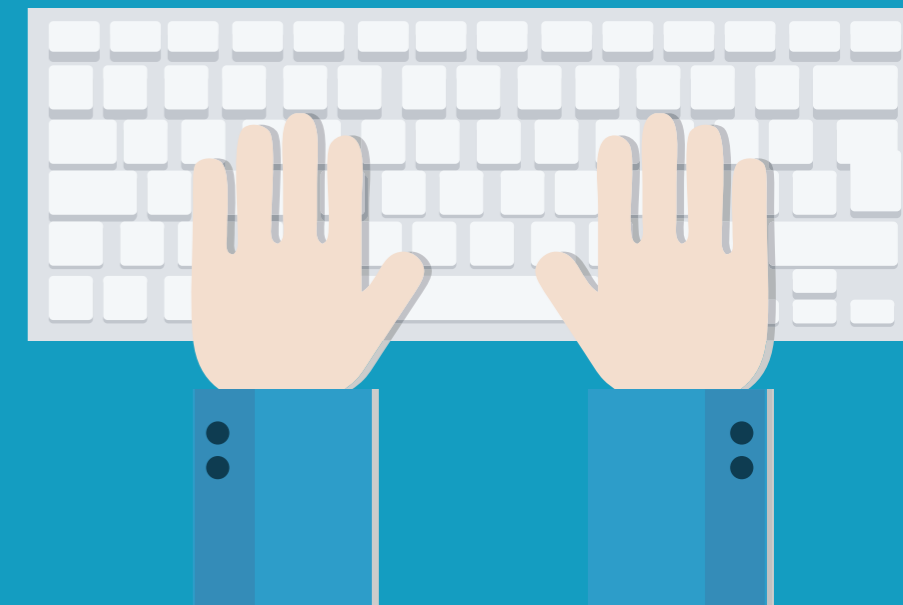
As might be expected 44% are not surprised to hear that teenagers are responsible for hacking large corporations. 19% have themselves been hacked – of which 72% said their email account was hacked, and 53% said their social network had been hacked.

As digital natives, it's inevitable that a proportion (7%) of Realtimers are trying out hacking for themselves. Most say they're doing it for fun or out of curiosity, but it's a fine line between 'fraping' (publishing offensive posts on your friend's Facebook feed) and a criminal record.

Has being hacked affected your online behaviour?



My Digital Future: Digitally Literate



Digitally Literate: Digital Economy

63% believe coding is a lucrative career option

52% think ICT & computer science should be a mandatory subject at GCSE/Standard Level

60% believe the ICT curriculum offers an adequate foundation for HE & career aspirations

71% believe it will be more important to know how to use IT, rather than create it

56% would like to create their own apps to use on HE or company network & devices

88% say they want a career doing something they'll enjoy

Top 3 career sectors: Science & Research, IT & Information Management, Manufacturing & Engineering; #1 role model is Bill Gates

Securing 28% of their vote (compared to just 6% of girls), the top career choice for boys is IT & Information Management. Boys' #1 role model is Bill Gates.

Topping the girls' list is Education & Training and Medicine & Nursing. Their #1 role model is Emma Watson. Yet, in spite of this, 57% of girls believe that coding is a lucrative career option, and 48% of those actively coding are girls.

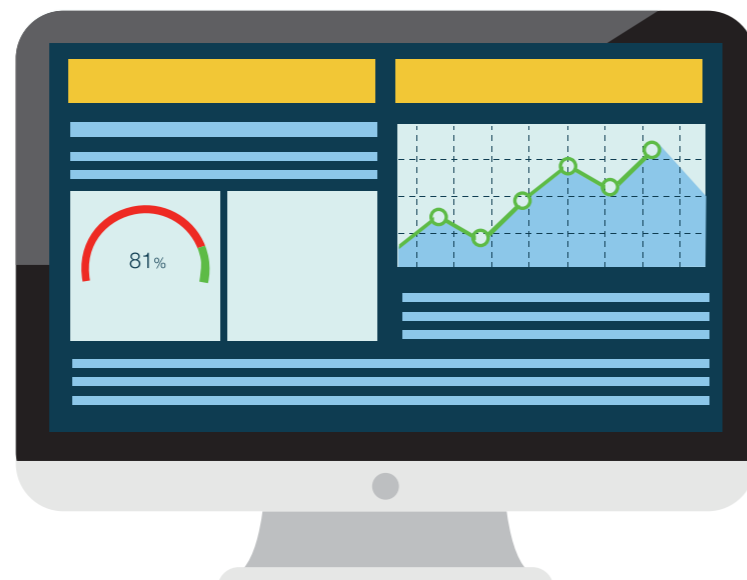
Though the gender ratio of those pursuing an ICT education appears to be closing, there is still considerable effort required to convince girls that a career in ICT is a rewarding one.

Whilst developing a knowledge economy - rebalancing the ICT curriculum in favour of how IT works as well as what it does, nurturing innovative entrepreneurs, encouraging inward investment, and job creation - is a key objective for UK Government, it's critical to also recognise the economic opportunity of digitally literate Realtimers.

71% believe it will be more important to know how to use IT, and 56% would like to create their own apps to use on a company's IT infrastructure.

This generation instinctively understands how to use and manage digital devices and applications. Daily, they spend an average nine hours digitally engaged - collaborating, consuming information, publishing their own content and, for a growing percentage, coding their own ICT solutions.

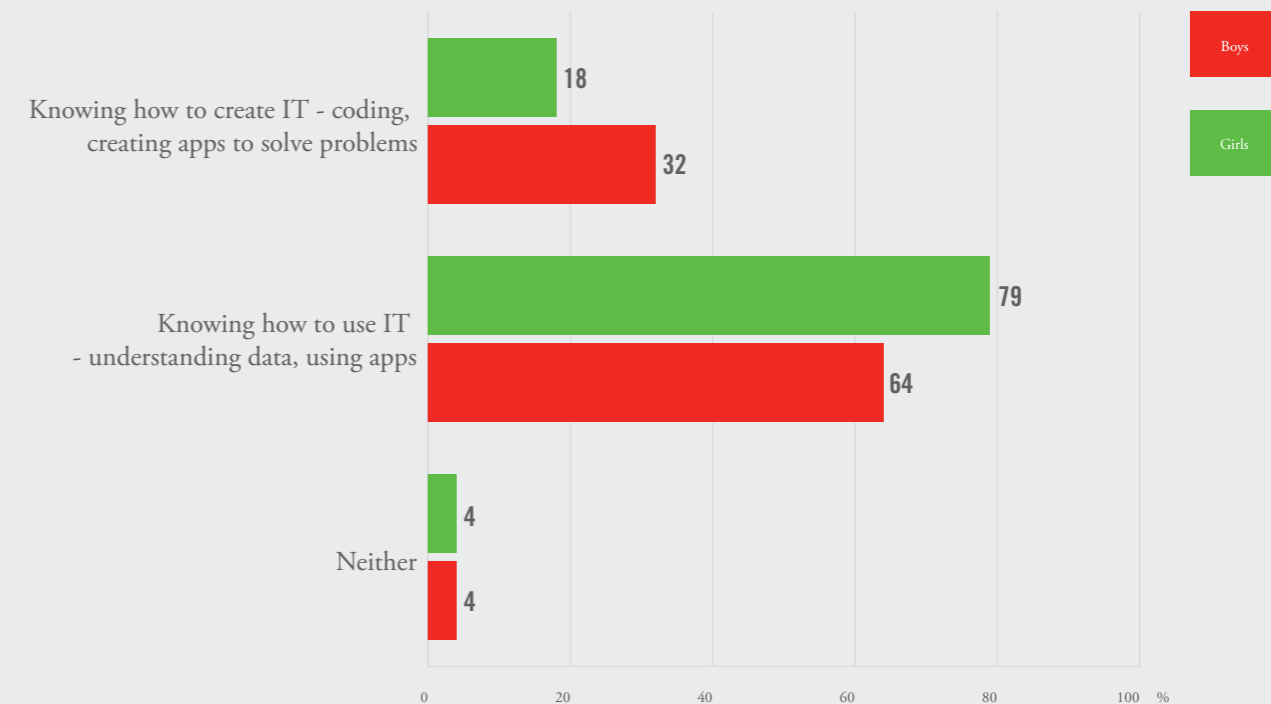
Realtimers are a future workforce that instinctively understands how to use and integrate applications and digital processes. They will be better equipped to manage the data generated by IoT-based products and services, and will expect data to be mined as-standard for revenue-generating insights and to deliver an improved consumer experience.



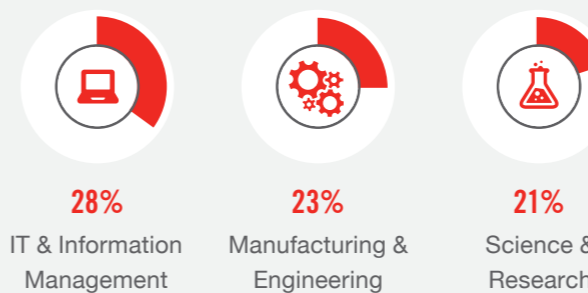
According to a 2015 study by Oxford University and Deloitte, within the next 20 years around 35% of jobs will be lost to computerisation. In response to these 'digitally automated jobs', we'll likely see the creation of new careers - at the very least to build, maintain, manage and analyse the applications and subsequent data generation - and, therefore, will need a workforce with the digital skills to fulfil them.

In the future, will the worker that understands how to use ICT be equally important as the one that creates ICT? The threat (and opportunity!) of digitalisation will demand it, and the Realtime Generation agrees. If this is the case, their digital habits now are an education for careers that don't yet exist.

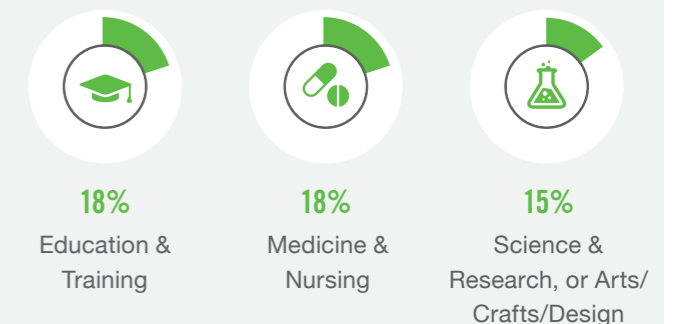
Which do you think will be most important to you, in your future career?



Boys' Top 3 Career Sectors:



Girls' Top 3 Career Sectors:



Digitally Literate: Learning in digitally-enabled ways

64% of boys & 48% of girls want to create & use their own apps in HE/workplace

87% say HE will need to update devices & access to ICT to support their needs – 88% think their employer will have to as well

56% would like to create their own apps to use on HE or company network

Eat your heart out shadow IT – this generation will want permission to create, commission and operate their apps on the HE and company network. Control versus choice? Both please!

Likewise, the highly mobile, feature-rich, and funded digital consumer experience they enjoy now – I choose and, in most instances, you pay – they will expect to be replicated throughout their education and career.

81% are expecting autonomy over the devices and tools they use in HE, albeit the devices they currently own they will provide and fund. However, they will expect the HE institution to provide and fund applications (64%) collaboration tools (79%) and video conferencing (64%).

In the workplace however, more than half of Realtimers agree the provision and funding of digital devices, services and tools is the responsibility of the employer – even their fixed and mobile broadband. With 69% expecting to work flexibly, both hours and location, might an employer's overheads in the future run to include home broadband?

Digitally Literate: Analogue Culture vs. Digital Decade

80% think UK broadband is good enough for homeworking

62% think public Wi-Fi is not good enough for work purposes

The top three skills and qualities in the workplace:

1. Time management (35%)
2. Ability to use ICT programmes (29%)
3. Team leadership (28%)

69% want to work flexibly, 35% say earning a living wage is top priority

Since 69% want flexibility over their hours and location of work, it is fortunate Realtimers regard time management as the number one employee skill. 35% say earning a living wage is a priority, whilst just 2% said access to good transport links is.

Instinctively mobile and with a rich experience of ICT applications and collaboration tools, this generation will probably consider it unproductive and culturally archaic to commute daily to an office.

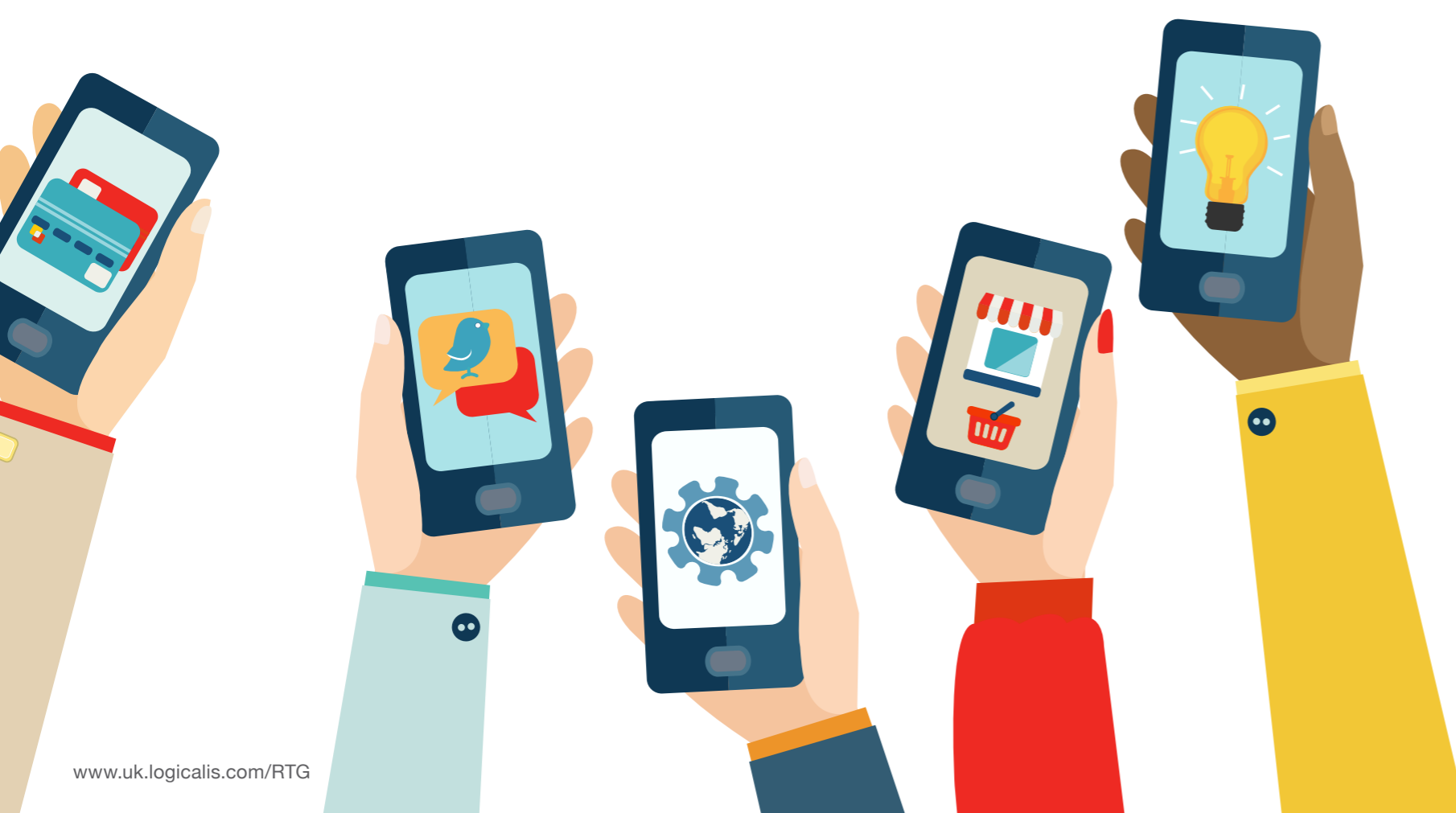
Furthermore, the increasing digitalisation of factories, warehouses, and delivery services, for example, means these environments could be easily managed and maintained remotely.

And whilst we may not be ready for boys' expectations that work should be flexible to their needs as long as they get the job done (27%), it does pose the question whether the digital behaviour of Realtimers will one day change the concept of the working day, as well as salary structures. In the future, will pay-as-you-go contracts be the norm?

Understanding and drawing upon Realtimers' innate digital skills and behaviour is an opportunity to evolve and digitally enable our workplaces, infrastructure, operations and culture, and to finally realise the productivity promise from technology.

Which of the following Government initiatives is the most important to you?

1. Earning a living wage – 35%
2. Getting the best quality education – 29%
3. Reducing unemployment – 19%
4. Nationwide access to ultra-fast broadband – 11%
5. Helping increase home ownership – 5%
6. Access to good transport links – 2%



Digitally Literate: My data...in return for?

- 44% trust UK Government with personal data, in return for a better service

- 38% trust brands

- 37% trust service providers

- At 25%, least trusted is social media

UK Government is most trusted with data, social media least trusted

When it comes to sharing data with organisations, 44% of Realtimers trust the UK Government in comparison to only 25% who trust social media platforms. It is an interesting perspective: Realtimers spend on average 100 minutes per day on social media, it is the digital activity they claim to spend most time doing - and probably where they share the most data. Their behaviour, from sharing photos and liking brands, to publishing their opinions, is helping marketers create detailed digital profiles of this generation, however social platforms remain the least trusted of organisations by Realtimers.

By contrast, Realtimers have the least interaction with the UK Government.

What is significant is the fact Realtimers understand that sharing data for a meaningful purpose should result in a better service or deal in return. 54%, for instance, are unwilling for their location data to be used or shared, however a majority (39%) then say they are willing to share location data if it is used by a University to help them use facilities, navigate the campus or improve personal safety.

Given 42% would be happy to earn £15 cash by giving away their personal data, it's no surprise Realtimers say they are happy to share their data provided there is direct personal gain or benefit.

In each of the scenarios when we asked Realtimers to state if they'd be happy or unhappy to share their data, about one third were 'not sure'. This leaves significant scope for marketers to clearly outline the customer benefit, and for organisations to ensure that data held is both secure and really does deliver an improved service or experience.

For the pre-Internet generation, data privacy is a divisive issue. But the strength of feeling ensures healthy debate and policy change in data security. In contrast, will the Realtimer's laissez faire attitude – in both unknowingly sharing personal data as well as blatantly doing so for monetary gain – encourage more unscrupulous trading in data?

Mostly happy

- Sharing location data with university to help use facilities or campus better, improve personal safety (39%)
- Health data being monitored and shared with medical staff to better diagnose (37%)
- Biometric data passwords (42%)



Mostly unhappy

- Organisations sharing data with 3rd parties (60%)
- Movement tracked, via personal device, in-store for marketing purposes (41%)
- Online habits used to provide targeted adverts & promotions (50%)
- Location data used or shared (54%)

Digitally Literate: An app for everything

- 55% believe the UK has a broadband infrastructure able to support the growth in digital devices & services

- But 65% do not believe the UK is a leader in innovation of digital technologies

Within 5 years most believe we will be 3D printing & self-health monitoring daily

Consistent with their willingness to share data for personal gain or benefit, Realtimers are expecting to use, in the near future, applications and services that will enable and improve how they live, work and learn.

Many are already monitoring and managing aspects of their personal life via digital devices and apps, such as music and media (79%), exercise (38%), and health (14%). And, in the future, more than half believe they will control or track remotely these as well as their friends and family, heating, lighting, car, CCTV, and alarm systems.

Creating and implementing IoT as standard into product development, let alone managing and integrating the impact on ICT infrastructure, security, and subsequent data streams, will require skilled employees. We've got an emerging workforce that ticks all these boxes, is instinctively digital and digitally literate: are you ready for the Realtime Generation?

How far into the future do you think it will be until we're using the following technologies in day-to-day life?

Within five years:	Within 10 years:	Within 15 years:
<p>3D printing, self-health monitoring</p>	<p>Biometric passwords, 5G, delivery drones, virtual reality fitting rooms, facial expression recognition & data insights, smart shoes</p>	<p>Self-healing construction materials, driverless cars, holographic screens, robots</p>

Survey Methodology

Who is the Realtime Generation?

The Realtime Generation is a term used to describe the generation, born after 1990, which is highly connected, having had for all of their lifetime use of communication and media technologies such as the Internet, MP3s, and smart devices. William Strauss and Neil Howe coined the term in their book 'Generations: The History of America's Future, 1585 to 2069'. Other terms used to define this generation include Generation Z and Digital Native.

What is the Realtime Generation survey?

Logicalis' Realtime Generation survey seeks to establish the digital footprint of 13-17 years olds, the next generation of workers, and capture their opinions on the digital future of the UK.

The Realtime Generation survey provides a unique insight for universities, employers and Government into how this generation's expectations, concerns and aspirations for its education, prospective careers and consumer demands will influence our economy.



Links

Supporting materials including data tables and previous Realtime Generation reports are available to download from www.uk.logicalis.com/RTG.

Survey Methodology

- Methodology: Online quantitative survey
- Base Size: 1000 UK children aged 13-17
- Fieldwork Period: 7th – 17th January 2016

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