



The Role of Multiple Devices in the Workplace

Qlik Innovation and Design Research Digest, Summer 2015



Welcome

We are pleased to publish the first Innovation and Design Research Digest from Qlik. Four times a year we will share with you some of the formal research from the Innovation and Design team, alongside interviews with industry colleagues and reflections from ourselves and invited guests.

Perhaps we are throwing this research into the wind, but I don't think so. We are learning a lot ourselves, and hope these digests grow into an insightful and useful resource for all our friends in the business of Business Intelligence.

Each season we will review a new talking point; often, our research will start from a simple survey. For Summer 2015, we looked at The Role of Multiple Devices in the Workplace. In this case, Advaiya Solutions questioned over 200 users for us worldwide, uncovering how they use various computing devices in the course of a working day. We include the results in the digest: they inform the trail of conversations and flow of thinking we share here, though the survey represents a starting point rather than our finished piece of work.

Why choose Multiple Devices as our first topic? Simply because at Qlik, we have known for years that users experience our analytic software across diverse form factors. The large-screen monitor in the conference room, the smartphone, the specialized medical tablet, the embedded screen - we see Qlik software running on all of these and more. Yet, looking around the industry, we find very little understanding of how these numerous devices function together in our work. Sure, almost every vendor promotes a smartphone app. Salespeople push the tablet as a perfect Business Intelligence interface. Customers and vendors alike expect to have a mobile strategy. (Significantly, no one asks about a desktop strategy.) Worryingly, few product strategists set out to grasp, never mind to design for, the difficulties or advantages of operating with several devices, even though these days we nearly all do so.

So, we want to circulate some thoughts about how people use a laptop and a smartphone and a tablet and the other technological gadgets you find strewn across the modern office or weighing down the baggage of the business traveller. This use of multiple devices - the mark of so much of our modern working attitude - is the subject of our research.



Multiple Devices in Action

On my desk right now I am writing with a laptop. My smartphone nearby occasionally bothers me with a call. A tablet lies to one side, mostly used for social media while I work. Another older, more homely, tablet rests recharging on the shelf, so I may watch some videos later. I do have a small stack of books flopped on my desk for reference while I write, but there is an e-reader there too. I don't wear a watch (smart or otherwise) but I do have a small health-tracker bracelet which I put on when I take a break to go running. My older smartphone, no longer connected, still serves to play music while I work. In other words, I have seven devices in use, all within reach: some where I can lay my hands on them constantly, some undisturbed for hours.

Of course, I work for a leading software company, so this scatter of gizmos may not surprise anyone. However, a few years ago technology experts may have confidently predicted that one or two multipurpose devices would have swept aside all these. Surely all I need is a smartphone and perhaps a laptop?

Even looking at my own work, it fascinates me how I move between experiences depending on the task at hand. The laptop with its large screen and good keyboard is simply better for writing than the tablet. But is the tablet really better than the smartphone or the laptop for social media? In my personal work-style I find it only more convenient, not necessarily giving a better quality of experience when I am using it. On the other hand, the e-book reader certainly enables a superior reading experience compared to the tablet.

The survey explores a variety of such motivations and scenarios for using different devices. Among those we asked, they strongly preferred certain form-factors for specific aspects of their work: laptops and PCs, for example, clearly stood out as the most popular devices for working with documents, such as I am doing now. While sitting in the conference room, supposedly focussed on the topic in hand, we often - secretly or openly - check our email or messages too: mostly bowing our attention, perhaps a little guiltily, to our smartphones. And we also switch between devices, moving urgently or casually downstream from one to another to complete tasks. For example, we may start perusing a report or dashboard on a tablet, but likely switch to a laptop or PC at some point to continue.



The Personal Perspective

Analyzing survey results such as these can be engrossing (and a lot of fun), but a well-informed viewpoint can highlight our findings with the light of the real world. For this reason, we also include a range of compelling interviews and commentary in the digest.

James Richardson, Business Analytics Strategist with Qlik, shares an engaging interview with Anders Gran, of the usTwo design agency. They cover a lot of ground with intriguing ideas. Anders reminds us of the essential social context of devices, and indeed that not all devices are digital. Scott Humphrey, of Humphrey Strategic Communication, talked with a number of people in the industry and found that they are not all focussed on the desktop or the mobile device - there are more, and much bigger fish, in the sea!

Murray Grigo-McMahon, our Qlik Design Strategist, looks not only at the devices we use, but uniquely considers the rhythm of our work. For him, it's not only the technical capabilities of the devices which influence us, but the "access and immediacy" the experience affords at a human scale.

Keep in touch:

We hope you enjoy this first Research Digest. It is no bigger than it needs to be, but we learned a great deal from this work. We look forward to discussing it with our friends and colleagues within and beyond the Qlik community. We will share more research with you in the coming season. Meanwhile, please feel free to share feedback and your own insights. We cannot promise to answer every email, but we do look forward to hearing from you.

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Multi Device, Multi-Platform Living and Making

A Chat with Anders Gran from USTWO.

We asked Anders Gran from USTWO for his thoughts on multi-screen life. Anders is a head of business in the USTWO Product studio, and spends his time engaging with their clients and projects. As such Anders has been part of USTWO's long history of mobile and digital projects and innovations, including their work for Sony and the award winning game Monument Valley. He's both early adopter and someone who spends his days helping others create and adopt new services and technologies. Much of his day-to-day work is communication, the creative side of which manifests as presentations and storytelling.

Q: How do you experience working across multiple devices and screens?

“I use a laptop for work. I have a smartphone and an iPad mini in-between them. The key for me is that the phone is so accessible. The laptop is for focussed work – creative work, which for me is making Keynote presentations. So three main devices.”

We forget that some important devices aren't digital

“I also use a pen and paper in meetings. I find that I more easily remember things if I do this. Even if I don't look at the notes again. I have a Pencil 53 stylus for my iPad, but I don't use it, it's not working for me – it's not natural enough. I tested it and it seemed good, but it's not subtle enough in practice. Everything you know about how a pen or pencil feels is not there, how you angle the nib for example. But typing, typing is the worst on a tablet, so I go back to pen and paper.”

“If I do write something, I'll take a picture of it and attach it to an email, with the key takeaways in the email text. But I'll still have the source. I'll sometimes even send it to myself as a reminder.”

The task and program of choice drives which devices are used

“When I make a presentation I write the narrative first, usually in Google docs, then I've move to Keynote to develop the slides. 99.9% of all my presentation creation is done on a laptop, but quite commonly I'll email it and present it from my iPad”.

“Skype is more natural on tablet for me. I find it hard to use Skype on a laptop. But often it's because I can use my laptop at the same time, perhaps to take notes.”

“I can't escape emails, and I use all three devices to handle email, with least email activity on the iPad. I'd say I do 80% of my email work on a smartphone. I use the Mailbox app, it's unstable, hardly works with laptop, but the mobile far better.”

No longer being restricted by the device when action is needed

“How I use google docs or google drive is also becoming a bit contextual, that used to be something I did from my desktop only because editing on smartphones used to be basically impossible. But now they have pretty good apps – you can even do spreadsheets on mobile. This means that if I get an email on the train or the bus and I want to update something in a spreadsheet I can take action on it. These days we can get updated information anywhere, for example if a client is dropping a project or wants to scale up I can find that out almost anywhere. I may be on subway, I may just boarding a plane. Five years ago it was really hard to take action on that. Because obviously sat disconnected on a plane you wouldn't have anything to fix it with, but now, actually you and fix it because the tools are getting better.”

Q: Can you talk about some of your experiences with your clients when it comes to designing and deploying for multiple devices and screens?

“We’re being asked about single users on multiple devices a lot when designing retail services for customers. At its basic level it’s we need a laptop/desktop web browser experience, but of course they need an app for devices too. Some are even beginning to think about wearables, but good use cases are still rare outside of alerting.”

“The key thing for us is what people are actually doing, what are their priorities on different types of device. It’s us understanding how we can optimise the experience, which is very different from a dotcom site vs. mobile app. There are behavioural differences, and of course the design will be different. We think about these more as platforms than screens, it’s about the experience. We’re considering the user journey all the time.”

Waiting for behaviours to catch up with the technology

“If you look at commerce the assumption was [back in 2012] multi device interactions from the beginning. For example, someone buying fashion would start the process at work at lunch time browsing on a laptop, perhaps adding to their cart, then then use the mobile app in transit home, refining their selection, and finish using an iPad in ‘couch mode’ for richer browsing. The eventual check out and buy ending the journey. But we didn’t see that for the first 18 months. At first most interactions were not multi device full service journeys. Not for the first two years. That’s now changing a lot. People are now starting to move between different platforms during the same interaction much more freely. But we still see big differences between what they’re doing on the platforms, people tend to view more options on their mobile device – scrolling is easier on a mobile device, while search is not as easy.”

Waiting for industries to catch up with new behaviours

“Personal banking is interesting. The first wave of digitisation was simply allowing people to do basic banking actions. It’s OK at first to copy the bricks-and-mortar activities. Most people just needed to check their balance and make small transactions. Now we’re beyond that. It’s now about doing more than banking actions, for example helping people to budget. With multi-platform interactions context is coming to the fore, meaning you can take action in context of the situation where you couldn’t before.”

“Like commerce though when it comes to banking it may take a few years before people start moving seamlessly between platforms. Some of the banks themselves aren’t really ready for a multi-platform, multi touchpoint environment or one with value adding services. This leaves space for others to develop some interesting apps and services. Here in Sweden there’s a mobile app called Tink, where you give them your banking credentials, and they login to your bank and visualize your balance in a better way, and do forecasting on your spend, budget, things like that. People are only using that on mobile. I don’t think they even invested in another platform,

because people have learned to use banking apps on the go.”

Context influences device choices

“In my experience banks themselves, at least here in Sweden, are still focussed in their internet presence, even though that’s not where the growth is, it’s actually in mobile. I myself, I don’t ever log on to the web banking site I only go to the app. Anything that is not offered in the app I tend to not use. Because I don’t ever sit down with my laptop at home and do stuff, I’m even at the point where I’m thinking of switching bank because of the low standard of the mobile bank [app].”

“With the banks I find that when I use the web banking I’m actually quite pleased, because I can get shit done, because that’s where the bank puts the effort, but the apps don’t help fully, but I’ve learned to compromise, and be happy with 80% of the service offering due to the convenience, and the fact that it doesn’t feel like I’m shutting my everyone out – the context drives my usage. The laptop is a big shield. It’s the format, not the experience.

“We’ve done lot of user journey work in banking. Budgeting, spend review they do on laptop. Check balance, transferring money they do on mobile. There are pretty clear patterns of what people do on different platforms. Context in banking is triggered by external actions, i.e., to transfer money if I’m running out. People don’t want to bank, they have to bank and multi device works within that context.”

Q: How do you see multi device use influencing the way in which we interact?

“When I’m sitting at home on the couch – unless I have to do work, like making a presentation – I don’t ever use my laptop. I don’t casually sit and browse the internet, stuff like that. I do that with an iPad.”

The device impacts the social you; public, private, open, closed

“It feels like you go into your own little bubble when you pull up the screen on a laptop. That’s why an iPad is so nice, it doesn’t shut everyone else off, and it allows people to interact with you still.”

“I think voice recognition is odd because it’s so public – inevitably imposed on those around you. A little like watching video on a mobile device without headphones, which I don’t do; or like talking to an earbud in public on a mobile call and expecting people near to realise. But that could be generational. Kids are watching videos to get information. In fact many of them don’t google stuff, they youtube stuff.”

Generational device use and etiquette

“There’s a maturity in behaviours around living digitally, when we can have any info we want any time. I see younger people being far better than my parents’ generation in handling digital. I know kids get a lot of criticism, because they use mobile phones all the time but actually there’s a good part of them that know when to keep it in their pocket, when to speak with somebody, even though their ‘code of conduct’ with their

friends is quite accepting of using mobiles all the time. If I go to restaurants it's older people that are normally misbehaving with phones, in that they're noisy all the time, they're on the table, it's ringing. Because they're not fluent in the medium, or they think that's how it's used, or they accept the default setting of the phones."

"Device themselves are rude. We may see a culture change about how we prioritize information. With the Internet-of-Things brings context to the fore. When I walk through the door at home my device should change how it operates, my priority list should change. Right now alerts are very blunt, all alerts have the same level and I need to filter it. Too many alerts make me blind."

The shift from technology to activity

"When we do deep interviews we realise that pre-millennials may sometimes still resist technology. Millennials don't resist tech, they take it for granted and learn to live with it."

James Richardson, Business Analytics Strategist, Qlik

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About USTWO

USTWO is a global digital product studio with studios in London, Malmö, New York and Sydney. The company does client service work, launches its own products and invests in joint venture partnerships. Well known USTWO clients include Google, Barclays, Sony, Spotify, HTC, ebay, American Express, Toyota and Qlik. Well known USTWO developed apps include Monument Valley, the critically acclaimed mobile device game. USTWO worked with Qlik during the early development of Qlik Sense and have continued to help us explore new ideas on how people can work with analytics.

Smartphones to ‘ Tablets on the Wall ’

“Scott Humphrey, of Humphrey Strategic Communications, talked about our research with some industry leaders and compared their own experiences with multiple devices.”

There is an ongoing debate whether smartphones and tablets will replace laptops and desktops as the devices of choice in the coming years. In December 2014, market research firm Gartner predicted that by 2018, more than half of all users will use a tablet or smartphone first -- instead of a laptop or desktop -- for all online activities.¹

Qlik’s Innovation & Design team recently conducted a study to determine the usage patterns and behavior of business users when it comes to how they use multiple screens on multiple devices. Through this survey, data was collected from business professionals from across the globe possessing multiple devices: Laptop/PC, smartphone, tablet and other personal devices. The results clearly show that business users not only spend a lot of time in front of a screen, they are more equally using each of the devices.

The research also shows how business users choose to work with their increasingly multi-faceted use of digital devices. Clear is the need for solution providers to build and adopt cross device software and applications to ensure a consistent experience across all screens to keep the experience of doing so as fluid and consistent as possible



The Greenhouse Experience

Akshay Chopra knows a thing or two about collaboration and the use of multiple technologies and platforms to solve business problems. As Southeast Asia Leader of the Deloitte Greenhouse in Singapore and Associate Director of the Deloitte Analytics Institute, Chopra helps executive teams strategize, innovate, learn and overcome business challenges. Immersive day-long sessions combine expert facilitation, design thinking and analytics in a consciously-designed environment to accelerate breakthroughs. Greenhouse experiences include Analytics Labs, Executive Transition Labs, Innovation Labs, Relationship Labs, Strategic Risk Labs and Sustainability Labs.

There are 35 Greenhouse Centers worldwide, with 18 scheduled to be open in the US by May, 2016. “We spend a great deal of time researching what technologies and form factors are best to interact with our clients most effectively,” Chopra said.

“Simple emails and correspondence are a better option for smartphones, but despite all of the advances in technology, you can simply never get the kind of speed and flexibility with a tablet or smartphone than you can with a laptop or PC when you are working on documents, presentations or spreadsheets. Creating content favors desktop machines with bigger displays and more processing power.”

“The study reflects my personal behavior in many aspects.”

Chopra added, “That being said, the current generation grew up using PCs and laptops with a keyboard and mouse. That is the environment we operate the fastest in and are the most productive. But the generation that is growing up right now is already well-versed in tablets and touchscreens and is most comfortable in that environment. PCs and laptops might be relegated to secondary status among them at some point.”



Touching is Believing

While Chopra supports the findings of the Qlik research and sees the advances made by smartphones and tablets, he also believes not all key advances will come in smaller form factors. When it comes to using analytic solutions and helping clients “experience” analytics in team settings, Deloitte sets up giant touchscreens for engagements so clients can “literally touch and interact with the data that affects their business,” Chopra said.

What does a Data Warehousing Pioneer Think?

Dr. Barry Devlin is a founder of the data warehousing industry, defining its first architecture in 1985. A foremost authority on business intelligence (BI), big data and beyond, he is respected worldwide as a visionary and thought-leader in the evolving industry. Devin has authored two ground-breaking books: the classic “Data Warehouse—from Architecture to Implementation” and “Business unIntelligence—Insight and Innovation Beyond Analytics and Big Data” in 2013.

What stood out in the survey findings to Devlin is the relatively low usage time of tablets and the continuing importance of, and preference for PCs and laptops in the office and home for reports and dashboards. “Not surprising to me, given my ‘seniority’, but an interesting contrast to the focus that BI vendors continue to put on smartphone and tablet enablement,” Devlin said. “My view has long been that usage of these devices--especially smartphones--should focus on alerts and similar high-speed and urgent messaging, although business trip usage for documents is almost equal for all device types.”

Devlin added, “Today’s ‘attention deficit disorder’ of business people in meetings and presentations is emphasized by the 60 percent of respondents who prefer/use smartphones to respond to e-mails.”

“When you are painting the data and visualizations using your fingers, the heads-up, tactile element can’t be replicated. We want the client to physically be involved as opposed to setting up a projector and show slides and a demo Touchscreens are the way to go for analytics.”



The Tablet on the Wall

Founded in 1971 with technology tracing back to Oak Ridge National Laboratory, Elo Touch Solutions pioneered touchscreen technology, helping to create an entire industry based on touch as a simplified interface between computers and people. Elo touchscreens are available in a wide variety of product families, sizes, shapes, and surface treatments to accommodate virtually any application and environment.

If you have been in a Lowe's Home Improvement Store, the in-house digital experience is based on Elo Touch technology. Same goes for Walgreen's, or when you check in with your favorite airline at the airport, chances are Elo Touch is behind the customer experience. "We are driven to provide interactive experiences in a number of vertical sectors, with the most visible being the retail and transportation industries," Pendse said.

Elo Touch is researching the use of multiple devices to better connect the online experience with what people watch on television with what they experience in the store.

"The survey results are intuitive when you think about them, but establishing them as 'fact' is cool," Pendse, said. "I find it interesting that tablets seem to rate number three or very close to smartphones on most categories. Solution providers should take note and focus on the smartphone user experience.

"I believe we are soon going to see a shift from devices that are personal that do multiple things to more purpose-built devices such as energy management systems for your home and on-location purpose-built displays that are more context sensitive," Pendse said.

Scott Humphrey, Humphrey Strategic Communications

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¹Gartner, Inc., December 2014, "Predicts 2015: Mobile and Wireless,"

“How can we connect those experiences so they are the most familiar and cohesive? Collaboration happens best when you are looking up, not down.”



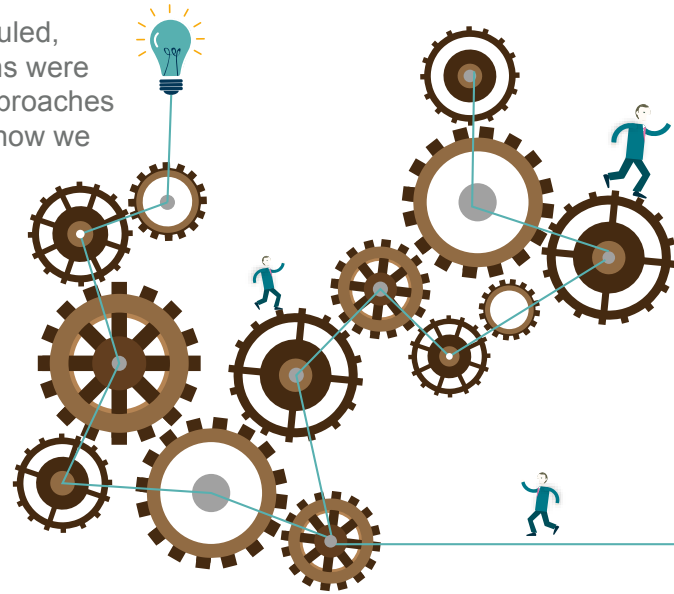
The Changing Rhythms of Work

Ubiquitous unscheduled access and activity is the future of work, and our tools and systems must fit into this world if they are to remain relevant. In this piece I ask; how does the way in which we use our devices and screens change us, and what new rhythms will emerge in how we read, react and work with information?



Working like clockwork

The modern industrialised world was built on scheduled, organised, quantifiable blocks of time. The Victorians were the masters of scheduling and the practices and approaches they built up have been the foundation for much of how we work today. From stating this is when the train arrives through to this is when you start and finish work, much of our activities have been defined by schedules. Time is certainty, something we can depend on, we set a place and time and agree to converge upon it. Everything in synchronization, to schedule, a guarantee that the stars will align to successfully achieve our goals. The machine and the organisation's 'clockwork' performance defined efficiency. When things went out of sync and the schedule slipped, our productivity collapsed. Often the need for immediacy and instant answers ran contrary to this regimentally scheduled model.



The organisational principle of time was essential to how we worked, as much of the work we did required us to be in a specific place and use a specific tool or machine. It was the factory model, centralised and uniform. And when it came to information workers this approach continued. The physicality of the tools we used defined the place, from the libraries, record rooms and clerk's archives through the mainframes and terminals. Historically, even if the information collection was out in the field made by the roaming operative, the information retrieval and analysis was safely behind closed doors. Trapped by location. We had to request access and physically visit the information. Even when we started talking about "surfing the information superhighway" in the early 90s, we still had to get on it at fixed access points.

This external, location based view is still the way we name and talk about the devices and tools we use to access information; the data centre, the desktop, the laptop, the handheld device. Location has always been tethered to the user, rather than the broader spatial or geolocation. It wasn't until Bruce Sterling started talking about 'spimes' or artefacts located in space and time (at SIGGRAPH back in 2004) that we really started to see the potential. That's when we began to think about the web of information around us and being part of it. This helped us see how the nature of information was changing. We started to shake off the schedule's shackles, we started to demand things when we wanted them. We started to reach out and grab what we needed.

“ Information was now free to travel as long as we didn't move, as long as we stayed tethered to our phone line and screen. Thus we scheduled tasks and reports, waited, worked and went home. The datascape was somewhere we visited, not somewhere we inhabited.”

Access and immediacy

The mass availability of smart phones and the rise of the networked, connected world has change our relationship to the schedule. Where once we looked at it as the thing that delivered, that guaranteed access and availability, it's now often the thing that holds us back. Often it's seen as the thing delaying us from operating at our most productive. Waiting for a report to arrive or a meeting to happen before a decision can be taken can break our flow or even lose or confuse the context of the issue at hand. I can connect things in ways that were never before possible simply by having access to the data in these new open-ended contexts. Time, place and immediacy change they way I use and utilise information. The elaborate and artificial constraints that the schedule requires to keep things ticking along at a predictable rhythm, change when I don't have to wait. I can maintain flow and continue my train of thought. This is a massive shift in how we work with information. Removing this enforced delay changes our relationship to information.

“ Today my devices, help me to live in the data. Now I pull the information I need directly to me whenever I need it, no matter where I am.”

You only have to look at how children experience media to see how this changes people's behaviour. If they want to watch something, they simply find it and watch it - the TV guide is dead, as everything is there for immediate consumption. It takes something very special to force a 'scheduled viewing', that is, a viewing in accordance to someone else's schedule. It also means that the 'see it now or miss out' impetus is gone. Things can be picked up, put down, interrupted and consumed in fragments. It's just as much about the ability to pause and postpone as it is about immediacy. It's my schedule, one to which I adhere to or disregard at will.

Even the way people meet and socialise is in many cases schedule free. Especially with the young, a close friend observed how his children don't arrange things with friends in the same we he did as a child. There's no more prior agreement to "meet at the park at 4pm", it's more a case of simply reaching out or broadcasting availability to see who's in, near or available now. It's continuous flow rather than predefined blocks, "see you in 10 mins" instead of "see you at 4pm". This behavioural change is thanks to the connected device. As it's always to hand we are always inside the information space rather than outside waiting for an opportunity to look in. Our devices and the way they connect us and position us inside the information space changing our behaviours both at work and at play.

For many of us, this new access and connectedness impacts us more than we realise. The activities for using and understanding information (often the primary activity at work) no longer need to be scheduled and isolated. We are changing how we process information and in turn that changes us. As Kevin Kelly pointed out when referencing Psychologists Ostrosky-Solis, Garcia and Perez;

"the acquisition of reading and writing skills has changed the brain organization of cognitive activity in general is not only in language but also in visual perception, logical reasoning, remembering strategies, and formal operational thinking." (1)

Kelly believes that the internet and digital media is impacting us in a similar way to literacy skills. That the practice and emerging literacy of 'reading the web' is transformative.

How we interact and experience information changes us. Through the immediacy and connectedness of information today we are transforming our behaviours and ourselves, yet again. We are changed by the activity, whether that's:

- **Glimpsing** – Those “micromoments”(2), that reflexive interaction with the device, be that checking the time, viewing an instant message, seeing when the next bus will arrive, or if that payment has been received. These are the fleeting activities that don't have to interrupt the current focus. Activities that suit a discreet and personal device, such as a smart watch.
- **Snacking** – The bite sized consumption of media and information. Where our ever accessible smart phone comes in to it's own. It's not just those 'stolen' few minutes; Googling the actor whilst watching a film, replying to that email on the bus, 5 minutes of your favourite game between meetings and even the perusal of Facebook updates during someone else's presentation. It's also the quick task, the cheat sheet and refresher before the customer meeting, that bite of nourishing information that helps inform what's at hand. These can be isolated or a staccato of varied often disconnected activities, the continued switching of attention from screen to surroundings.
- **Chunking** – That traditional behavior of self scheduled activity, where you set aside X amount of time to do something. From the 30 minutes to deal with email to the couple of hours to complete that report. These are more like the work blocks we are used to, where we sit in front of our devices and try our best to focus, knowing we are likely to be interrupted. This where we often end up indulging in many of the other behaviours, whether as self distraction, interruption or to assist the current task.
- **Immersing** – The focus and total engagement in something. When you're held by a great story, locked into a game, or deep in a flow state as you create, learn or solve something. It's when the barrier with the device seems to have dissolved and you lose track of your current surroundings – totally absorbed in the activity.
- **Connecting** – This is more like Kelly's 'reading of the web'. It's that fragmented hopping around, the weaving together of different ideas and disparate sources. Where you cross over from work to play, but are continuously adding to the broader context of what you are doing. It's when we carry over traces from one piece of information to another, from one device to another.

We are now all analysts and 'footnote' chasers, checking, cross referencing and validating the information we receive. More over, when we answer email from the bus, view real-time travel information, check the latest sales figures or 'just Google it'

we pull this information and activity in new contexts, into our current flow. The enforced scheduled hour to do X has vanished and it's now something we chose to focus on or interrupt at will.

New rhythms

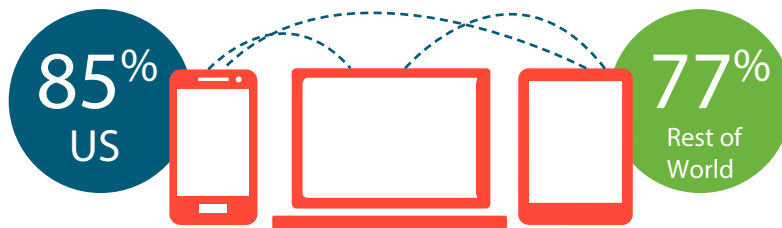
As our behaviours change, so do the rhythms to which we work. Having multiple devices and access enables us to interact and experience information in ways that fit who we are and how we need to work. You can see this in the responses in our survey, with the prevalence of spontaneous use across differing devices for both discreet tasks and continuing task the same task. This is accompanied by the belief that this activity “improves their productivity”. They can continue at will on another device, no need to postpone it until the next visit to the initial one. Or whilst doing one thing they can use another device for an interim task, something short.

“ The quantifiable victorian blocks of work time are now readily to sliced up and rearranged, in new ever changing ways, ways that fit better with a more complex and uncertain environment.”



63% of USA based respondents believe that use of multiple screens “improves their productivity”, while 53% of respondents from the rest of the world believe that it “keeps them up-to-date”.

The smartphone is the preferred for device for ‘interim’ activities. It’s always close to hand, it’s our primary access point. This happens at work and at home. For many of us this is our primary screen, the laptop, TV or meeting screen is the secondary slower moving rhythm in the background. It’s this personal, to hand screen that creates a faster, more engaged and intimate rhythm. It’s also this that helps fragment and break down the clearly defined work time vs. play time. I’m always connected, always thinking. It’s not a simple case of work, life balance any more. Our behaviours are crossing back and forth between the two. Being always connected with multiple screens at home and at work fuel the behaviours that I use both at work and at play. I analyse data for work and for my health, the tools aren’t that different and the devices are often the same. If anything we often have more devices and screens in our



85% respondents from the USA and 77% respondents from the rest of the world complete their objectives by using multiple devices spontaneously.

personal life than at work. These activities and behaviours are the same. The interim checking, the snacking on content, the focused period, the glimpsing (with the new smaller devices like watches). This is behavioural and reflects how we inhabit the information space, where we are located, connected, and continuously reaching out and exploring the information around us.

With these changing rhythms, we must make a conscious effort to carve out those longer focussed periods because often the tools needed for 'serious work' are often still fixed to one device. There is a new wave of devices targeted at weening us off our compulsive smartphone use. Attempting to give us the awareness we need of our information space without being constantly pulled to the device, a much calmer relationship. This is creating another layer of rhythms to incorporate into our



behaviours. A shift away from reaching for the smartphone to glimpsing the watch or feeling haptic feedback. Where ambient information is always there hinting about the information space around us. The range of devices and screens we have to hand will change and adapt as our behaviours influence them. We want to be able to achieve our goals, complete tasks and experience our data anywhere and at any time we want to. That's the promise of the unscheduled world.

Of course we aren't free to do everything everywhere, not yet anyway. We are still limited by the way services and tools have been designed. How the interaction paradigm or technical solution suits device X better than device Y. But as we continue to embrace connectedness and ubiquitous computing, these things that hold us back today will disappear. We are beginning to see that with the birth of the truly smart assistants from Apple, Google, and Amazon, and the rapid growth in artificial intelligence. This shift from simple search and retrieval agents to the creation of platforms that support interaction in new ways means the device will no longer limit what can be achieved. What may have started with the device is now becoming a behavioural norm. Devices change behaviours; behaviours drive our relationship with information and technology, which helps us to create new devices and exciting new ways to work with and experience information.

Murray Grigo-McMahon, Design Strategist, Qlik

murray.grigo-mcmahon@qlik.com

(1) Kevin Kelly, The 2-Billion-Eyed Intermedia

<http://kk.org/thetechnium/the-2-billion-e/>

(2) Sridhar Ramaswamy, How Micro-Moments Are Changing the Rules

<https://www.thinkwithgoogle.com/articles/how-micromoments-are-changing-rules.html>





The Role of Multiple Devices in the Workplace

Summer 2015





Introduction

On behalf of Qlik's Innovation & Design team, Advaiya conducted research to determine the usage patterns and behavior of business users when it comes to how they use multiple screens on multiple devices. To carry on this research, the IAD team and Advaiya prepared a survey to identify the behavioral aspects under which multiple devices are used by business users. Through this survey, data was collected from a cohort comprising business professionals from across the globe, possessing multiple devices: Laptop/PC, smartphone, tablet and other personal device. This report provides the details of this research, with key outcomes of the survey. It helps understand the behavior of business users when using multiple devices under different scenarios.



Executive Summary

Business users spend a lot of time in front of a screens – Laptop/PC, Smartphone, Tablet and other personal device. This report highlights the key habits and usage patterns of business users while performing their day to day activities across multiple screens.

For business users, the choice of device when performing different activities is driven by their context, primarily location, activity to be performed and accessibility of the device.

Business users believe that use of multiple devices makes them more productive and keeps them up-to-date by providing more choice about how and when they perform activities.

Rapid adoption of digital devices is driving task convergence as business users use several screens to perform the same activity. Interestingly however, convergence has not led to cannibalization amongst devices. Instead, users' find that each screen has varying benefits. Together they enhance the user experience which makes them suitable under different scenarios.



Research Objectives and Methodology

The trend to having multiple internet-connected devices is increasing the norm. According to the statistics provided by Statista, the average number of connected devices used per person in USA was 2.9. Business users commonly carry and use multiple devices to perform routine activities like handling emails or making conference calls. Often these devices are owned by the individual rather than the company they work for.

Many organizations have realized that this habit of their employees must be accounted for in their systems, and seek to take advantage of this trend to improve their employee productivity and business efficiency. To do so effectively, it is important for them to understand common usage patterns of multiple devices and user-behavior when performing different activities using those devices.

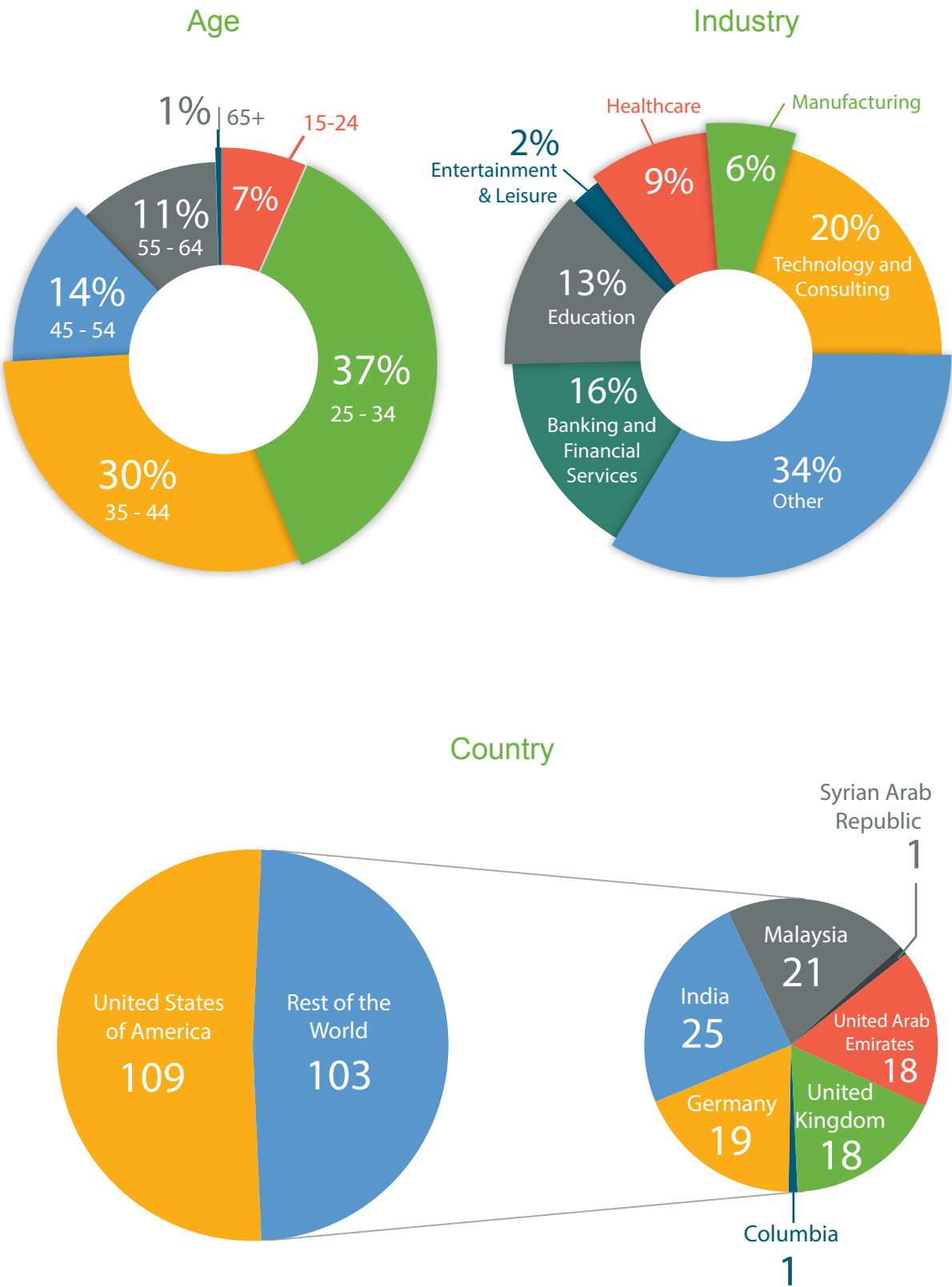
The key objective of this report is to identify and analyze aspects under which multiple devices are used by business users.

Methodology:

Qlik surveyed business professional across the globe. The survey was conducted online, and respondents were recruited via an email invitation containing an embedded link to the survey. The email invitation was sent to qualified business professionals who owned at least laptop/PC, smartphone and a tablet.

Description of the population

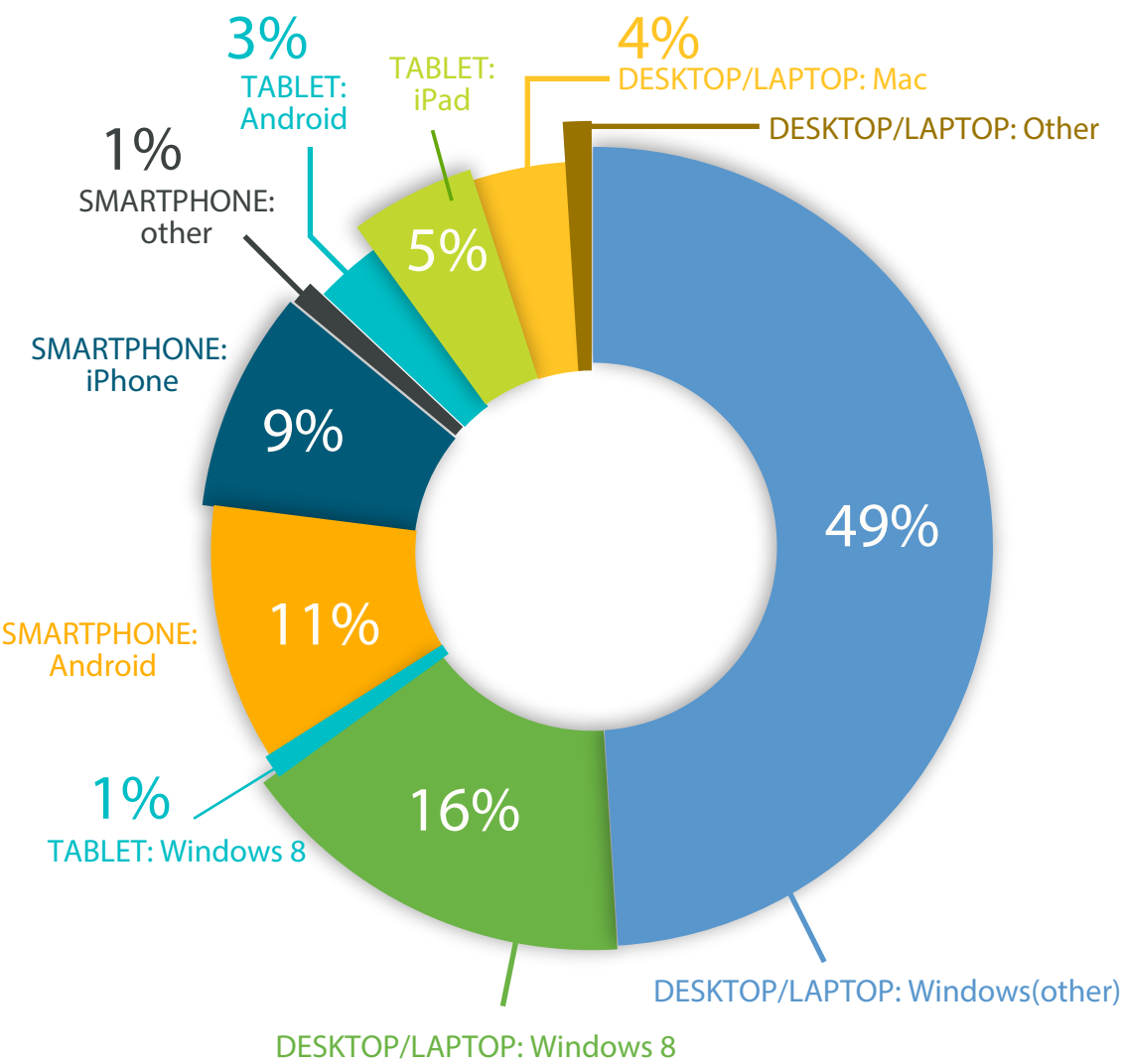
The total 212 survey respondents can be described as:



Total number of respondents = 212

Devices used to respond to the survey

To complete the survey, responders used variety of devices, which in itself highlights the trend towards using a variety of devices to carry out activities.



Total number of respondents = 212

Experience on Laptop / PC

Searching for information, working on documents and performing other common tasks on a Laptop/PC is often done from a variety of locations including home, office, while travelling or while commuting .



Globally, **52%** of respondents spend on an average more than 6 hours using a Laptop/PC per day

Most common activities performed using Laptop/PC



At Home

92% do email communication

85% search and browse the web

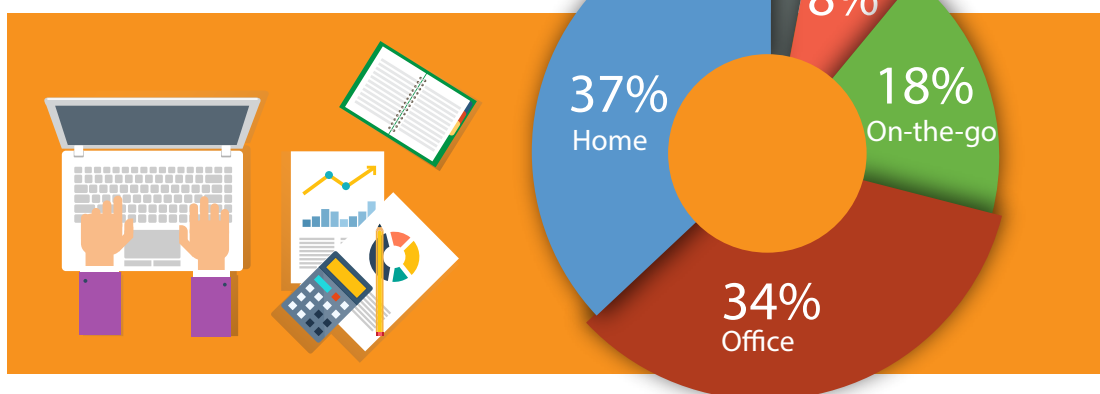


At Office

82% work on documents

79% view reports or dashboards

Laptop/PC usage for Business Activities



Top motivations behind use of Laptop/PC

60%

Multiple windows and multitasking

59%

More screen real estate

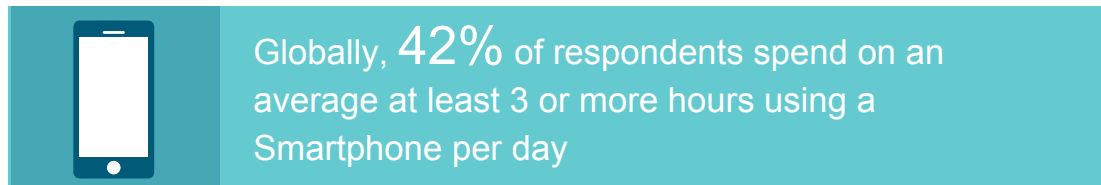
55%

Writing, editing and uploading or downloading files

Total number of respondents = 212

Experience on Smartphone

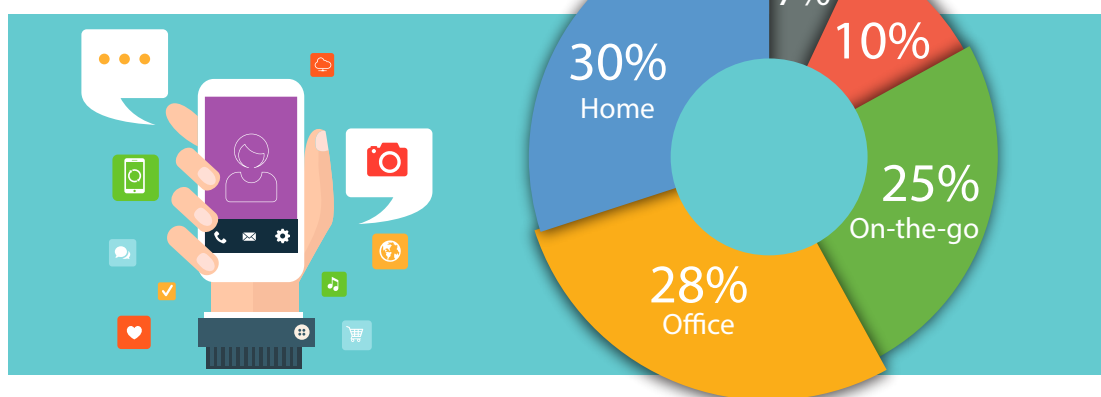
Searching for information, working on documents, and performing other common tasks on a Smartphone is done from a variety of locations including home, office, while travelling or commuting daily.



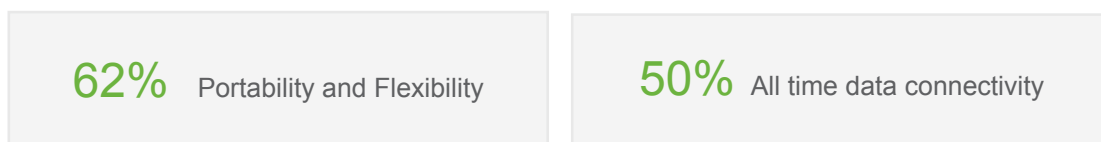
Most common activities performed using Smartphone (excluding phone call and SMS messaging)



Smartphone usage for Business Activities



Top motivations behind use of Smartphone



Total number of respondents = 212

Experience on Tablet

Searching for information, working on documents, and performing other common tasks on a Tablet is done from a variety of locations including home, office, while travelling or while commuting daily.



Globally, **44%** of respondents spend on an average at least 1 or more hours on Tablet per day

Most common activities performed using Tablet



At Home

79% do email communication

68% search and browse the web



At Office

50% do email communication

47% do instant messaging

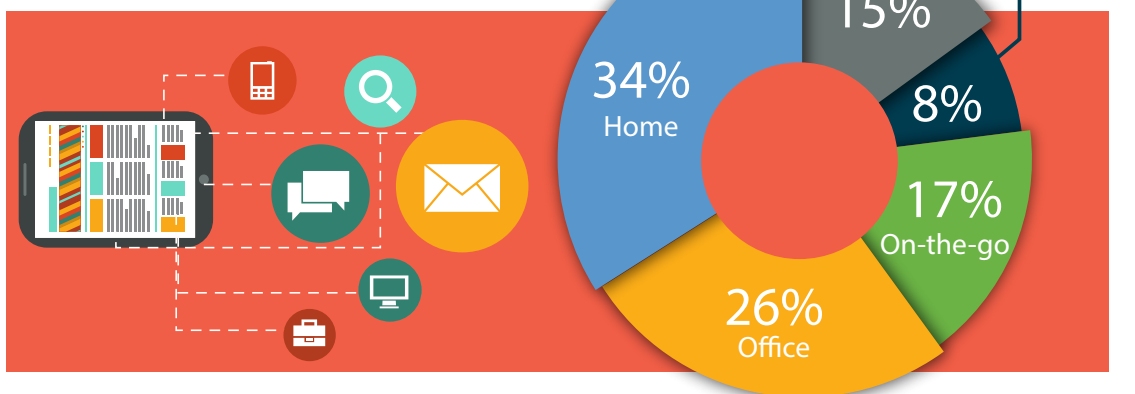


On the go

39% search and browse the web

47% do navigation

Tablet usage for Business Activities



Top motivations behind use of Tablet

55% Portability

36% Wide choice of applications

Total number of respondents = 212

Experience on Smartwatch or any other personal device

WEARABLE TECH

Only 9% of respondents use additional devices like Smart Watches while performing many activities in their daily routine

Devices used



Samsung Gear (11)



Apple iWatch (8)



Google Glass (1)

In all, **two thirds** of respondents who use an additional device spend on an average at least **40 minutes or more** doing so.

Major activities performed using other personal devices



- Web browsing
- Text messaging

Top motivations behind use of other personal devices

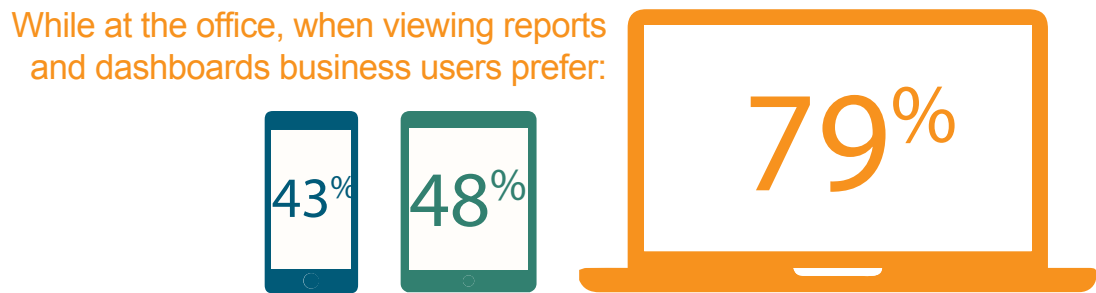
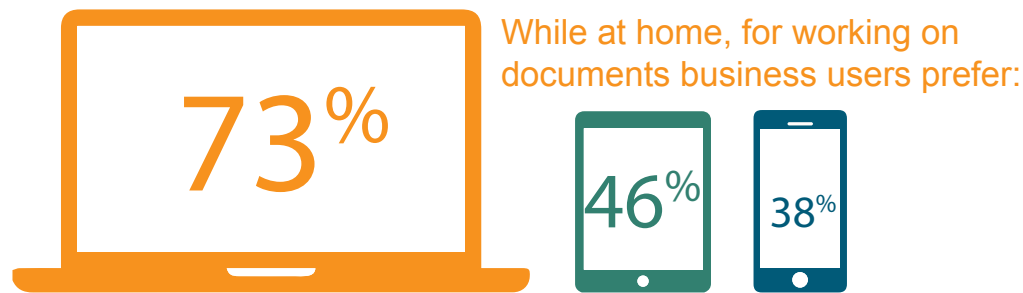
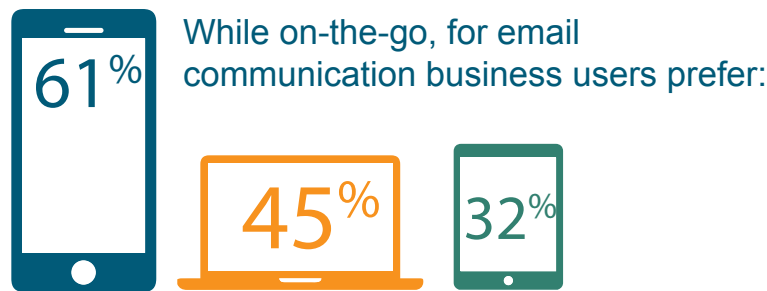


- Quick notifications
- Integration with other devices

Total number of respondents = 212, Total number of respondents using other personal devices=20

Business specific usage scenarios

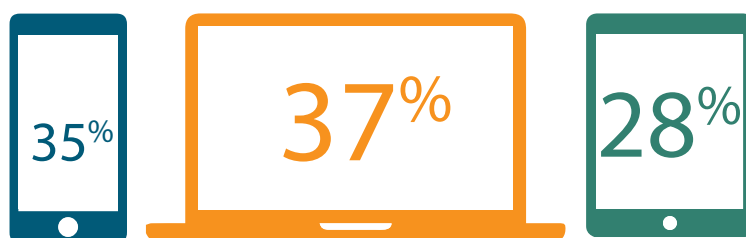
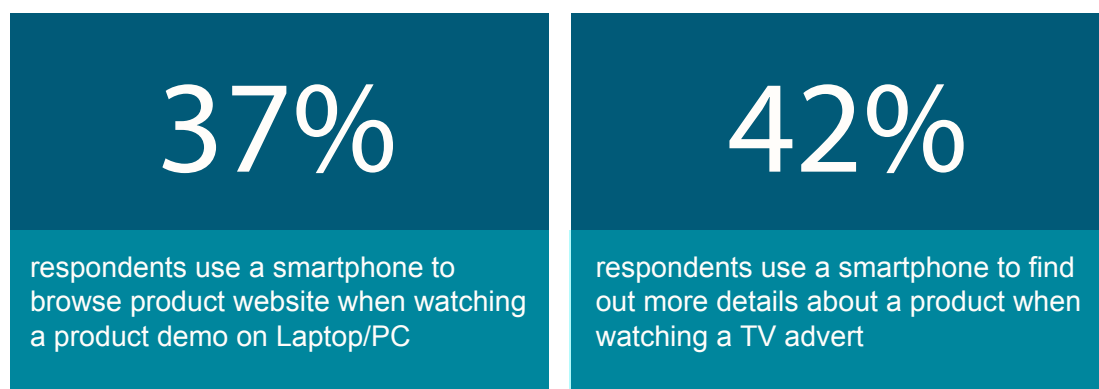
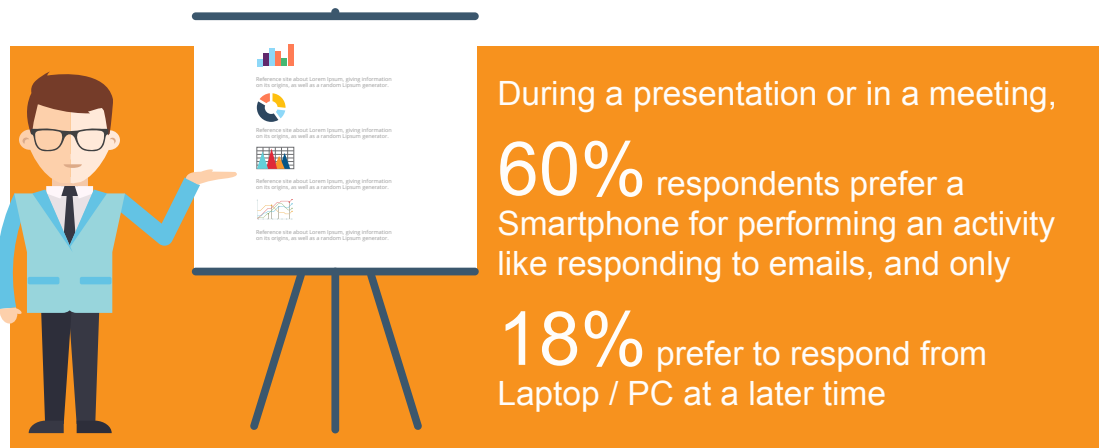
Business users' likelihood to use a device type for common activities depends on their location and the availability of device.



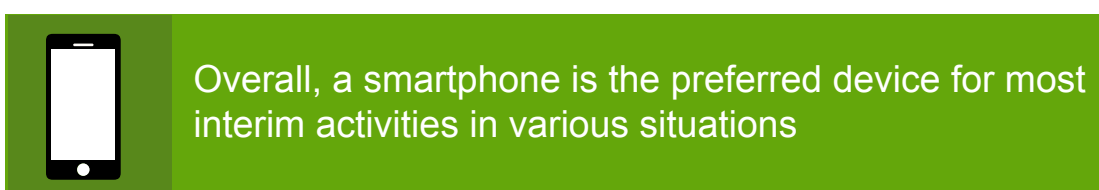
Total number of respondents = 212

Usage scenarios for multiple devices

There are situations when business users are in middle of a task when they need to use a device to perform any additional interim activity. These scenarios reflect the choice of the device used and preferred by the respondents for doing multiple activities.



When performing tasks like accessing business documents or checking important reports during a business trip, business users have almost equal preferences for using a **Laptop/PC (37%)** and a **Smartphone (35%)**, while preferences were slightly lower for **Tablets (28%)**.



Total number of respondents = 212

Device Switching

Laptop /PC


















- Business users prefer to use Laptops/PCs to start and continue complex activities like working on documents (75%) and managing a schedule or calendar (56%).
- Business users prefer to switch over to smartphones or tablets for common activities like email (38%) and social networking (44%).

Total number of respondents for email communication= 209, Instant messaging = 208, Conference (audio/video) = 206, Social networking = 206, Searching and browsing the web = 205, Finding Information = 206, Planning a trip = 204, Managing schedule/ calendar = 205, Watching videos = 205, Viewing reports or dashboards = 204, Accessing enterprise apps or information = 204, Working on documents = 204

Table 1 shows information about activities started on Laptop/PC and then continued on either the same or different device. The corresponding number indicates the percentage of respondents who continued the activity on the respective device. The highlighted rows indicate the activities for which a common switch between devices has been observed.

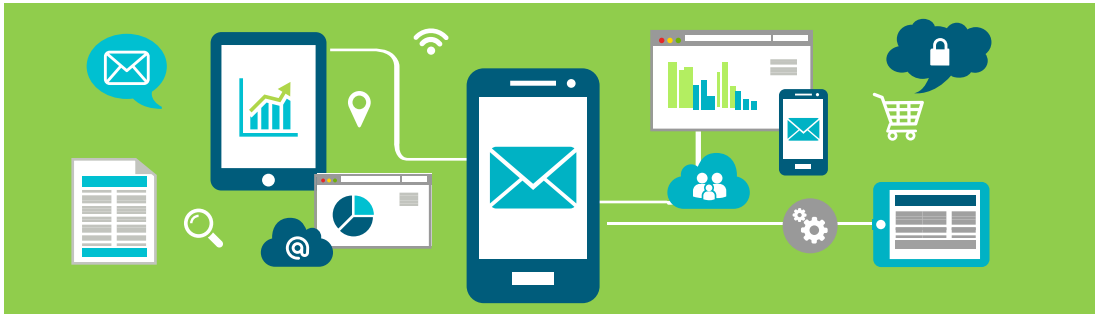
Table 1. Number of respondents (relative %) switching from Laptop/PC to different devices when performing an activity

Activity started on Laptop/PC		Continued on...		
				
	Email communication	44%	38%	15%
	Instant messaging	35%	45%	17%
	Conference (audio/video)	49%	28%	16%
	Searching and browsing the web	36%	44%	18%
	Social networking	40%	30%	25%
	Finding information	45%	35%	17%
	Planning a trip	54%	16%	25%
	Managing schedule/ calendar	48%	31%	17%
	Watching videos	44%	21%	31%
	Viewing reports or dashboards	55%	19%	21%
	Accessing enterprise apps or information	55%	20%	22%
	Working on documents	61%	11%	22%

Total number of respondents for email communication= 209, Instant messaging = 208, Conference (audio/video) = 206, Social networking = 206, Searching and browsing the web = 205, Finding Information = 206, Planning a trip = 204, Managing schedule/ calendar = 205, Watching videos = 205, Viewing reports or dashboards = 204, Accessing enterprise apps or information = 204, Working on documents = 204

Device Switching

Smartphone


















- Business users prefer to continue on smartphones when working on common activities like instant messaging (68%) and managing a schedule or calendar (57%).
- Business users switch from smartphones to laptop/PC for tasks like working on documents (60%), email communication (52%) and viewing reports or dashboards (52%).

Total number of respondents for email communication= 209, Instant messaging = 208, Conference (audio/video) = 206, Social networking = 206, Searching and browsing the web = 205, Finding Information = 206, Planning a trip = 204, Managing schedule/ calendar = 205, Watching videos = 205, Viewing reports or dashboards = 204, Accessing enterprise apps or information = 204, Working on documents = 204

Table 2 shows information about activities started on a Smartphone and continued on either the same or different device. The corresponding number indicates the percentage of respondents who continued the activity on the respective device. The highlighted rows indicate the activities for which a common switch between devices has been observed.

Table 2. Number of respondents (relative %) switching from Smartphone to different devices when performing an activity

Activity started on Smartphone		Continued on...		
				
	Email communication	52%	24%	24%
	Instant messaging	11%	68%	16%
	Conference (audio/video)	31%	40%	19%
	Searching and browsing the web	29%	41%	21%
	Social networking	48%	30%	20%
	Finding information	49%	25%	20%
	Planning a trip	48%	30%	15%
	Managing schedule/ calendar	20%	49%	26%
	Watching videos	36%	32%	27%
	Viewing reports or dashboards	52%	28%	0%
	Accessing enterprise apps or information	17%	46%	21%
	Working on documents	56%	28%	17%

Total number of respondents for email communication= 209, Instant messaging = 208, Conference (audio/video) = 206, Social networking = 206, Searching and browsing the web = 205, Finding Information = 206, Planning a trip = 204, Managing schedule/ calendar = 205, Watching videos = 205, Viewing reports or dashboards = 204, Accessing enterprise apps or information = 204, Working on documents = 204

Device Switching

Tablets


















- Business users prefer to continue on tablets when working on activities like watching videos (34%), planning a trip (30%) or conferencing (30%).
- Business users switch from tablets to either laptop/PC or smartphones for tasks like working on documents (79%) and viewing reports or dashboards (55%).

Total number of respondents for email communication= 209, Instant messaging = 208, Conference (audio/video) = 206, Social networking = 206, Searching and browsing the web = 205, Finding Information = 206, Planning a trip = 204, Managing schedule/ calendar = 205, Watching videos = 205, Viewing reports or dashboards = 204, Accessing enterprise apps or information = 204, Working on documents = 204

Table 3 shows information about activities started on a Tablet and continued on either the same or different device. The corresponding number indicates the percentage of respondents who continued the activity on the respective device. The highlighted rows indicates the activities for a common major switch between devices has been observed.

Table 3. Number of respondents (relative %) switching from Tablet to different devices when performing an activity

Activity started on Tablet		Continued on...		
				
	Email communication	50%	17%	17%
	Instant messaging	18%	45%	27%
	Conference (audio/video)	47%	20%	30%
	Searching and browsing the web	40%	20%	25%
	Social networking	38%	31%	21%
	Finding information	41%	22%	26%
	Planning a trip	40%	20%	30%
	Managing schedule/ calendar	29%	36%	25%
	Watching videos	22%	28%	34%
	Viewing reports or dashboards	55%	17%	24%
	Accessing enterprise apps or information	27%	38%	27%
	Working on documents	60%	16%	16%

Total number of respondents for email communication= 209, Instant messaging = 208, Conference (audio/video) = 206, Social networking = 206, Searching and browsing the web = 205, Finding Information = 206, Planning a trip = 204, Managing schedule/ calendar = 205, Watching videos = 205, Viewing reports or dashboards = 204, Accessing enterprise apps or information = 204, Working on documents = 204

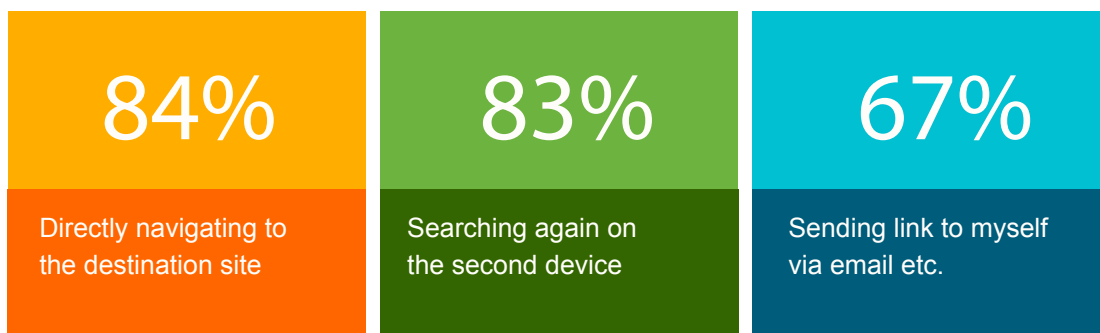
Device Switching

Additional Findings for Experience across Devices



When switching between devices, respondents from the USA mostly prefer to **search again on a second device** where respondents from the rest of the world prefer to **directly navigate to the website**.

Top three ways to continue the same activity on different device



Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

Additional Findings for Experience across Devices

Two key modes of devices usage



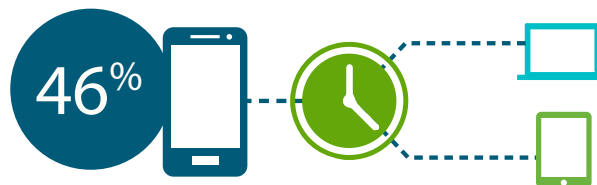
Sequential

Using multiple devices one after another for performing an activity



Simultaneous

Using multiple devices at the same time for performing an activity



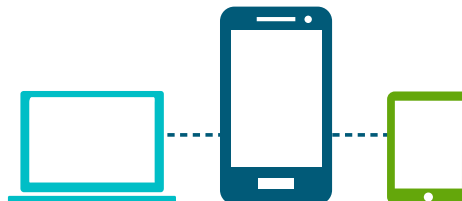
- In all, **46%** respondents start an activity on one device and continue on a different device **within an hour or so**.



- **31%** respondents from the USA and **39%** from the rest of the world says that they start an activity on one device and **immediately** continue on a different device.



- **Sequential** usage of devices is more preferred over simultaneous usage.



- **Smartphones** are the device type mostly used in conjunction with another device type.

Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

Additional Findings for Experience across Devices

Two ways of using devices



Planned

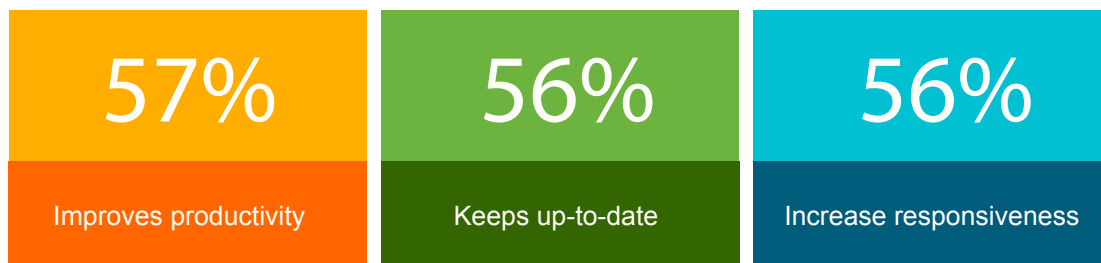
Using multiple devices to perform an activity in a pre-defined way



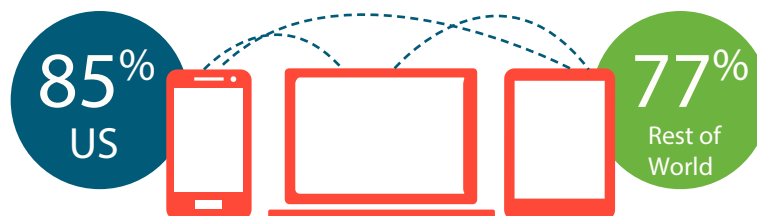
Spontaneous

Using multiple devices to perform an activity spontaneously, without making any pre-defined plan for the same

Top reasons for using multiple devices in daily routines



- 63% of USA based respondents believe that use of multiple screens “improves their productivity”, while 53% of respondents from the rest of the world believe that it “keeps them up-to-date”.



- 85% respondents from the USA and 77% respondents from the rest of the world complete their objectives by using multiple devices spontaneously.

Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

Conclusion

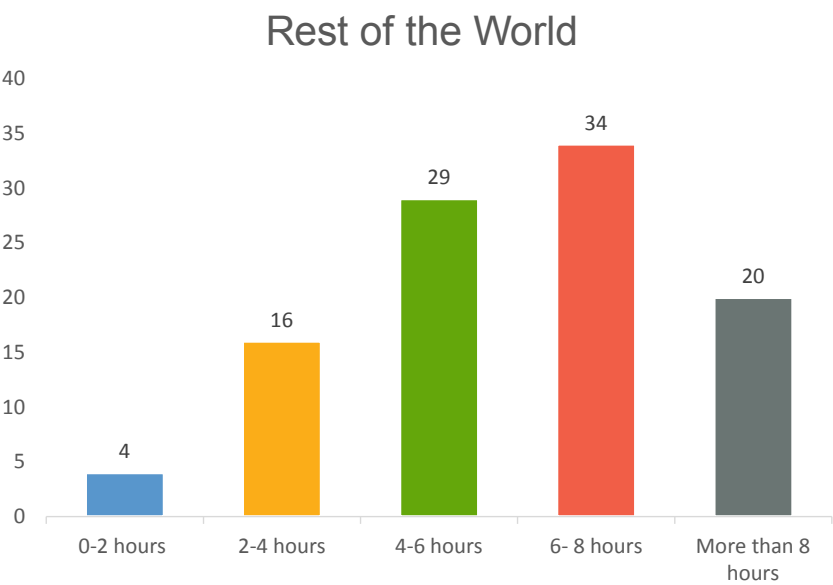
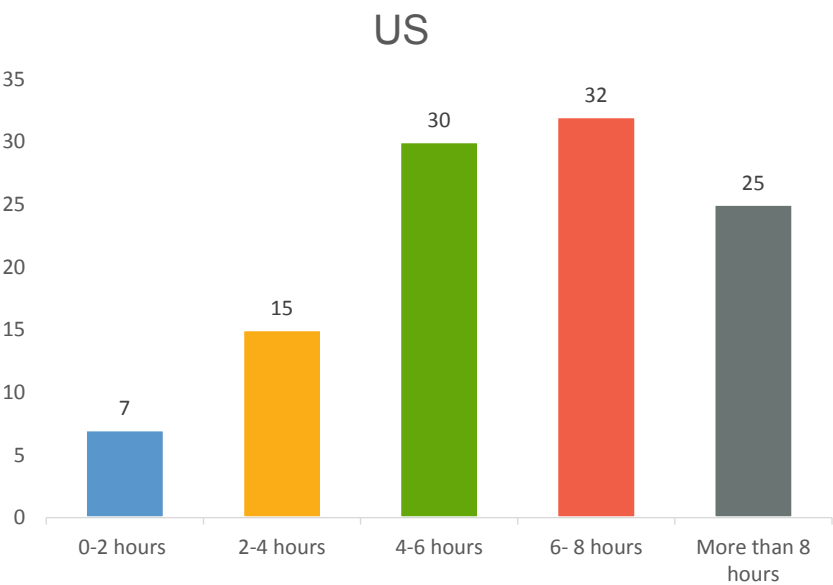
Advances in technology are reshaping the way common work activities are done. To enable and support business people using multiple devices, it becomes a necessity for organizations to keep the experience of doing so as fluid and consistent as possible. This requires a clear understanding of how business users choose to work and their increasingly multi-faceted use of digital devices. There also arises the need to build and adopt cross device software and applications to ensure a consistent experience across all screens.



Appendix

Survey Responses

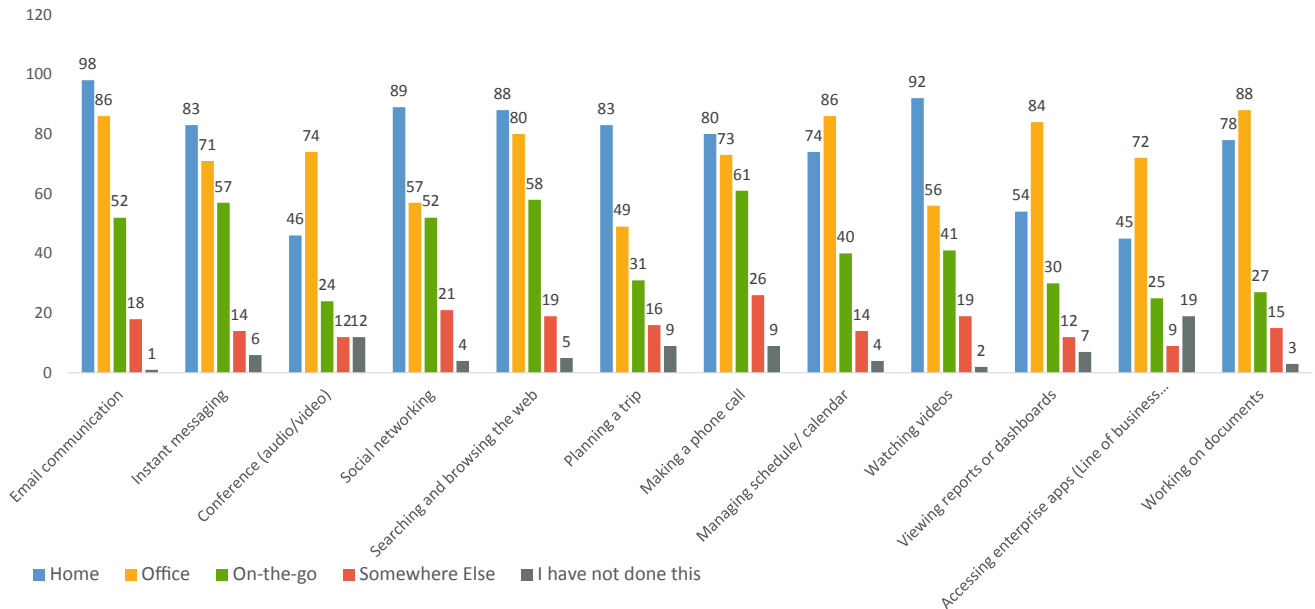
1. On average, how much time do you spend in a day on a Laptop/PC to accomplish your work: (Select one)



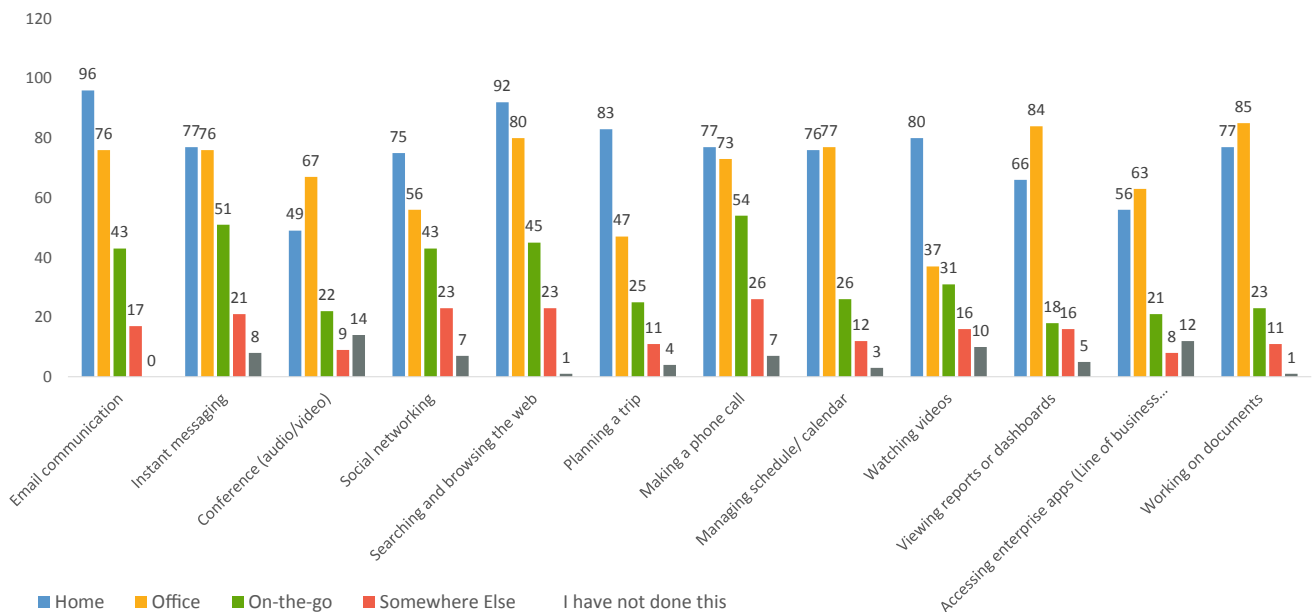
Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

2. Which activities have you completed on your Laptop/PC and where were you at the time of the activity? (Select all that apply)

US

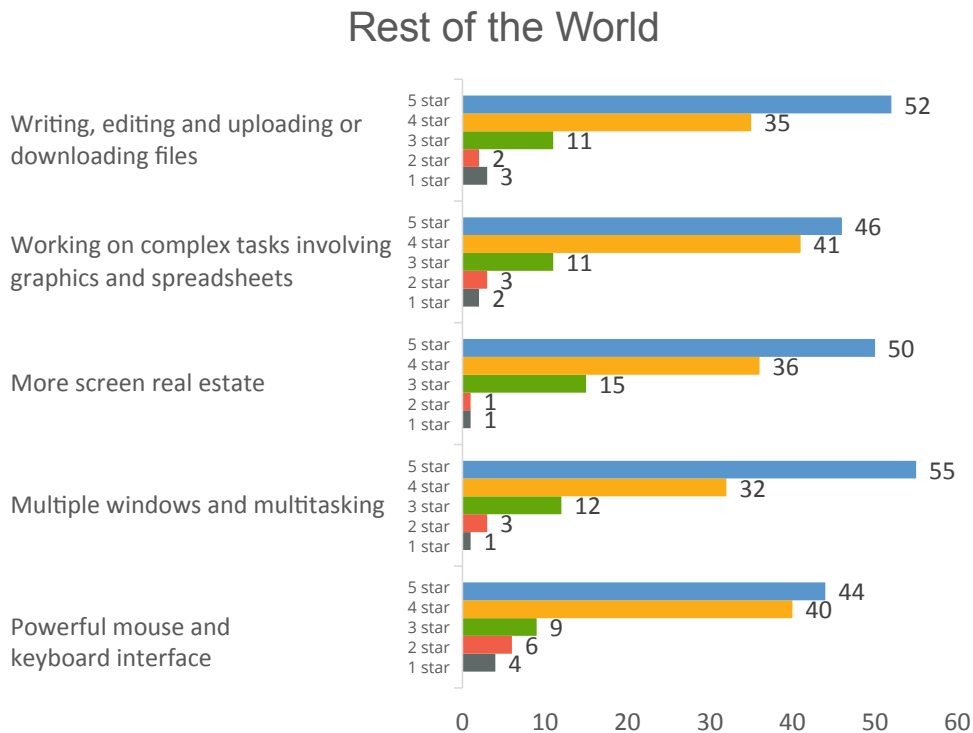
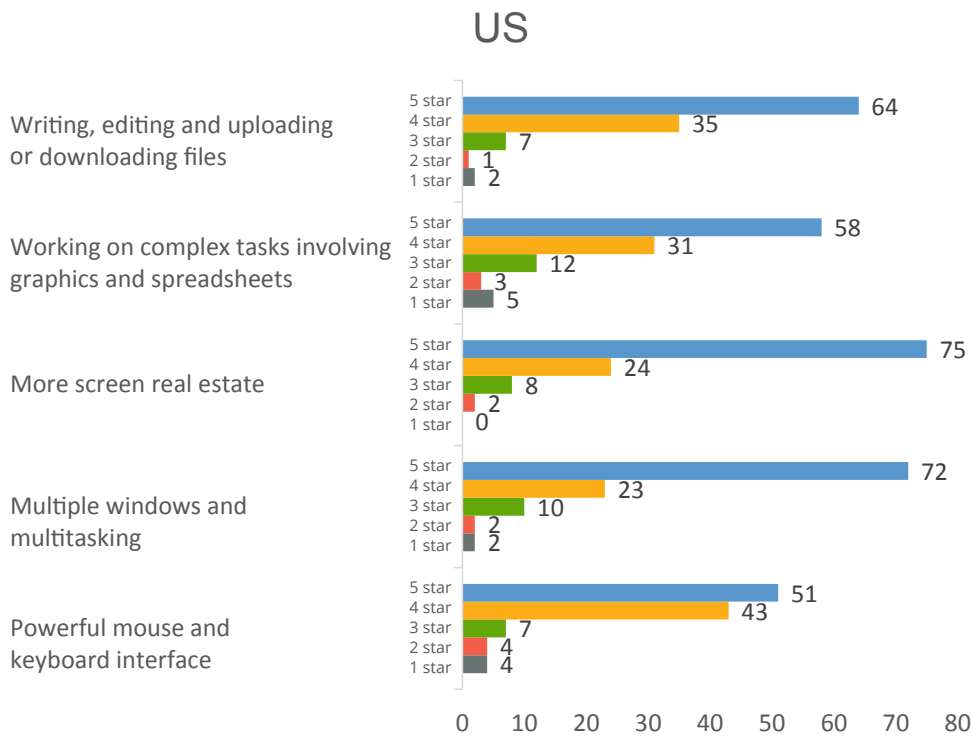


Rest of the World



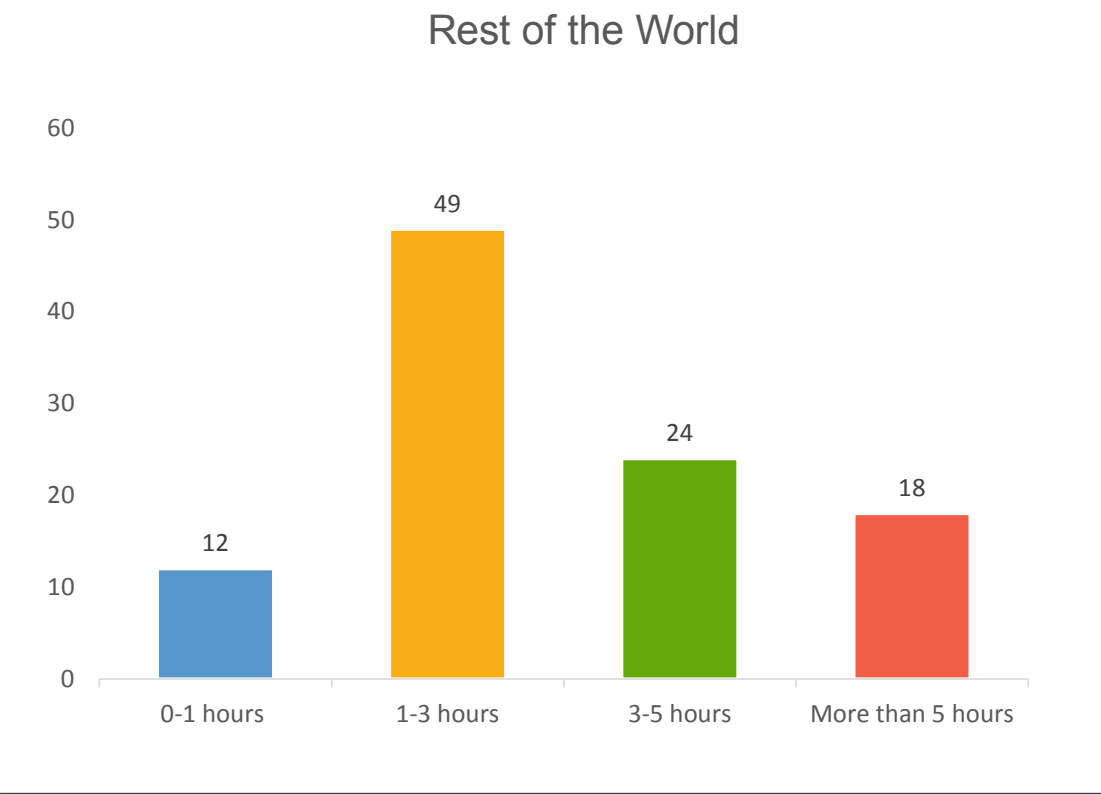
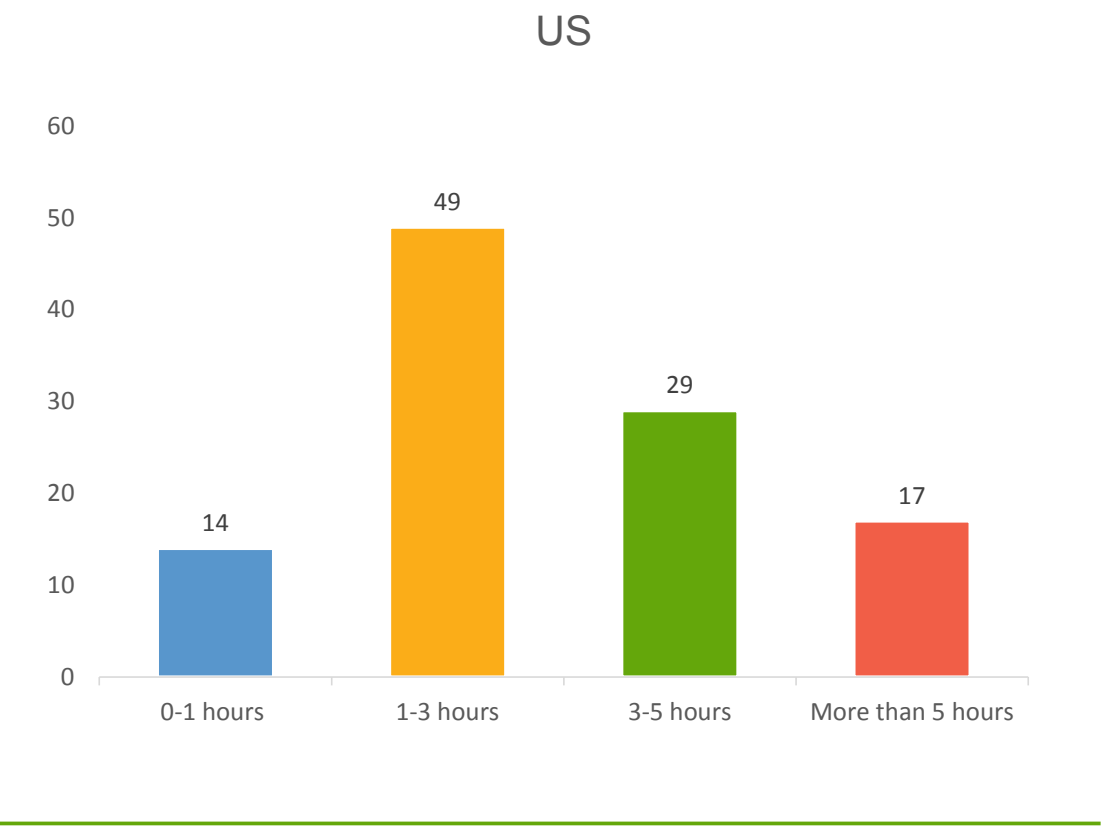
Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

3. Why do you prefer to use a Laptop/PC for work purpose?



Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

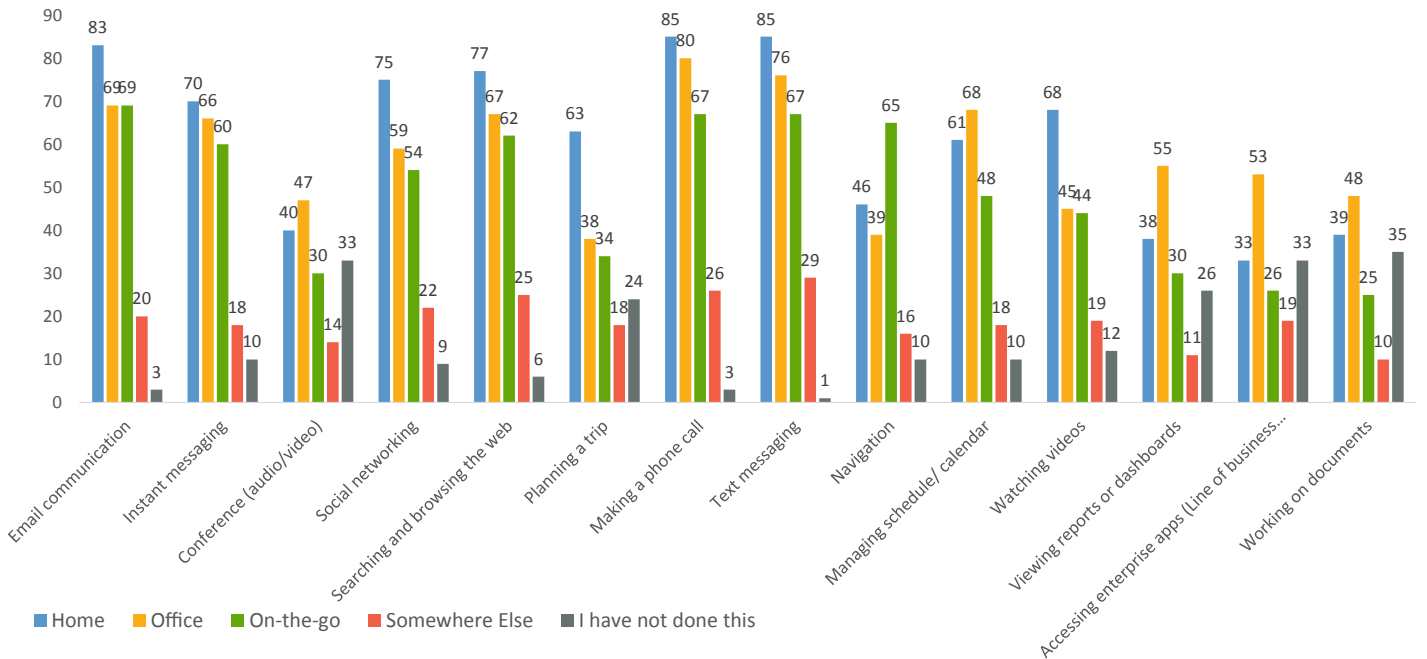
4. On average, how much time do you spend in a day on a Smartphone to accomplish your work: (Select one)



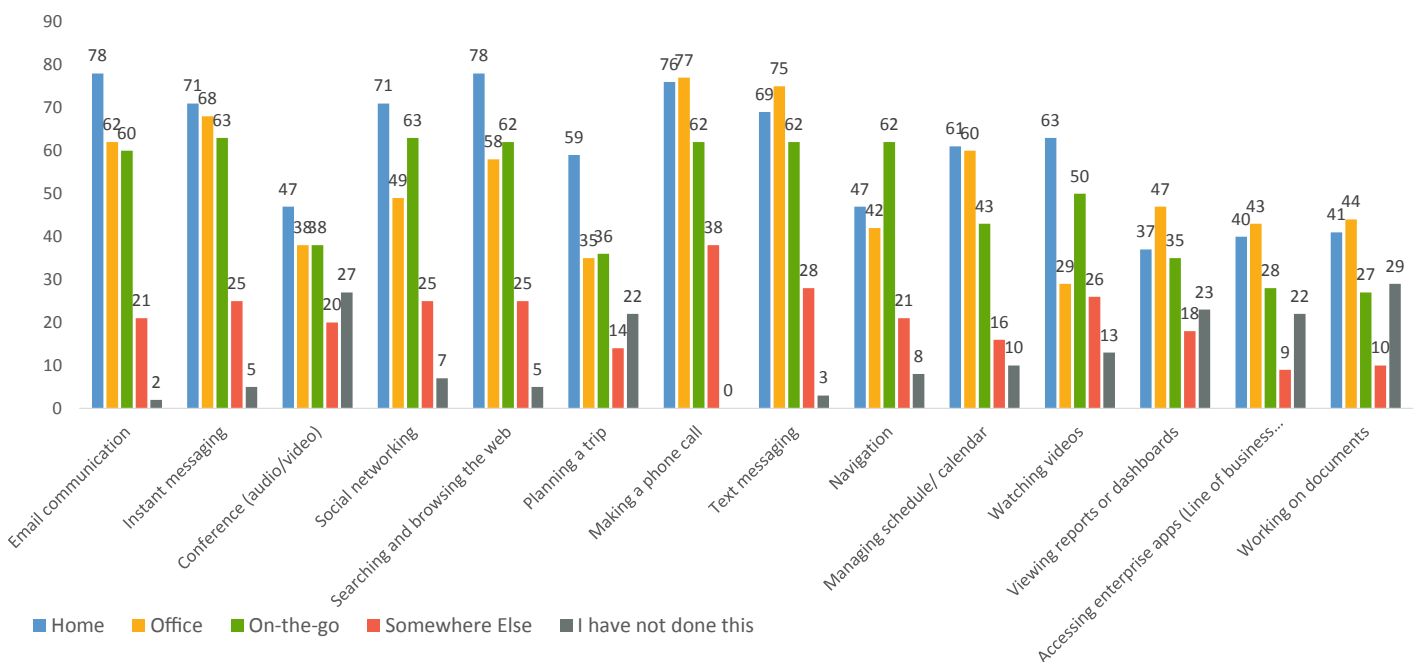
Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

5. Which activities have you completed on your Smartphone and where were you at the time of the activity? (Select all that apply)

US

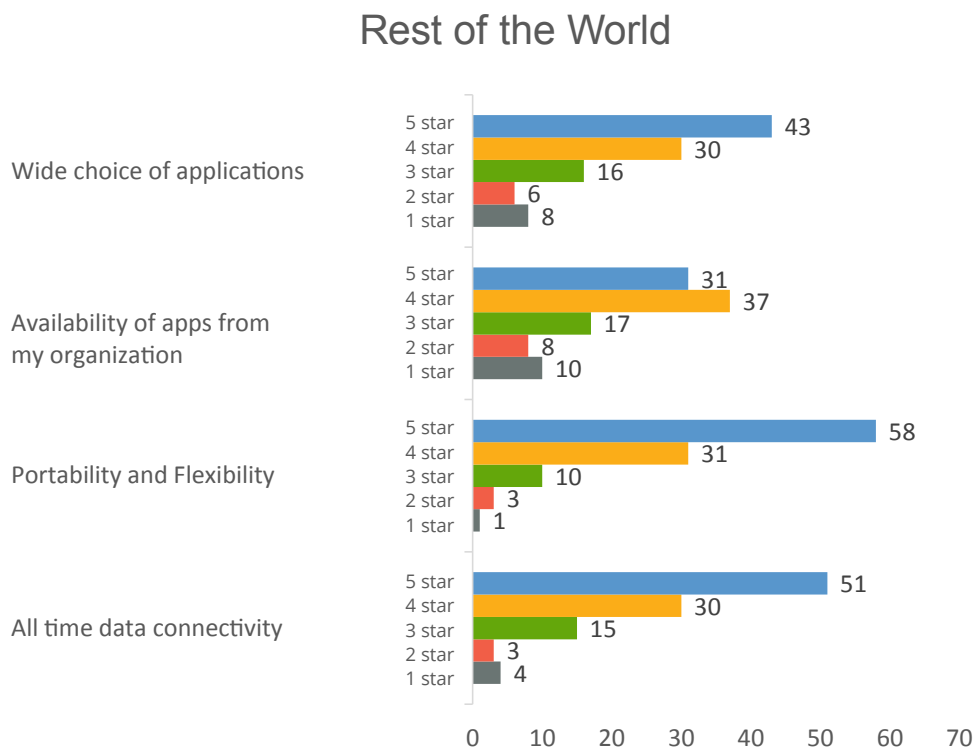
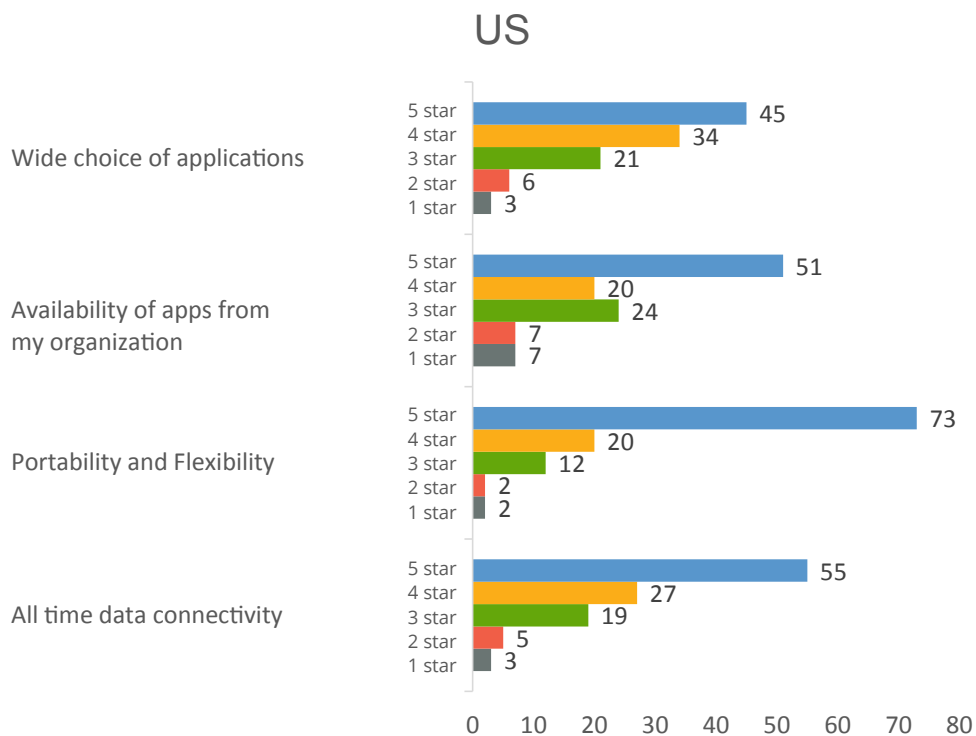


Rest of the World



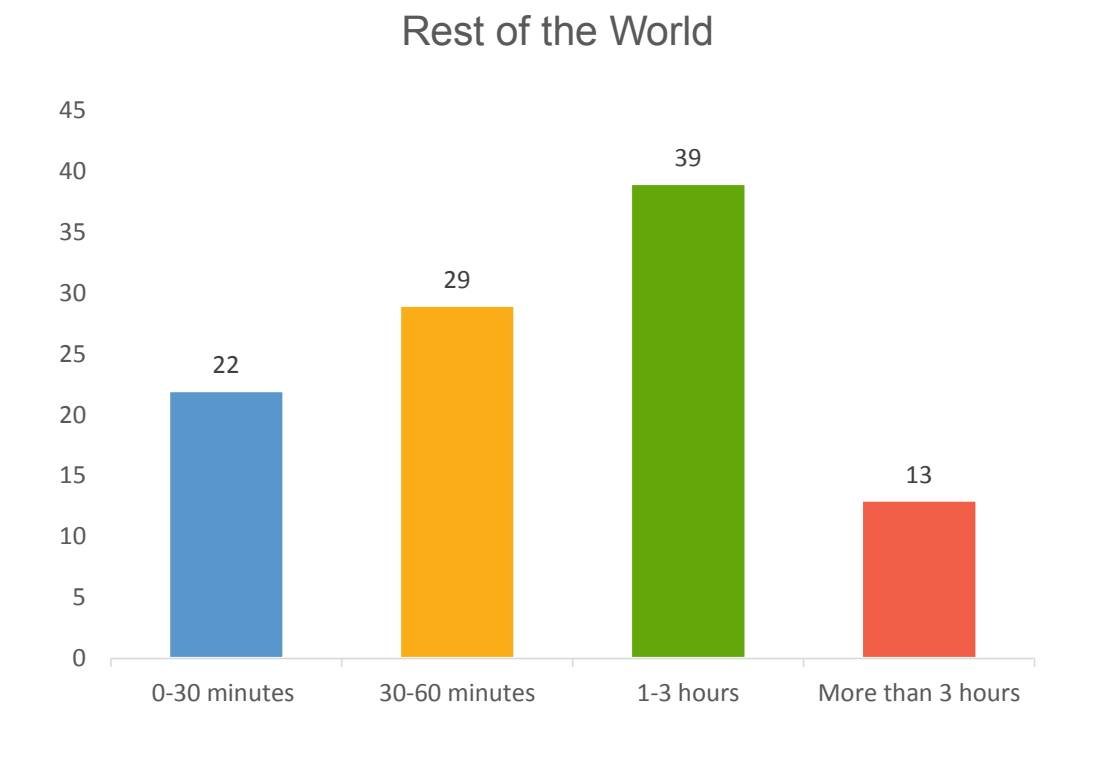
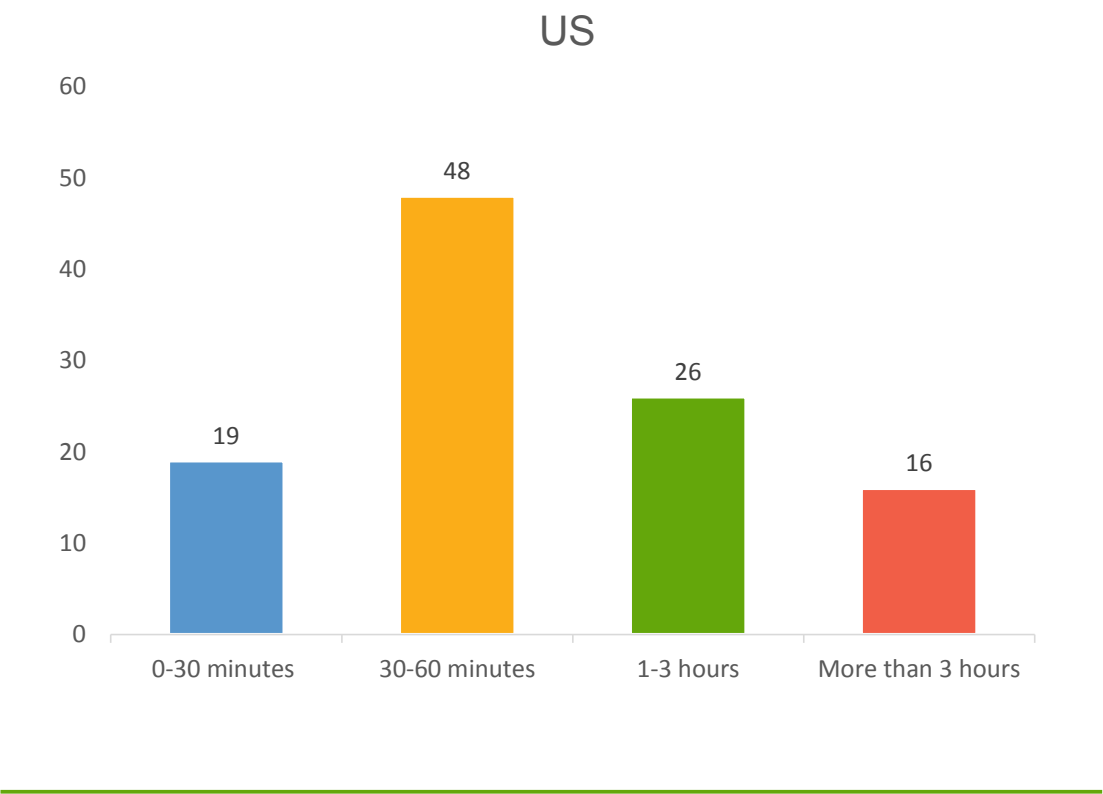
Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

6. Why do you prefer to use a Smartphone for work purpose?



Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

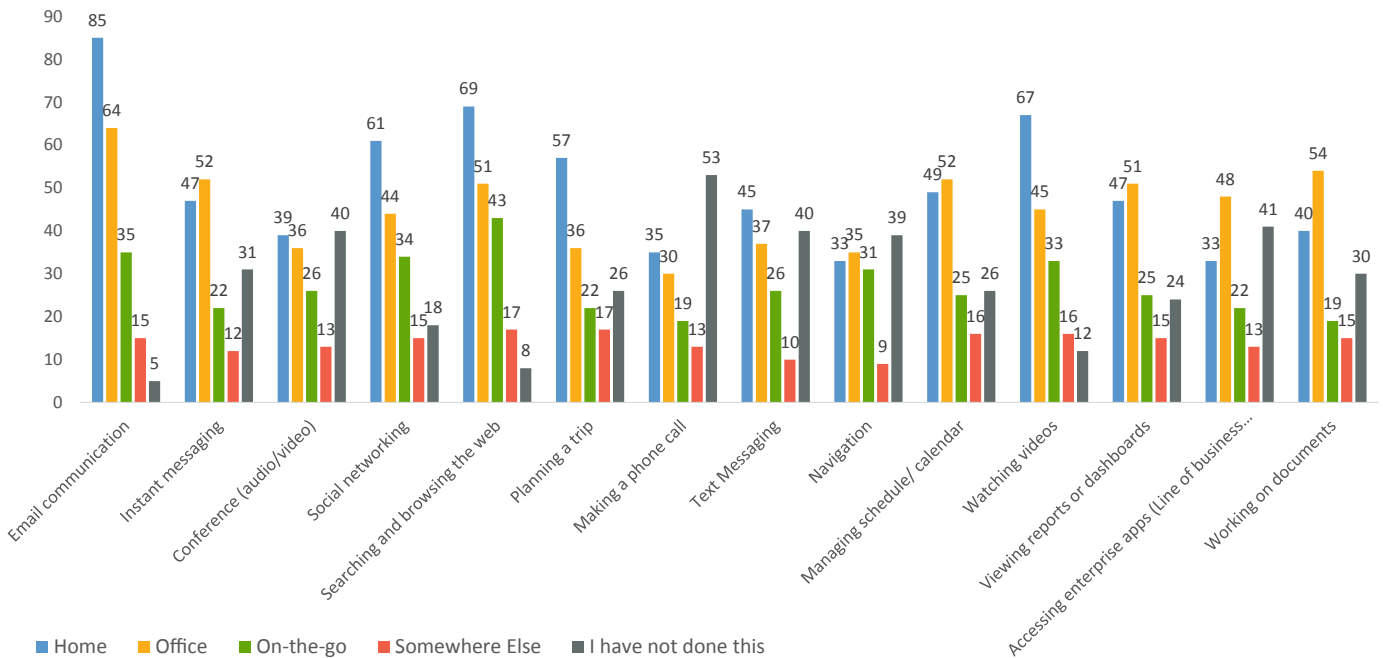
7. On average, how much time do you spend in a day on a Tablet to accomplish your work: (Select one)



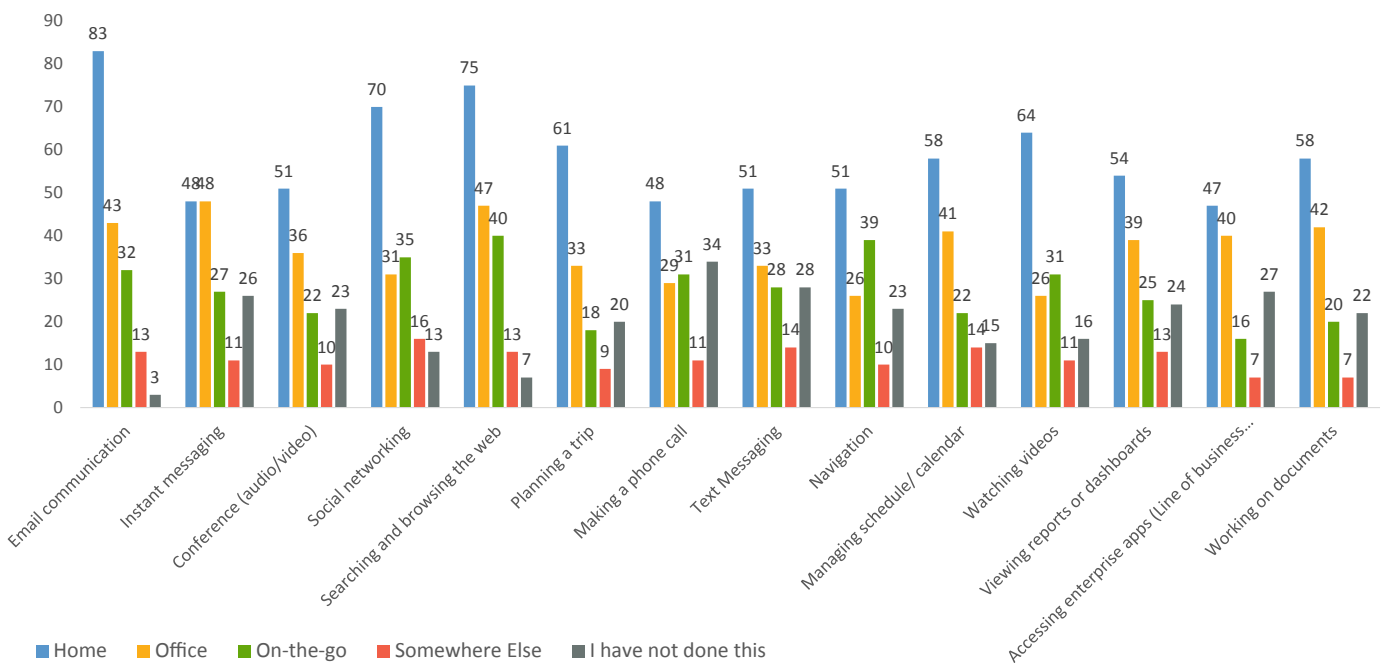
Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

8. Which activities have you completed on your Tablet and where were you at the time of the activity? (Select all that apply)

US

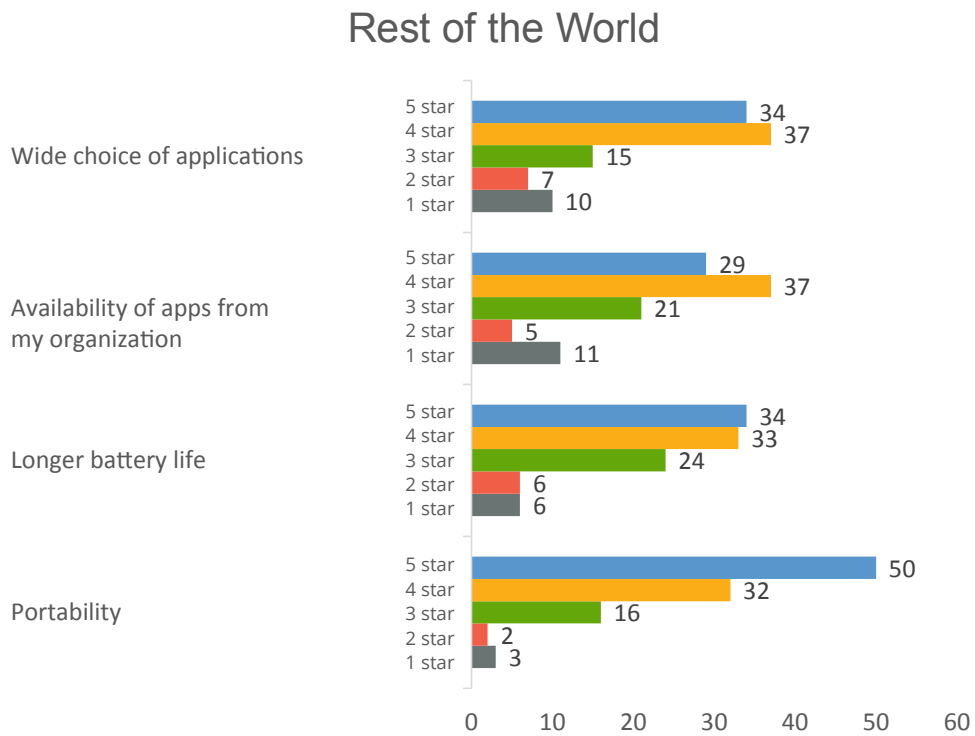
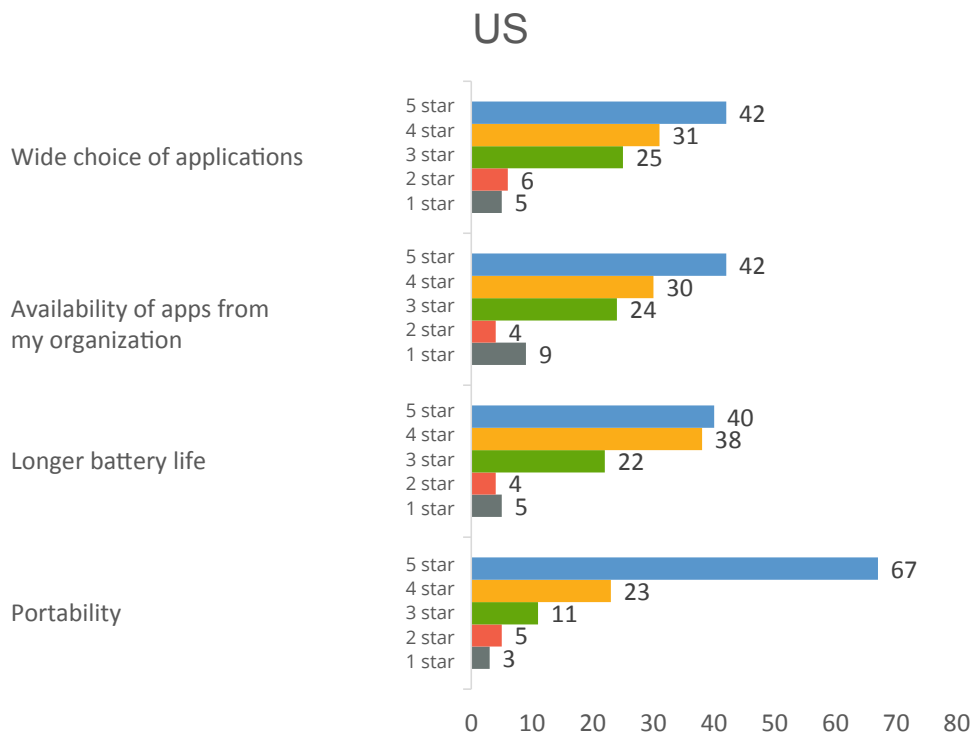


Rest of the World



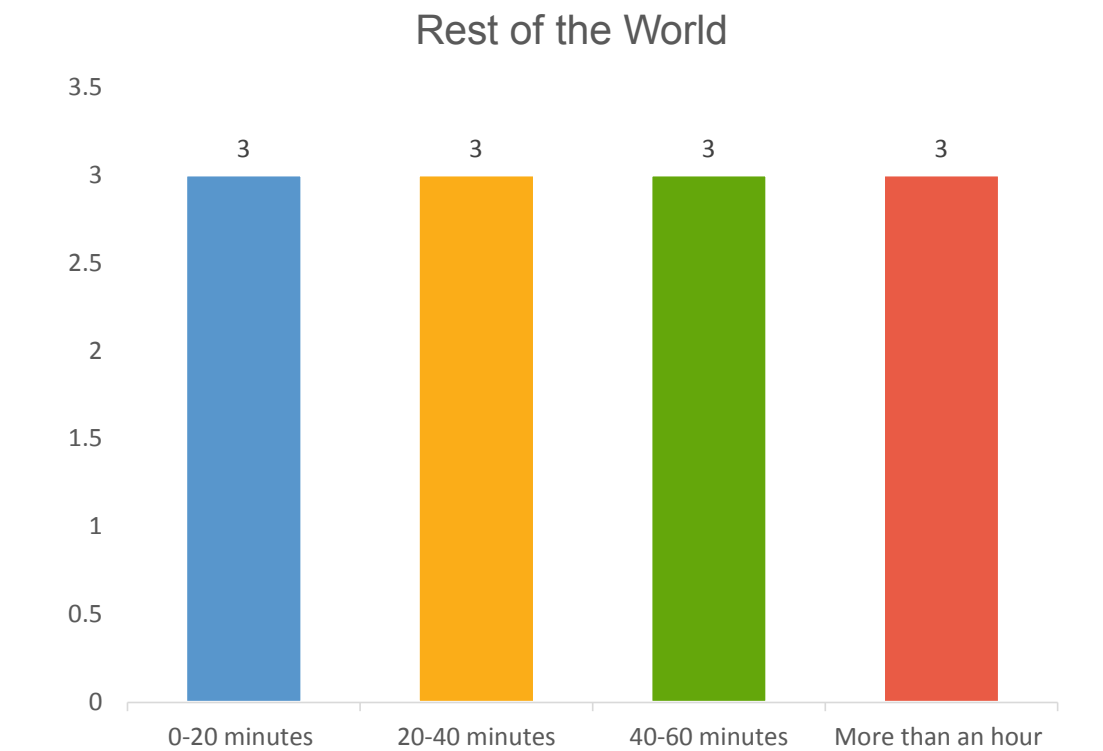
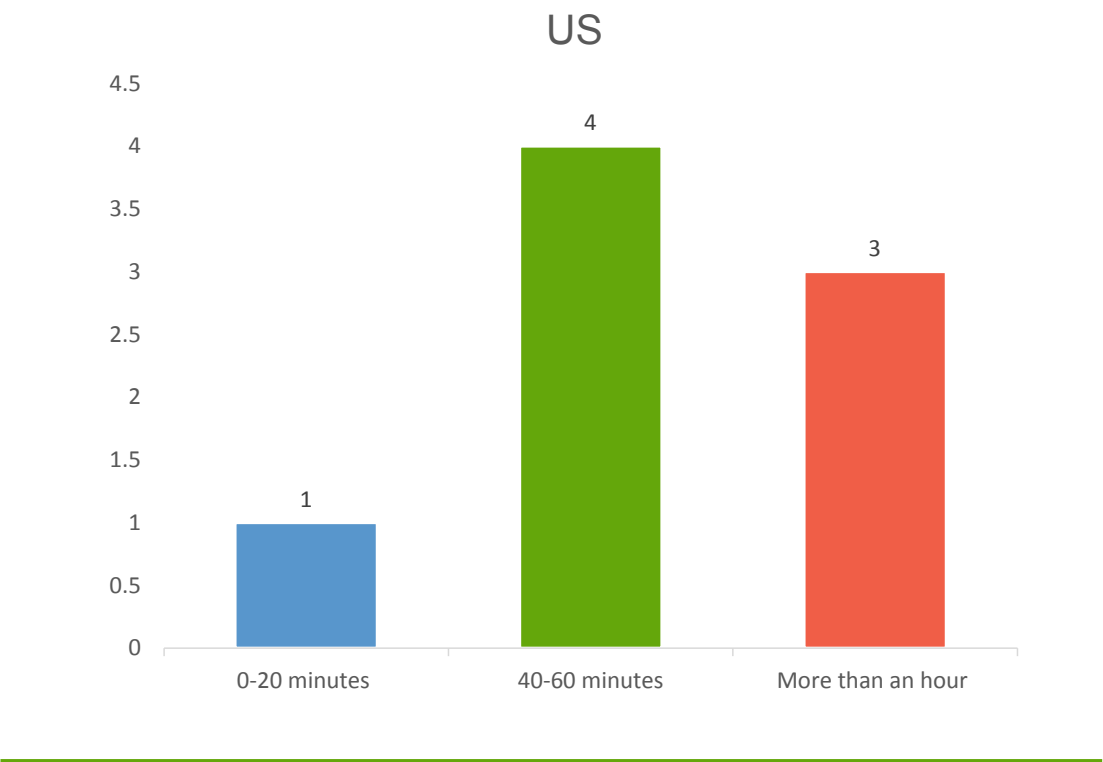
Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

9. Why do you prefer to use a Tablet for work purpose?



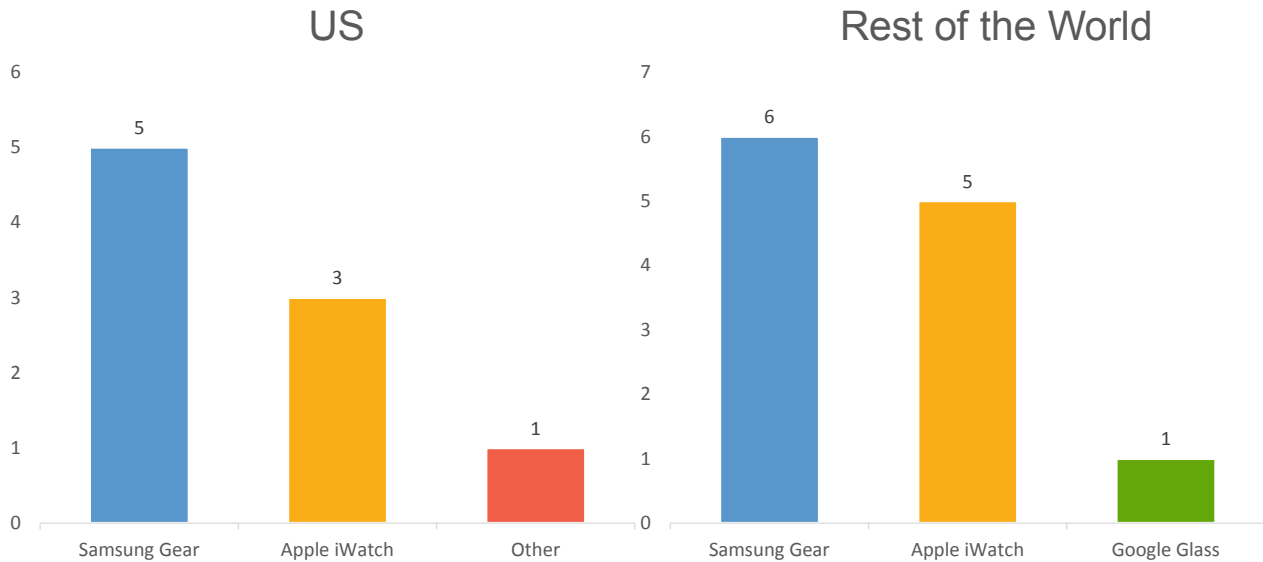
Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

10. On average, how much time do you spend in a day on a Smartwatch or any other personal/wearable device to accomplish your work: (Select one)

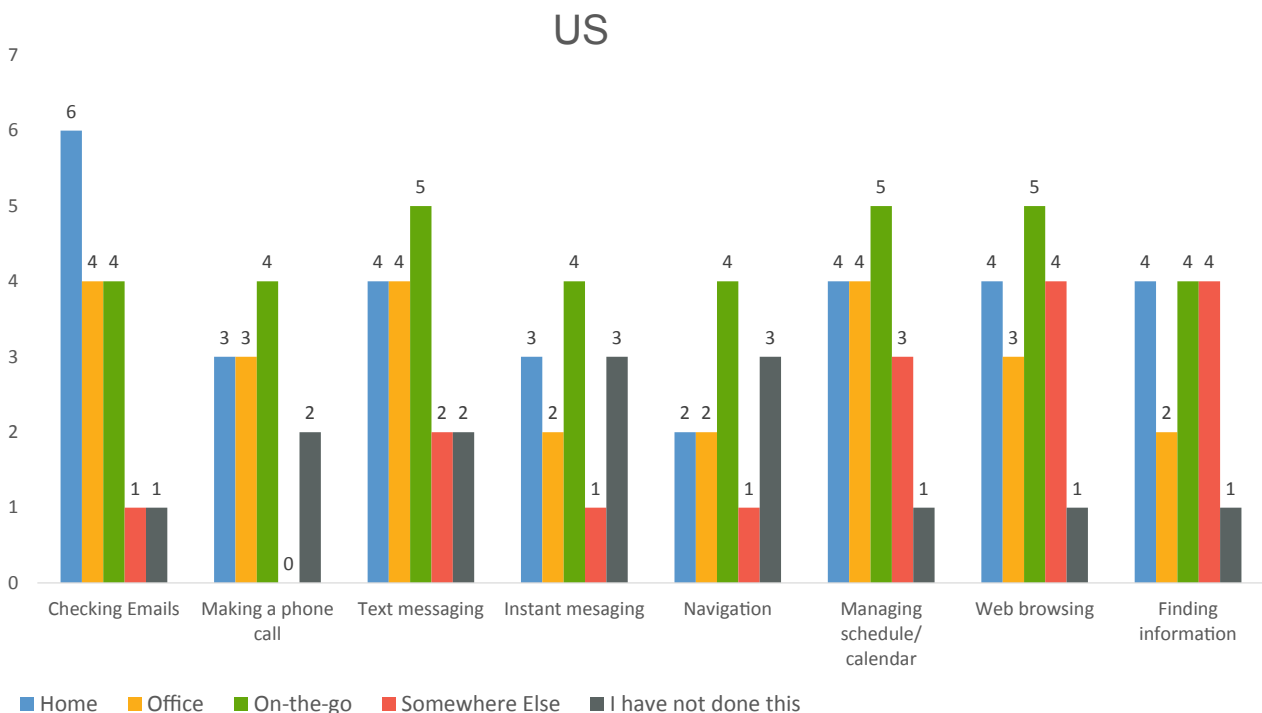


Total number of respondents = 212, Total number of respondents from US = 109, Total number of respondents from rest of the world = 103, Total number of respondents using other personal devices=20

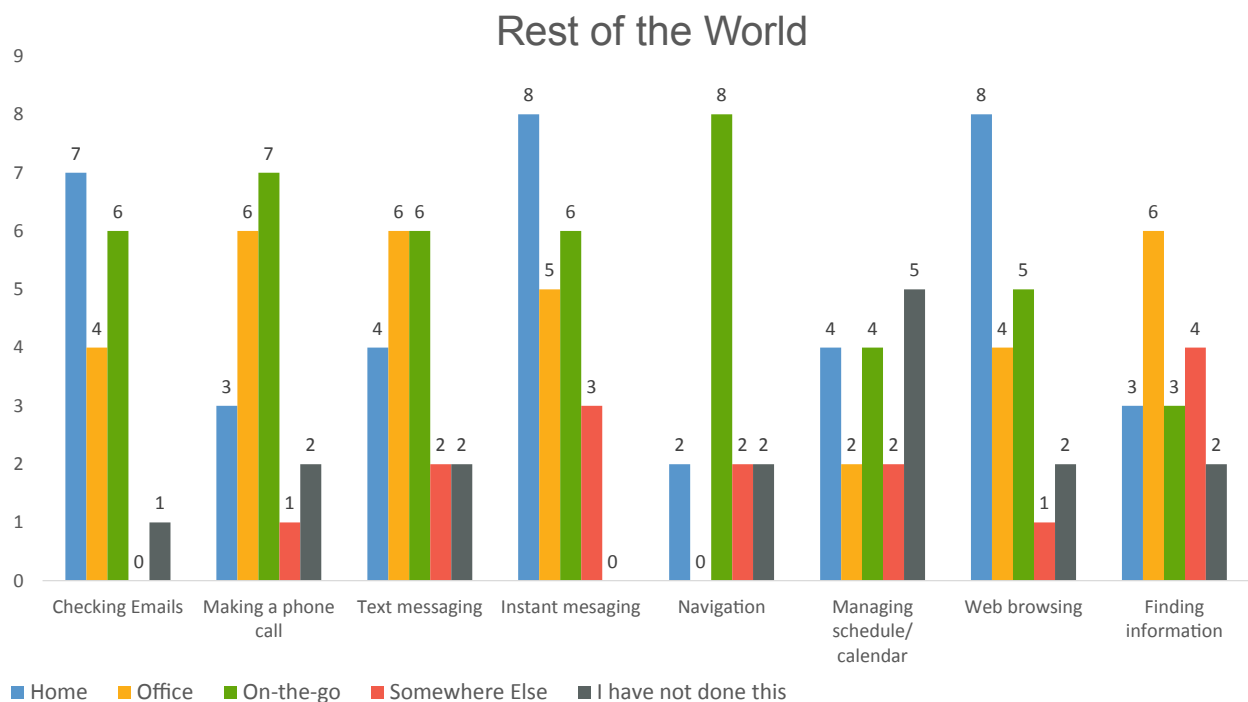
11. Which other personal or wearable device you use for your work purpose? Please specify the name. For example: Apple iWatch, Samsung Gear, Google Glass etc.



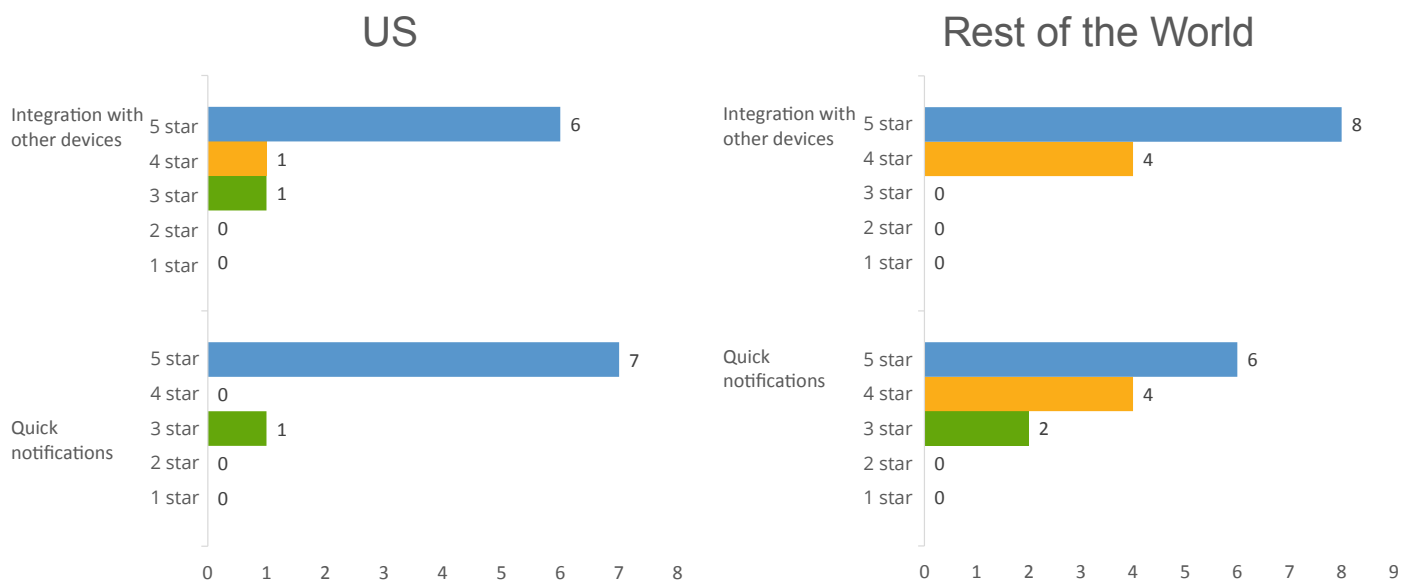
12. Which activities have you completed using your Smartwatch or any other personal/wearable device and where were you at the time of the activity? (Select all that apply)



Total number of respondents = 212, Total number of respondents from US = 109, Total number of respondents from rest of the world = 103, Total number of respondents using other personal devices=20

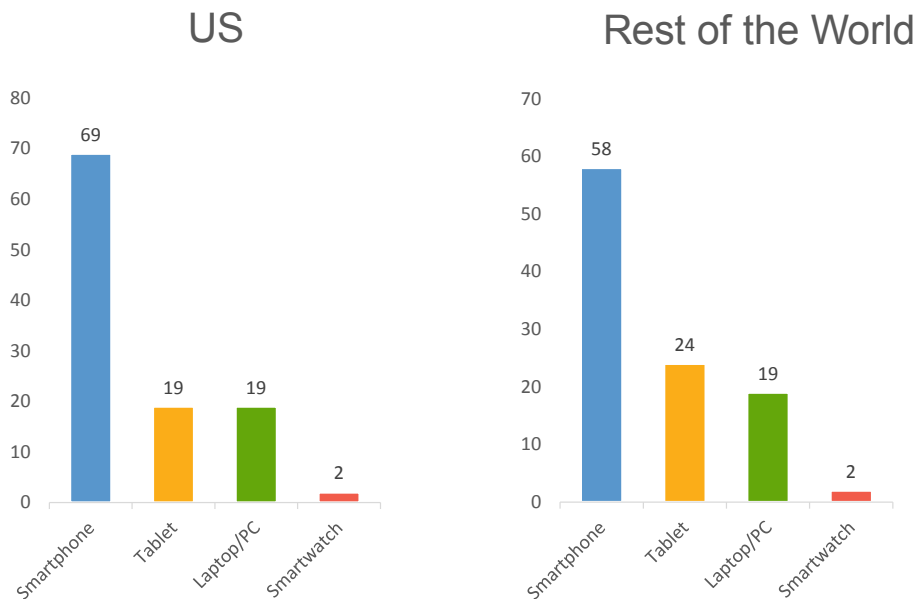


13. Why do you prefer to use a Smartwatch or any other personal/wearable device for work purpose?

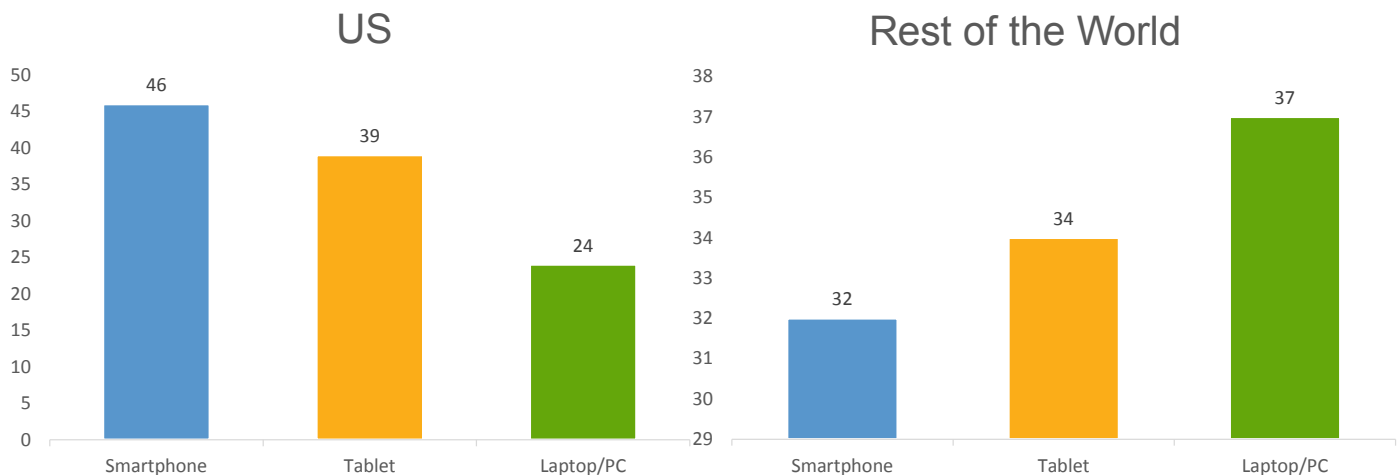


Total number of respondents = 212, Total number of respondents from US = 109, Total number of respondents from rest of the world = 103, Total number of respondents using other personal devices=20

14. You are in the middle of a meeting, presenting something to attendees from your Laptop/PC. At the same time, you have to respond to one important email, or you have to search for specific information on the web. Which device will you typically use? (Select one)

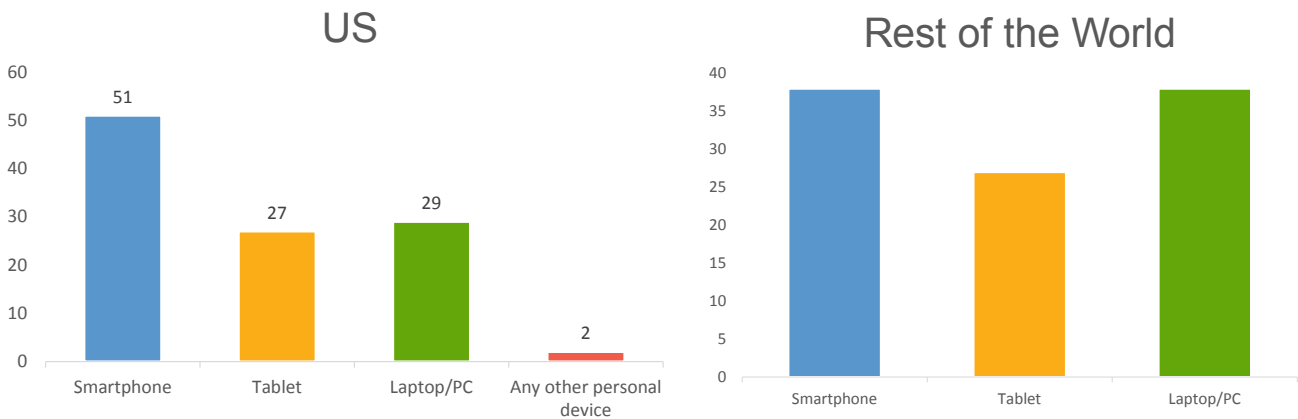


15. You are watching a product demo/video on your Laptop/PC. At the same time, you want to browse the website of that product's vendor. Which device do you prefer most? (Select one)

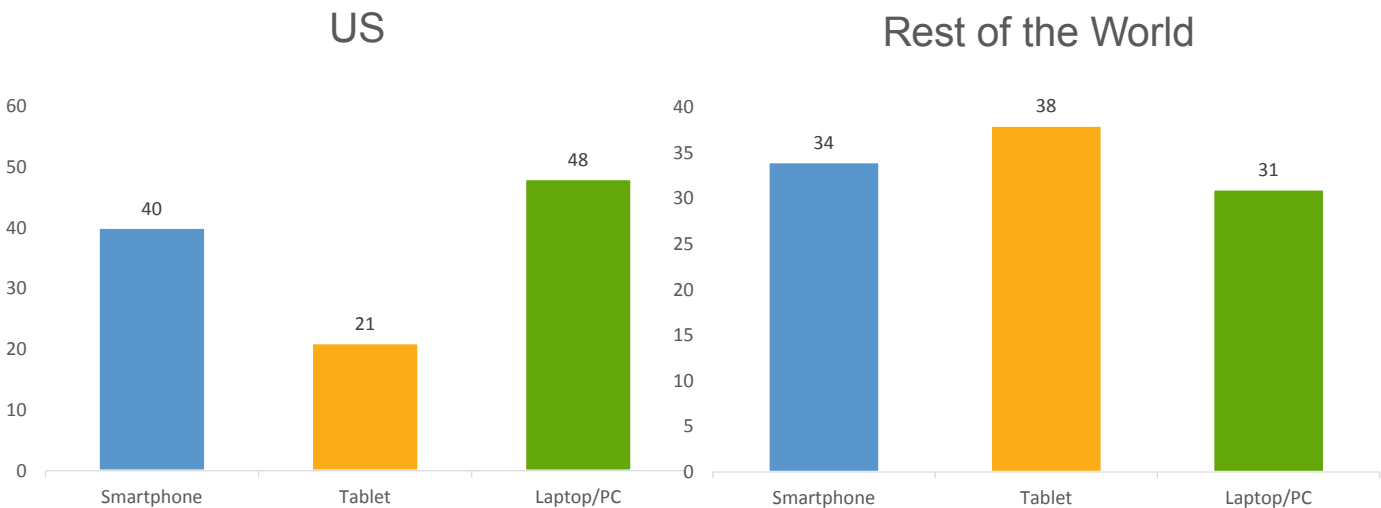


Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

16. You are at home and come across an interesting advertisement about a product on T V. You immediately want detailed information about that product; which device do you prefer? (Select one)



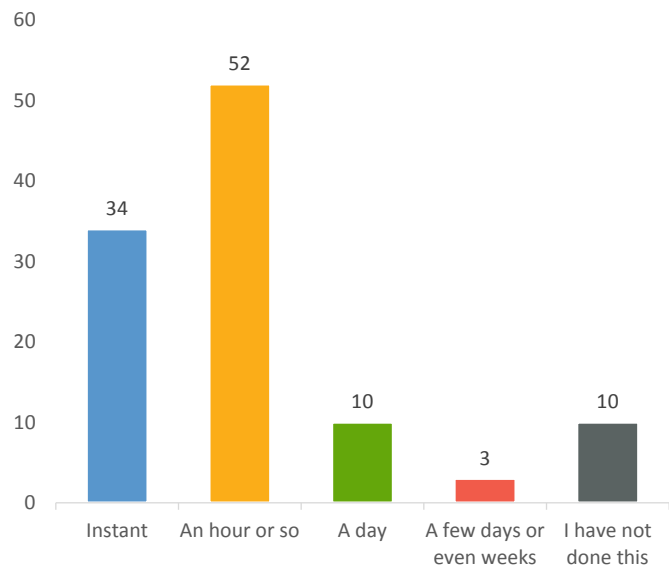
17. You are travelling to different city for a business meeting. From there you want to access a document from your office, or you have to check an important report. Which device do you prefer most? (Select one)



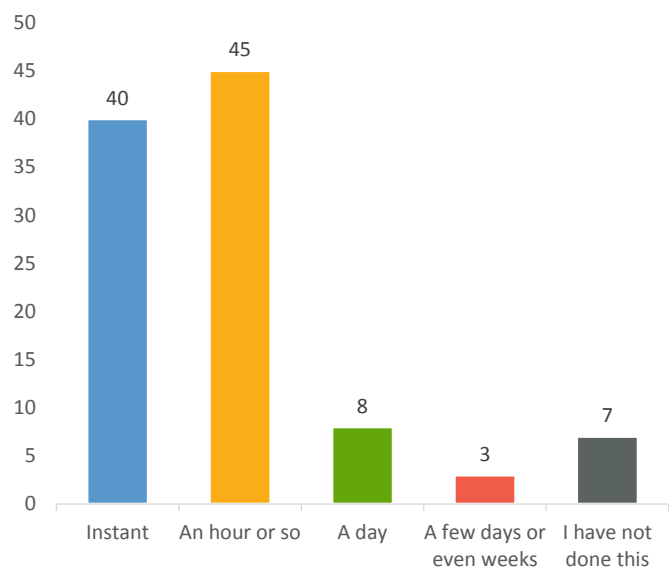
Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

18. On average, how much time elapses between the start of an activity on one device and the continuation of the same activity on different device? (Select one)

US


















Rest of the World


















Total number of respondents = 212, Total number of respondents from US = 109, Total number of respondents from rest of the world = 103
















19. For this question, think about a recent time when you started an activity on one device and then continued or finished the same activity on another device. Please select which device you started on, and then which device you continued on.

Started on Laptop/ PC	Activity	Continued on...		
				
61%	 Email communication	27%	23%	9%
23%	 Instant messaging	8%	11%	4%
39%	 Conference (audio/video)	19%	11%	6%
35%	 Social Networking	13%	16%	6%
49%	 Searching and browsing the web	20%	15%	12%
45%	 Finding Information	20%	16%	8%
49%	 Planning a trip	26%	8%	12%
32%	 Managing schedule/ calendar	16%	10%	4%
48%	 Watching videos	21%	10%	15%
57%	 Viewing reports or dashboards	31%	11%	12%
40%	 Accessing enterprise apps or information	22%	8%	9%
68%	 Working on documents	41%	7%	15%

Total number of respondents for email communication= 209, Instant messaging = 208, Conference (audio/video) = 206, Social networking = 206, Searching and browsing the web = 205, Finding Information = 206, Planning a trip = 204, Managing schedule/ calendar = 205, Watching videos = 205, Viewing reports or dashboards = 204, Accessing enterprise apps or information = 204, Working on documents = 204

Started on Smartphone	Activity	Continued on...		
				
30%	 Email communication	15%	7%	7%
55%	 Instant messaging	6%	37%	9%
20%	 Conference (audio/video)	6%	8%	4%
42%	 Social Networking	12%	17%	9%
29%	 Searching and browsing the web	14%	9%	6%
31%	 Finding Information	15%	8%	6%
23%	 Planning a trip	11%	7%	3%
40%	 Managing schedule/ calendar	8%	20%	10%
21%	 Watching videos	8%	7%	6%
10%	 Viewing reports or dashboards	5%	3%	0%
24%	 Accessing enterprise apps or information	4%	11%	5%
9%	 Working on documents	5%	2%	1%

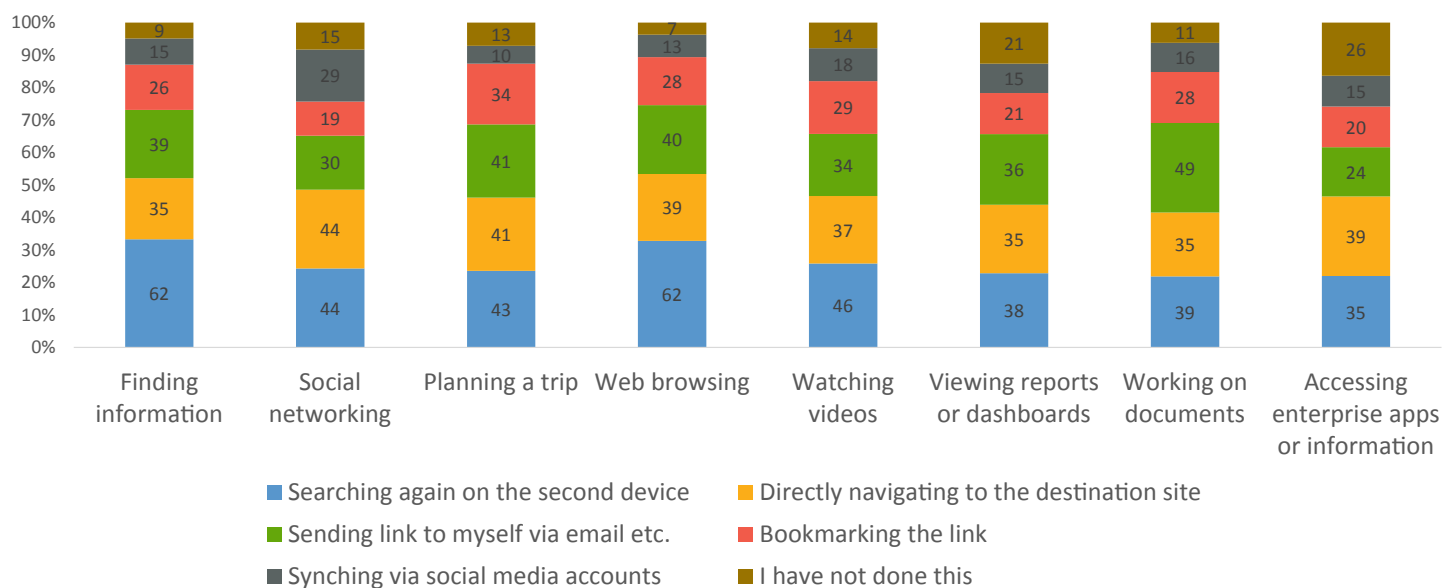
Total number of respondents for email communication= 209, Instant messaging = 208, Conference (audio/video) = 206, Social networking = 206, Searching and browsing the web = 205, Finding Information = 206, Planning a trip = 204, Managing schedule/ calendar = 205, Watching videos = 205, Viewing reports or dashboards = 204, Accessing enterprise apps or information = 204, Working on documents = 204

Started on Tablet	Activity	Continued on...		
				
2.9%	 Email communication	1.4%	0.50%	0.50%
5.3%	 Instant messaging	1.0%	2.4%	1.40%
14.6%	 Conference (audio/video)	6.8%	2.9%	4.4%
9.7%	 Social Networking	3.9%	1.9%	2.4%
14.1%	 Searching and browsing the web	5.4%	4.4%	2.9%
13.1%	 Finding Information	5.3%	2.9%	3.4%
14.7%	 Planning a trip	5.9%	2.9%	4.4%
13.7%	 Managing schedule/ calendar	3.9%	4.9%	3.4%
15.6%	 Watching videos	3.4%	4.4%	5.4%
14.2%	 Viewing reports or dashboards	7.8%	2.5%	3.4%
12.7%	 Accessing enterprise apps or information	3.4%	4.9%	3.4%
12.3%	 Working on documents	7.4%	2.0%	2.0%

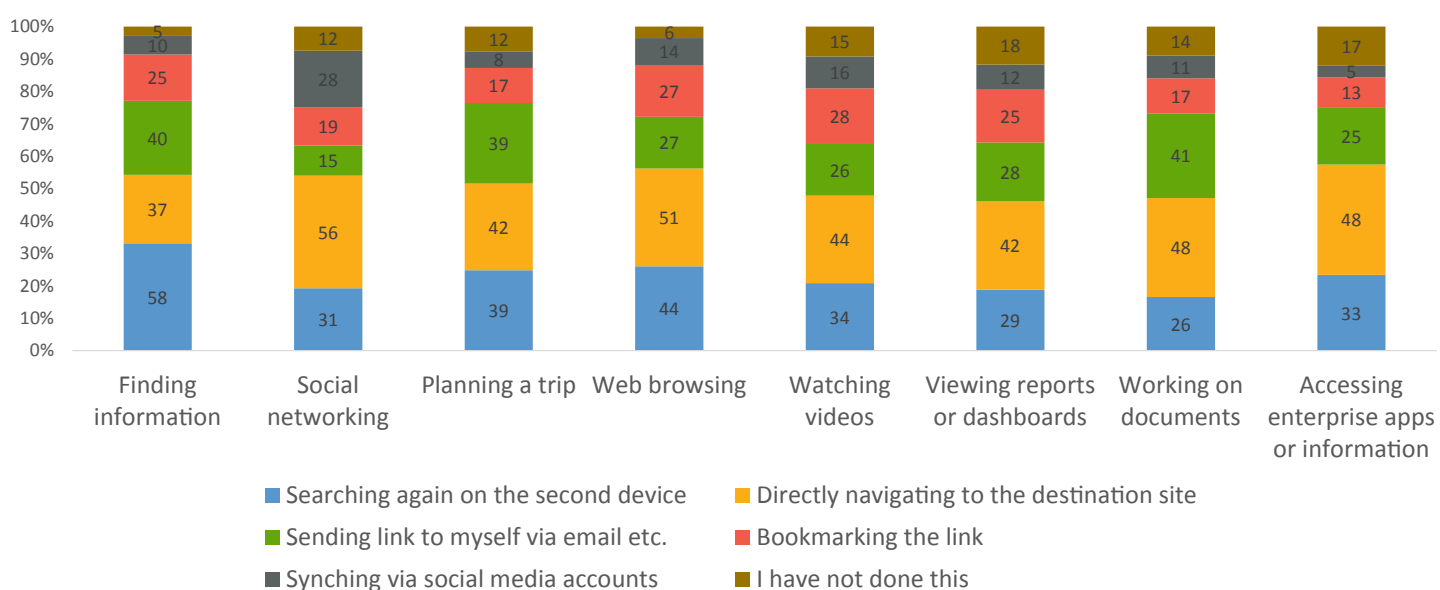
Total number of respondents for email communication= 209, Instant messaging = 208, Conference (audio/video) = 206, Social networking = 206, Searching and browsing the web = 205, Finding Information = 206, Planning a trip = 204, Managing schedule/ calendar = 205, Watching videos = 205, Viewing reports or dashboards = 204, Accessing enterprise apps or information = 204, Working on documents = 204

20. You indicated that you have started various activities on one device and then continued them on different device. For each activity (column), please indicate the way(s) in which you did this.

US

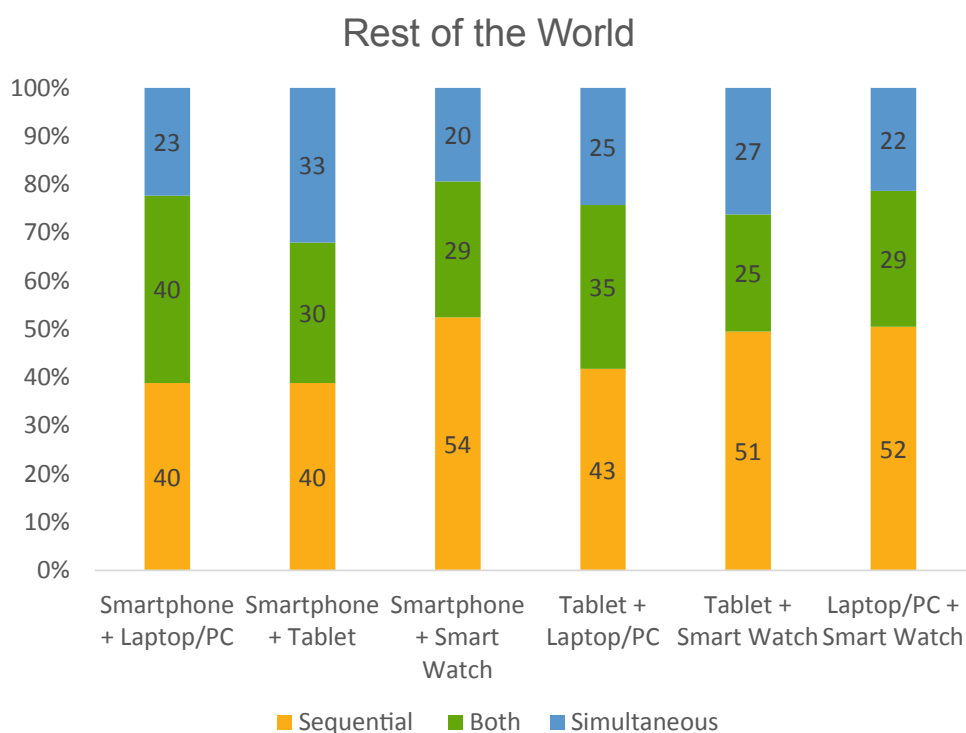
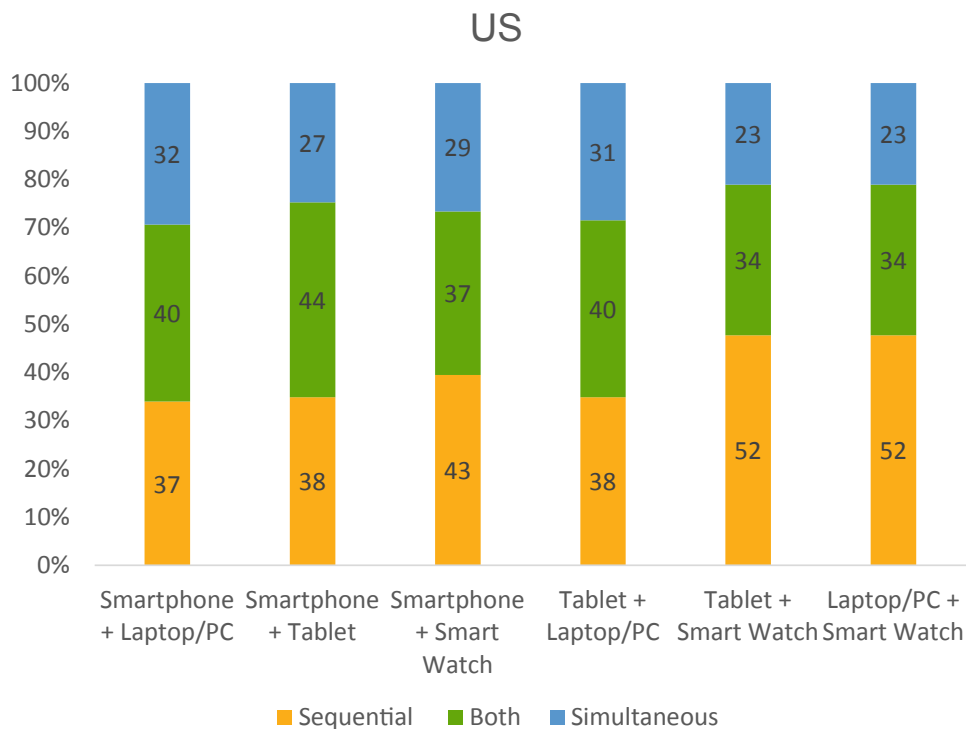


Rest of the World



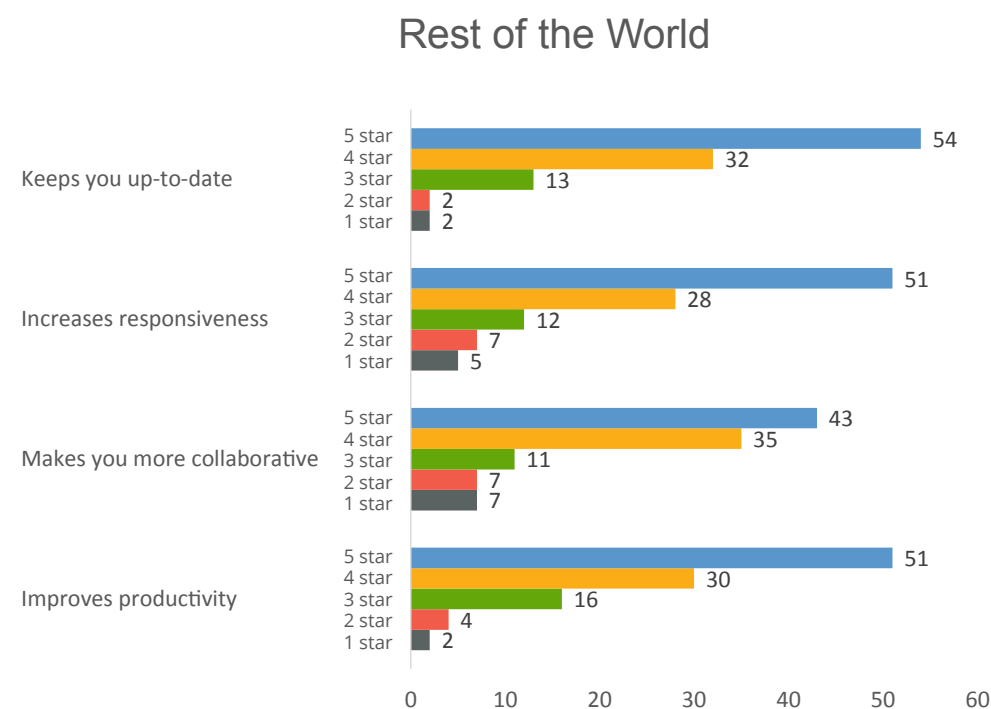
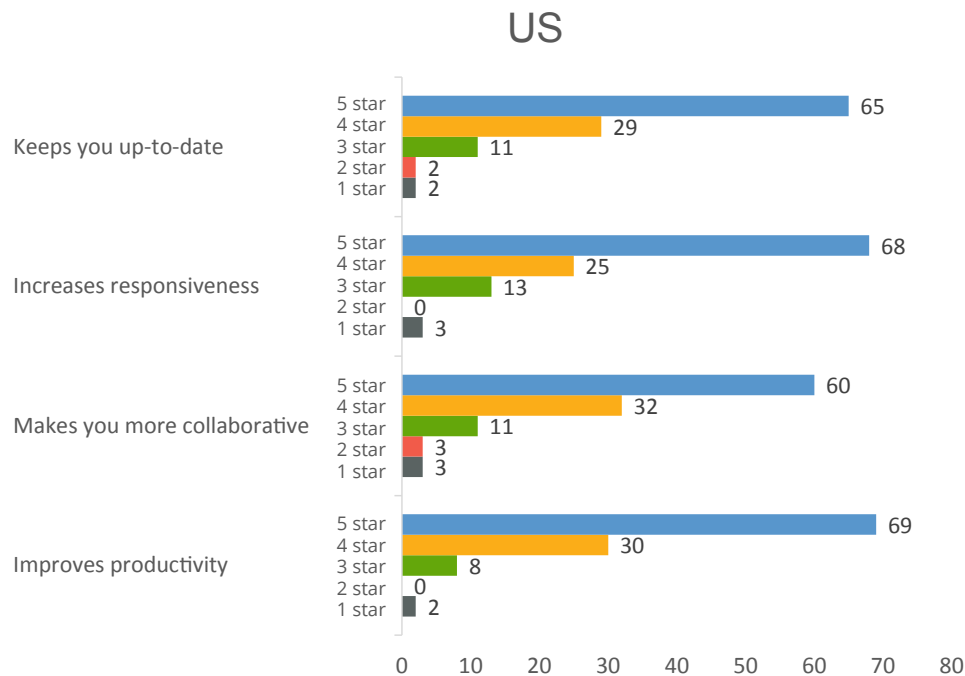
Total number of respondents = 212, Total number of respondents from US = 109,
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21. When you use multiple devices for one activity, do you use those devices sequentially (one after the other) or simultaneously (both at the same time)? Please consider the combination of devices listed below when answering.



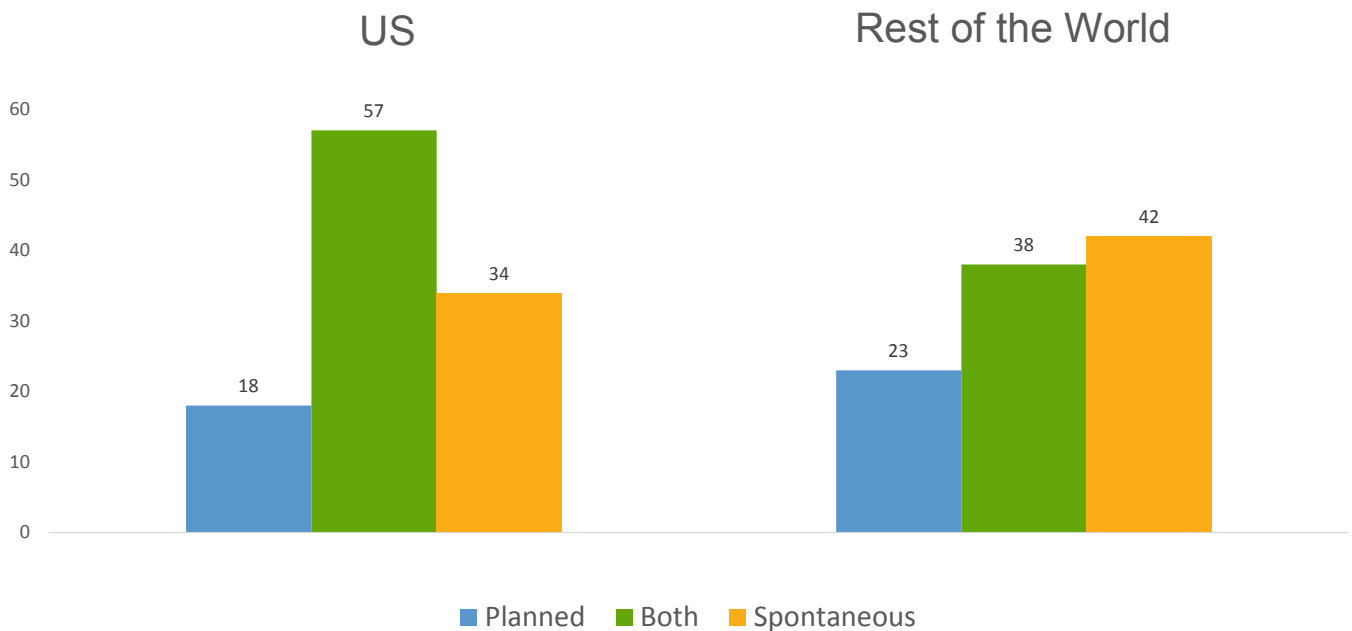
Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

22. How does performing activities on multiple devices help you?



Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

23. Is your use of multiple devices for different activities planned or spontaneous? (Select one)



Total number of respondents = 212, Total number of respondents from US = 109,
Total number of respondents from rest of the world = 103

This survey is prepared by Advaiya Solutions, Inc.

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