Deloitte.

**Global Mobile Consumer
Survey 2016**
The Swedish Cut

A study on Swedish mobile consumer
habits in the height of the smartphone era

Foreword

Welcome to the Swedish cut of the 2016 edition of Deloitte's Global Mobile Consumer Survey.

Digital technologies are woven into the fabric of everyday living. Family and friends stay connected, scheduled, and entertained. Technology is now necessary for entertainment, health, driving, socializing, shopping, banking, traveling, learning and dozens of other personal activities. The massive impacts of mobile technology on Swedes' daily lives and on businesses in Sweden are hard to overstate.

Deloitte's Mobile Consumer Survey provides unique insight into the mobile behaviour of nearly 53,000 respondents across 31 countries globally, with the sample for Sweden covering around 2,000 respondents. We are proud to say that this makes the survey one of the largest available information sources of its kind.

This report is a summary of our survey data and we hope that you find this set of insights useful. Please do not hesitate to reach out to us for further conversations based on the content or full data sets.

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The Swedish mobile consumer

The mobile phone has transitioned from being a practical utility tool, used mainly for communication, to becoming an essential service provider that proactively makes life easier for its users based on their behaviour. New technology and changing consumer behaviour lead to increasing demand for more advanced digital services and products from the brands and organisations that we interact with.

The Swedish mobile consumers are highly tech-savvy put in an international context. Not surprisingly, young Swedes interact more with their phones than the older generations, but the data also clearly shows that all age groups are becoming increasingly digital. Two areas in which the young stand out as an age group are their comfortability with online purchasing and with sharing data with third parties.

The Younger User
18-34

69%

Check their phone
during the night

58%

Compare prices online
when out shopping

66%

Use IM apps more
than once a week

44%

Used Snapchat once
or more

The Middle Aged User
35-54

36%

Compare prices online
when out shopping

58%

Used phone to transfer
money to a person

19%

Stream music at least
once per day

11%

Used Snapchat once
or more

The 55+ User
55-

26%

Check their phone
during the night

37%

Used phone to transfer
money to a person

9%

Stream music at least
once per day

28%
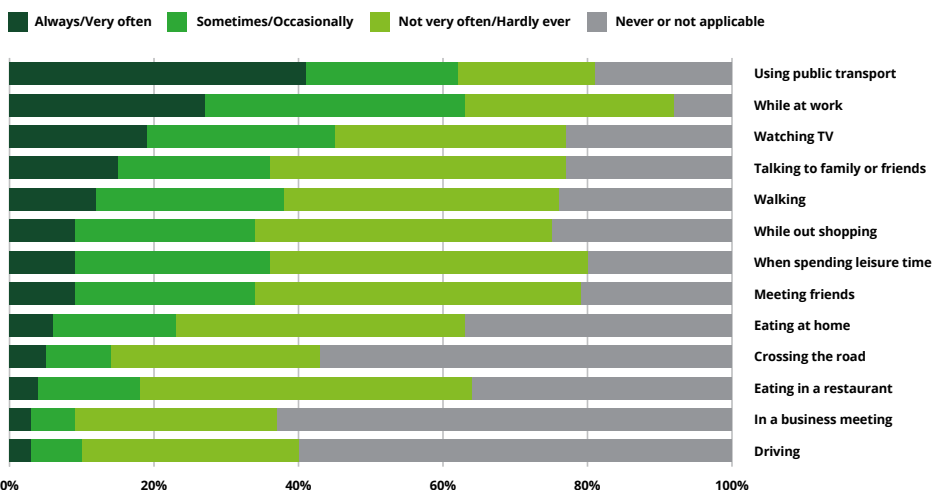
Use IM apps more
than once a week

My dearest friend, the smartphone

Today, the Swedish consumers collectively look at their smartphones more than 300 million times a day. The smartphone is more embedded in our lives than ever before. It has become one of our most personal and most desired companions, rarely leaving our side. Multitasking is a large part of our lives and the smartphone is the main tool: it accompanies and participates in many daily habits and is the catalogue of our conversations. The smartphone has essentially become a digital extension of ourselves.

Figure 1. Usage of smartphones while doing other activities
How often, if at all, do you use your mobile phone while doing the following?

Legend: Always/Very often — Sometimes/Occasionally — Not very often/Hardly ever — Never or not applicable

Categories (top to bottom):
- Using public transport
- While at work
- Watching TV
- Talking to family or friends
- Walking
- While out shopping
- When spending leisure time
- Meeting friends
- Eating at home
- Crossing the road
- Eating in a restaurant
- In a business meeting
- Driving

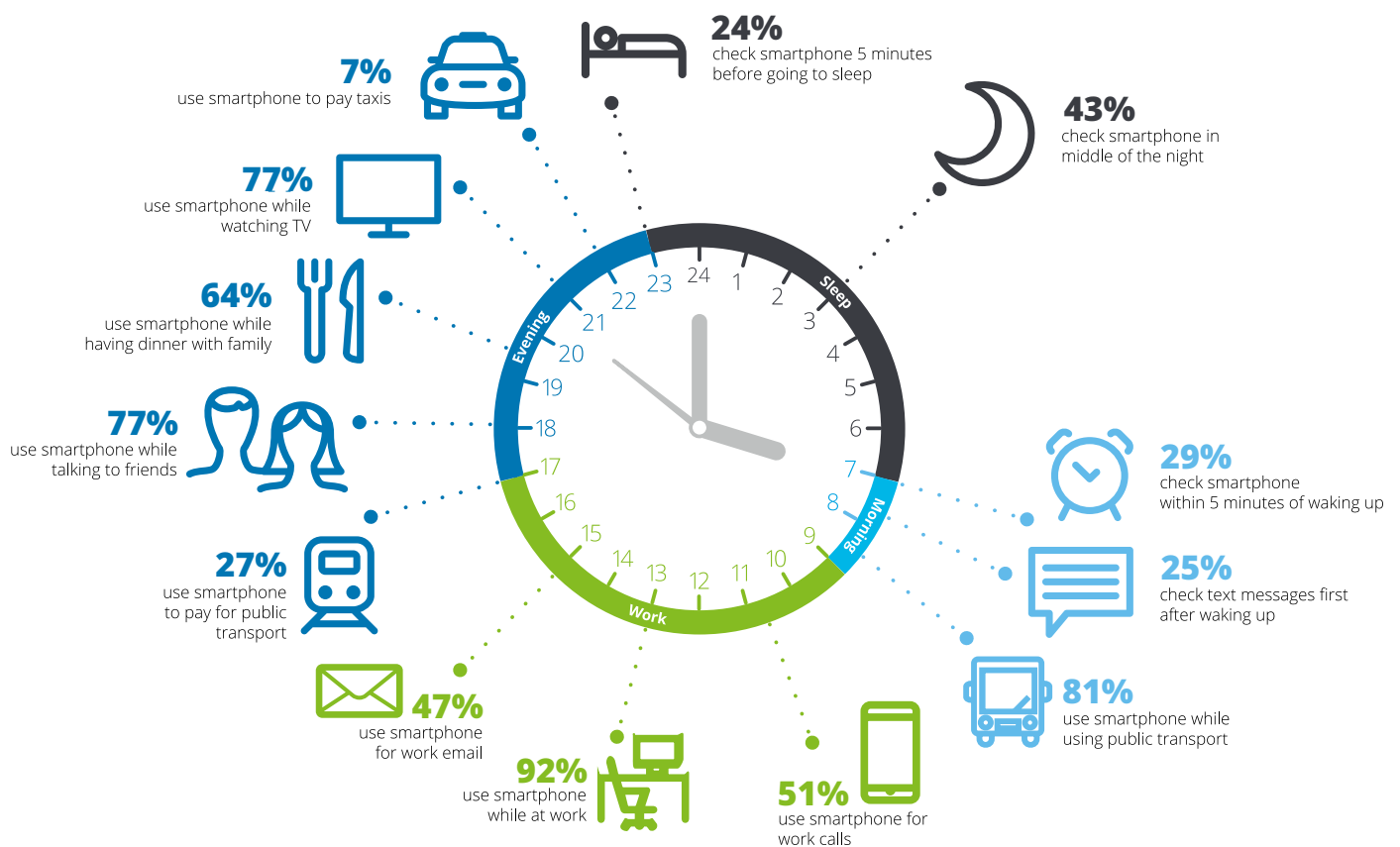Weighted base: Respondents who have a phone or smartphone (1893)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016

Among the Swedish respondents, 62 per cent use the smartphone "occasionally or more often" while using public transport. Only 7 per cent responded that they never use the smartphone while at work. Even when walking, shopping or, in some cases, crossing the road, many consumers use their smartphones. The smartphone has become such a valuable tool that it can assist or enhance the experience for the users in almost all activities of the day (see figure 2).

Even so, there are still many more potential benefits which the smartphones can help to further improve – for instance, only a tenth use their smartphones very often while out shopping. In the future, with mobile payments, the percentage of users using their phones for shopping will likely be higher.

Figure 2. A day in the life of a smartphone
Respondents for which a particular activity does not apply have been excluded from this analysis (e.g. respondents who do not work have not been asked if they use their phone at work)

7%
use smartphone to pay taxis

77%
use smartphone while watching TV

64%
use smartphone while having dinner with family

77%
use smartphone while talking to friends

27%
use smartphone to pay for public transport

47%
use smartphone for work email

92%
use smartphone while at work

51%
use smartphone for work calls

24%
check smartphone 5 minutes before going to sleep

43%
check smartphone in middle of the night

29%
check smartphone within 5 minutes of waking up

25%
check text messages first after waking up

81%
use smartphone while using public transport

Weighted base: Respondents who own or have access to a smartphone (1758)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016
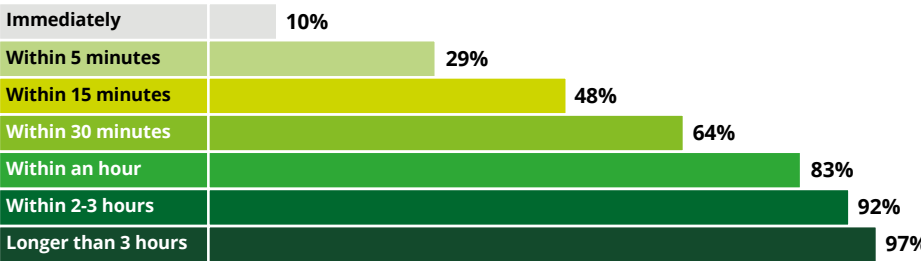
Waking up and falling asleep with our phones
While smartphones become more integrated in our daily lives, they also accompany us during a longer period of the day. A tenth of the Swedish smartphone owners instinctively reach for their phones as soon as they wake up – and not just to turn off their alarm. Almost a third (29%) reach for their phone within five minutes of waking, and almost half within a quarter of an hour (see figure 3).

Figure 3. Interval between waking up and checking smartphone (%)
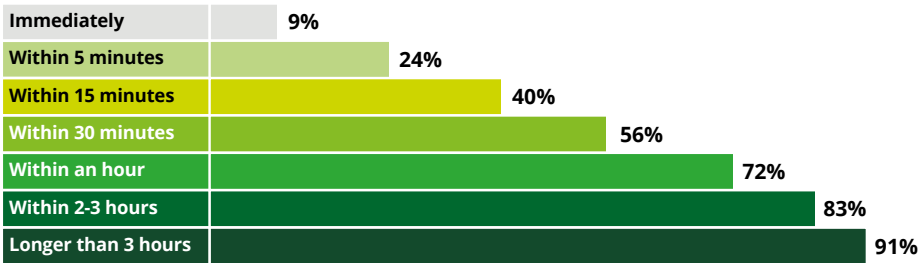Typically how long is the interval between waking up and looking at your phone for the first time?

Immediately	10%
Within 5 minutes	29%
Within 15 minutes	48%
Within 30 minutes	64%
Within an hour	83%
Within 2-3 hours	92%
Longer than 3 hours	97%

Weighted base: Respondents who have a phone or smartphone (1893)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016

A similar pattern takes place at night. More than half (56%) of the Swedish smartphone owners check their phones within 30 minutes of turning in for the night; 24 per cent check them five minutes before; and 9 per cent do so immediately before (see figure 4).

Figure 4. Interval between last check of smartphone and preparing to go to sleep (%)
At the end of the day, typically how long is the interval between you looking at your phone for the last time and preparing to sleep (not including setting the phone's alarm clock)?

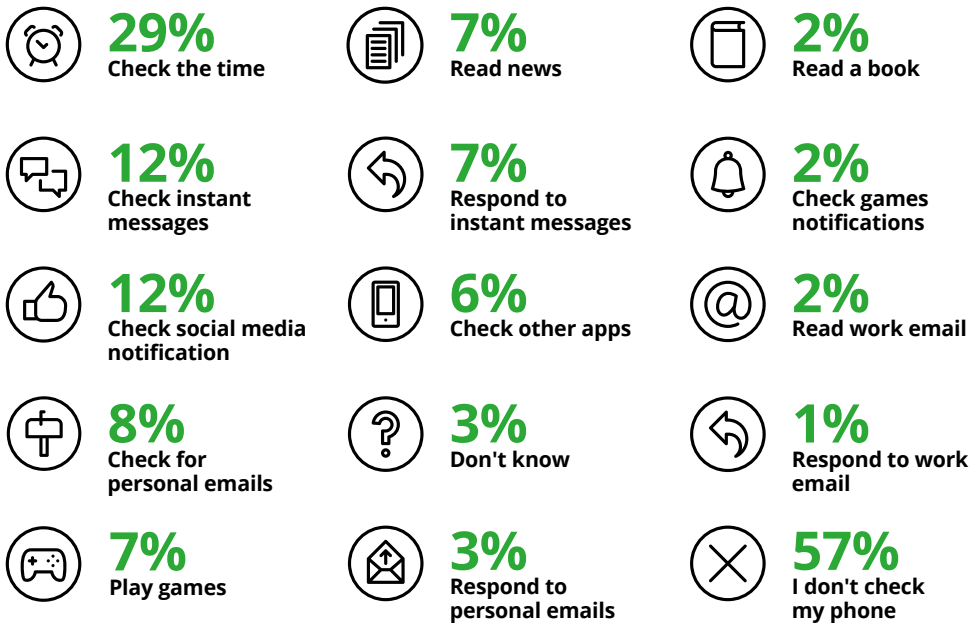|	
Immediately	9%
Within 5 minutes	24%
Within 15 minutes	40%
Within 30 minutes	56%
Within an hour	72%
Within 2-3 hours	83%
Longer than 3 hours	91%

Weighted base: Respondents who have a phone or smartphone (1893)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016

There is research that shows exposure to light, including that from a screen just before going to sleep, can confuse the brain into thinking it is still daytime, and inhibit the process of falling asleep. One study recommends that screens are turned off at least an hour before going to sleep. Our research, however, shows that only slightly more than a quarter of the smartphone owners do this. Even though smartphones help us throughout many activities, perhaps there are times when we have to learn to control our phones rather than letting them control us.

Half of the smartphone users are active during the night
As said, frequent usage of smartphones while awake is commonplace, but what of usage during sleeping hours? Almost a half (43%) of the Swedish respondents claimed to check their phones at night. Out of those who do check, a quarter checks for messages and social media respectively, and one out of six also responds to messages (see figure 5), which likely affects sleep quality.

Figure 5. Activities checked on smartphone in the middle of the night (%)
Which of the following activities do you do if you check your phone in the middle of the night?

29%
Check the time

7%
Read news

2%
Read a book

12%
Check instant messages

7%
Respond to instant messages

2%
Check games notifications

12%
Check social media notification

6%
Check other apps

2%
Read work email

8%
Check for personal emails

3%
Don't know

1%
Respond to work email

7%
Play games

3%
Respond to personal emails

57%
I don't check my phone

Nocturnal smartphone usage is concentrated to younger age groups (see figure 6). 73 per cent of all 18-24 year olds check their phones in the middle of the night. Almost a third out of these check their social media accounts or messages respectively, and more than a fifth respond to messages during the night. Some companies may even try to capitalize on this by pushing out notifications during the night, such as retail companies targeting young consumers or parents who may be awake browsing their phones. It is probably only a matter of time before more companies attempt to capitalize on this behaviour.

Figure 6. Nocturnal smartphone usage by age (%)
I check my phone during the night.
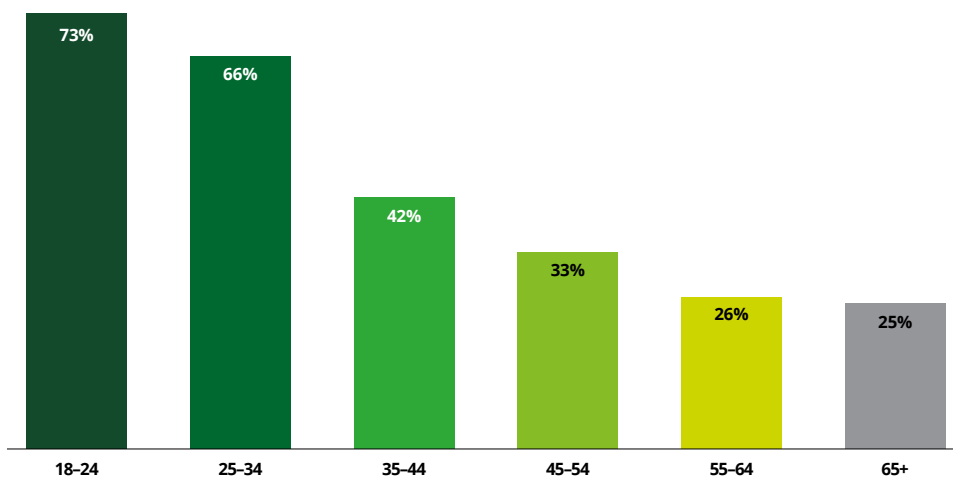
18–24	25–34	35–44	45–54	55–64	65+
73%	66%	42%	33%	26%	25%

Weighted base: Respondents who have a phone or smartphone (1893)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016
Note: The figures are calculated based on respondents having answered yes to doing any activity using their phone in the middle of the night

The death of voice calls

Today, it is still common to hear someone say "I will call you later". In the future, perhaps this phrase will change to "I will IM you later". Over the past few years, the Swedish consumers have continued to increasingly reject the normal voice calls in favour of other means of communication. In 2014, 81 per cent of the respondents claimed to make a standard voice call in any given week. In 2016, the rate had dropped to 72 per cent, while during the same time almost all other forms of communication had become more widespread.

Figure 7. Weekly usage of voice and data communication tools
Please state which, if any, you have used? - (At least once a week)
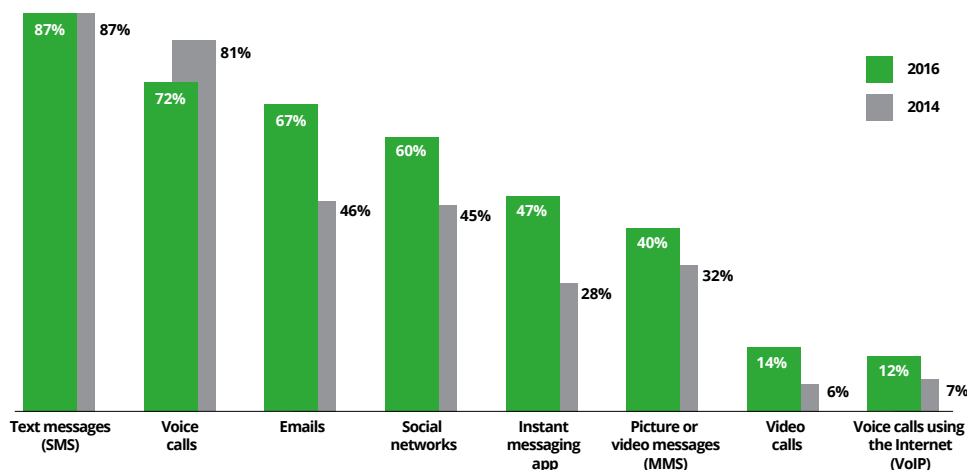
Weighted base: Respondents who have a phone or smartphone (1893)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey; May-Jun 2014, May-Jun 2016

What is clear is that the reach of each tool is rising in parallel with each other; they are not regarded as substitutes. Text messaging retains its status as one of the strongholds for communication with 87 per cent of the respondents using it. Meanwhile, the usage rate of instant messaging apps almost doubled over the past two years. Other tools for communication also grew significantly and increased their user base from two years ago, with emails growing by a half and social networks growing by a third.

While email may be considered by some as old-fashioned by digital standards, usage in Sweden still increased by 21 percentage points among all respondents over the last two years, which is a greater increase than that both for social networks and instant messaging. This means that email is still one of the most popular digital communications tools on the smartphone. The email's appeal lies in its universality: every smartphone includes an email app. The email format has changed little over the last few years, yet it remains a simple and useful way to send and receive communication quickly.

With the rise of IM apps, social network and email usage, many users become "data exclusives" who no longer make standard calls. This behaviour varies by age group and, perhaps not surprisingly, the usage of data is higher among the young than the old. Among 18-24 year olds, only 59 per cent make a standard call once per week. For 55-64 year olds, more than 73 per cent are still making standard calls every week.

The popularity of messaging, social networks and emails has been driven partly by their non-linearity. Conversations do not have to take place in real time; responses can be either rapid or deferred. By contrast, in a phone call, an immediate response is expected. It also enables for multi-tasking: it is much easier to send a brief IM while watching TV or a film than to make a call, which at times can be regarded as anti-social and disruptive.

"The usage rate of instant messaging apps almost doubled over the past two years."

Figure 8. Usage of different communication apps, by age group
Below is a list of apps which you may have on your mobile phone. Please state which ones you use.
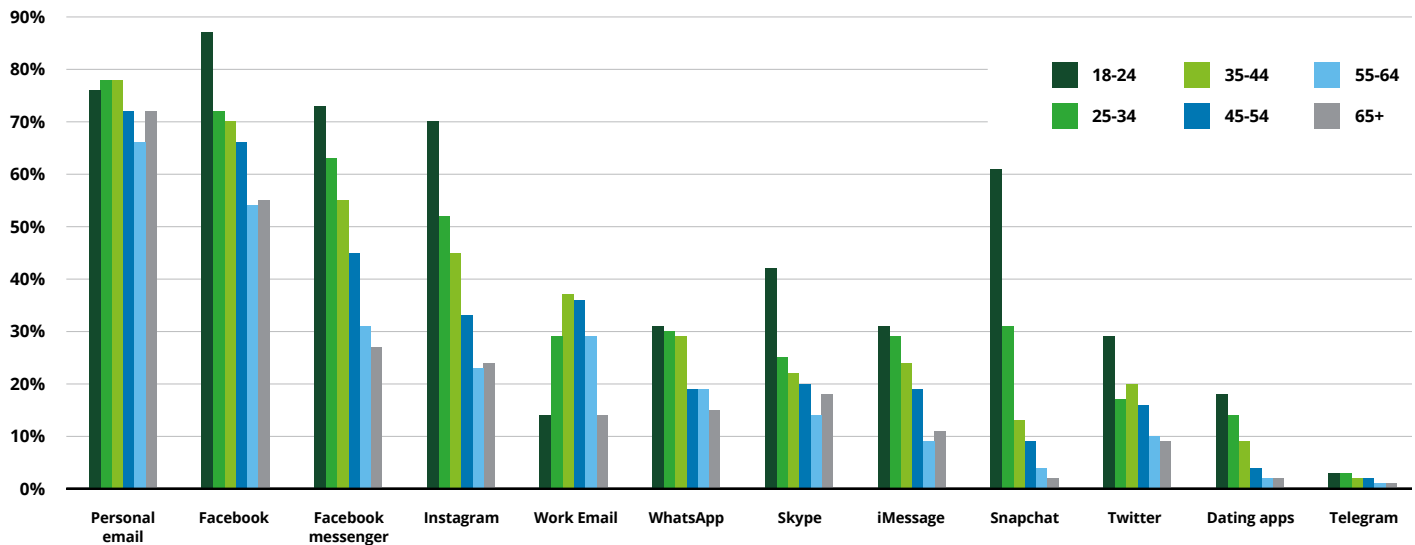
Weighted base: Respondents who use IM, social networks or emails (1647)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016

Many of the Swedish consumers access multiple IM applications, social networks and email services altogether. For example, 18-24 year olds are enthusiastic users of Facebook Messenger, WhatsApp, Instagram and Snapchat, among others.

Each app has its own characteristics: Snapchat's messages are typically ephemeral, whereas other services enable messages to be stored permanently. Snapchat also has the most demographically skewed usages, with 60 per cent of 18-24 year olds using it whereas less than 5 per cent of the users over 45 use it. Will this change over time? We don't know yet.

The next step: commercialization of messaging
As many of the above platforms now enjoy a significant user base, it is likely that they will become increasingly commercial over the coming years to cover the costs required to provide, upgrade, market and support these services. Emails and social networks have long experimented with targeted advertising, and have been very successful in some cases. In contrast, instant messaging platforms have, to date, mostly been free from advertising. As well

as showing a range of static and video display advertising, these platforms will likely be increasingly used for selective communications between suppliers and their customers to market and sell products or services directly.

One of the growing trends currently seen is also that of the so called "conversational commerce", which many of the leading brands – including Google, Facebook, Amazon, and Apple – are working on today. Whether through the use of voice assistant or smart chatbots, the new digital concierges are now opening up for integration with commercial services, allowing users to, for instance, locate and pay for taxi rides directly through the messaging apps.

The messaging platforms could also be increasingly used as a means of carrying payments. In other markets, these platforms are used extensively to send forms of money. In China, for example, over half a billion people effected 32 billion money transfers via a messaging platform during this year's Chinese New Year.

There is always the risk that advertisements and other such monetising activities may

be regarded as disruptive and intrusive. As such, some data communications platforms offer a subscription tier, others request donations and a few others offer in-app purchases for extra features.

Users are likely to balance these potential inconveniences against the benefits of being able to communicate with everyone, using a range of media from words to photos, from emoticons to GIFs, and at the time that best suits them.
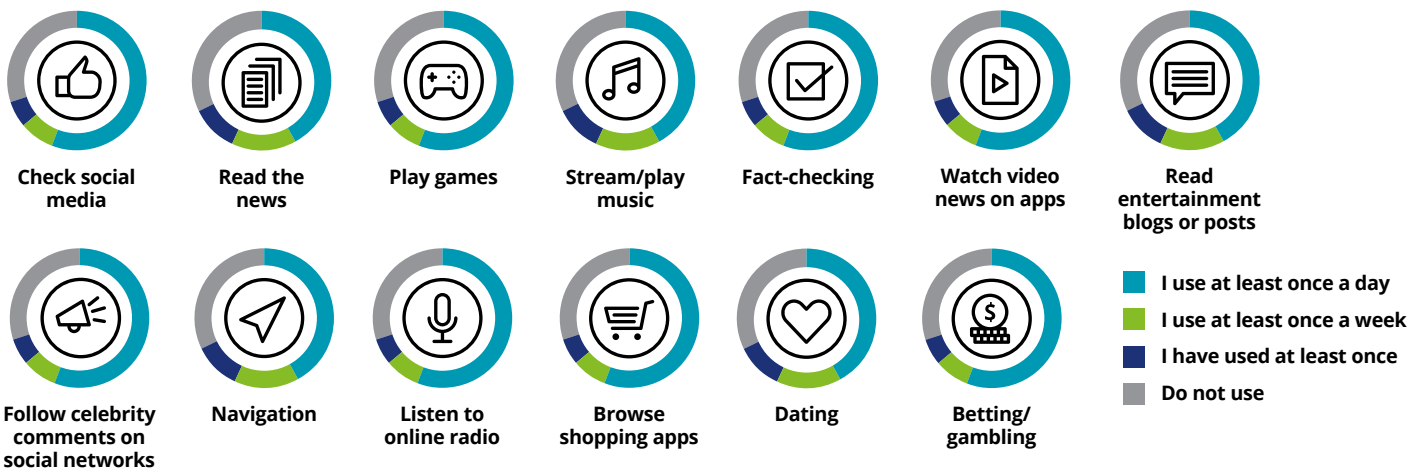
There's an app for that

The app is one of the most disruptive innovations of the decade and has been essential to the commercial success of the smartphone. Millions of apps are now available to Swedish smartphone users, with roughly a million just for games. There is an app for everything these days and they do everything from logging the users' workout sessions, to providing them with daily short comic videos to telling them everything they want to know about their pets. If there is an issue that anyone needs help with, there is probably an app to solve it.

With the huge surge of apps in recent years and the increased capabilities of the smartphone, what do the Swedish consumers actually use their phones for though?

Figure 9. Activities which the smartphone is used for and how often they are used
Which activities do you use your mobile phone to do?

| Check social media | Read the news | Play games | Stream/play music | Fact-checking | Watch video news on apps | Read entertainment blogs or posts |

| Follow celebrity comments on social networks | Navigation | Listen to online radio | Browse shopping apps | Dating | Betting/gambling |

- I use at least once a day
- I use at least once a week
- I have used at least once
- Do not use

Weighted base: Respondents who have a smartphone (1758). Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016

Despite the ever-growing plethora of apps, the majority of the Swedish respondents still spend most of the time on their phones checking social media. Perhaps this is not surprising, as social media in themselves are also starting to become platforms for other apps and functions (as mentioned above) . Following social media, some of the most common activities among the respondents are reading the news, playing games or listening to music.

Interestingly enough, 37 per cent of all respondents also claim they use the phone for fact-checking every week. Most debates, whether on cultural, historical or geographical topics, can nowadays be settled by a simple search on the phone.
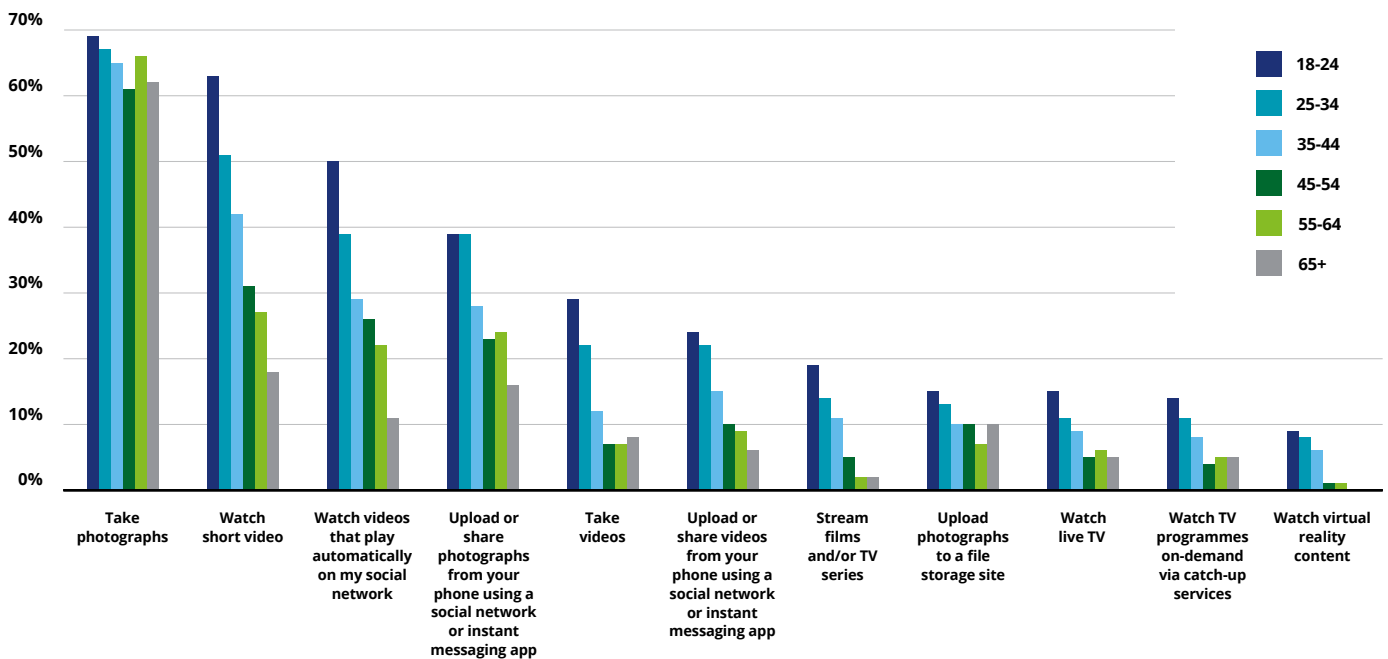
Point, shoot, and upload – photos everywhere
When buying a new phone, the average user today may look more to the camera specs of a phone than the processor speeds. Globally, the most popular camera today is the iPhone camera and around two trillion photos and images will be sent, posted, forwarded or backed up from a smartphone this year alone. An increasing amount of photos and videos are both shared and consumed on social media, indicating again that visibility through visual imagery on social media is becoming increasingly crucial for many companies.

Figure 10. Photo and video consumption and sharing by age
Which activities do you use your mobile phone to do? (Use at least once a week and once a day)

Legend:
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+

Categories (left to right): Take photographs; Watch short video; Watch videos that play automatically on my social network; Upload or share photographs from your phone using a social network or instant messaging app; Take videos; Upload or share videos from your phone using a social network or instant messaging app; Stream films and/or TV series; Upload photographs to a file storage site; Watch live TV; Watch TV programmes on-demand via catch-up services; Watch virtual reality content

Our survey shows that 64 per cent of the Swedish users in all age groups take photos at least once a week, with about a half of these taking photos daily. Photography, video recording and content sharing appears to also be driven by the network effect: the larger it becomes, the more valuable it is to its users. As the network of people who can receive and send photos or view videos increases, the more posts are made.

As photo taking and sharing becomes ever more prolific, the focus is starting to shift to video, which is likely to increasingly become a substitute for still photos. This can already be seen among the younger age groups where almost 63 per cent of all 18-24 year olds watch short videos online weekly (with the majority of these watching daily). Social media platforms further enable and encourage sharing of video content, and indeed users can now offer a profile video, rather than a mere photo.

Sharing videos through social media is also twice as likely among the 18-34 year olds compared to the 45-64 year olds. Streaming films or TV is almost four times

more likely among 18-24 year olds than among 45-64 year olds. Given this insight, perhaps we need not to forget to create interesting content that caters to the older smartphone users as well?

The struggle between "there's an app for it" and "I will look it up online"
The Swedish smartphone consumer spends the bulk of the time in apps and some of the most successful digital services are available via apps, ranging from social networks to ordering taxis . In the past eight years, apps have generated tens of billions of dollars in revenue via download sales and in-app payments. If smartphone users want to spend the vast majority of their time in apps and they are creating value, then shouldn't all companies create apps? The answer is not straight-forward.

Our survey shows that the majority of Swedish respondents have 30 or fewer apps installed on their phone (excluding the pre-installed ones). Overall, the willingness to download a large number of apps seems to be higher among young people. Considering that there are more
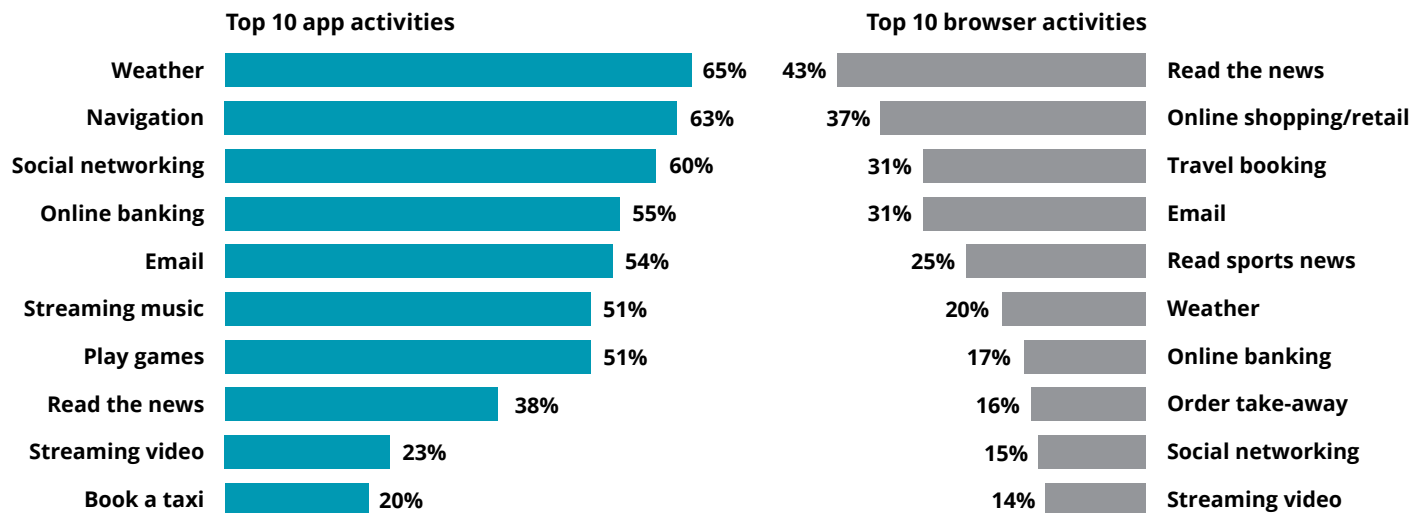
than 2 million apps available on both Apple's App Store and on Android, each app is competing with 100 000 others to obtain a precious spot on the smartphone user's home screen.

Overall, apps are more common for most activities, but they are not always the best approach and should not be considered a default. Apps shouldn't be created just for the purpose of having an app. In many instances – for example with games – an app is almost always the right way to go, but there are also many instances in which a browser is preferred. In some cases, forcing users to download an app might even deter potential customers.

Figure 11. Top 10 activities for apps and browsers
For each of the mobile activities below, would you typically use an app or a browser?

Top 10 app activities

Weather	65%
Navigation	63%
Social networking	60%
Online banking	55%
Email	54%
Streaming music	51%
Play games	51%
Read the news	38%
Streaming video	23%
Book a taxi	20%

Top 10 browser activities

43%	Read the news
37%	Online shopping/retail
31%	Travel booking
31%	Email
25%	Read sports news
20%	Weather
17%	Online banking
16%	Order take-away
15%	Social networking
14%	Streaming video

Weighted base: Respondents who have a phone or smartphone (1893)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016

When apps are preferred
Apps tend to be the most successful for processes or tasks that are completed on a regular basis. Amongst Swedish smartphone users, 65 per cent would typically use an app to check the weather, whereas only 20 per cent would choose the browser option. Checking the weather is a simple process and is able to employ smartphone data inputs such as GPS, forgoing the need to type in the name of a town or place. An app can meet this need with a single touch.

63 per cent of the Swedish smartphone owners use apps for navigation, which works well as an app since it is able to pull information contained within the calendar and contacts app on the phone. Similarly, checking social network feeds also only require simple instructions and is also something that the majority does on a regular basis.

When browsers are preferred
Using a browser can be more effective in other instances, typically when a task for which content is not uniform, such as shopping. For this to work smoothly on the smartphones, companies should create mobile-optimised websites. When the user searches for a product or a new outfit, a

search in a browser would return results from a range of retailers instead of just a single one. The finding that the Swedish users prefer to shop through browsers rather than apps should be of interest to any retailer, especially the ones pursuing omni-channel strategies.

Similar to shopping, when reading the news on the browser, the user can easily read from many different news sources with little effort. The user does not have to adapt to new app designs – or be limited by it – when they want to read something from a different news page. Reading the news, online shopping and travel booking are all activities where you may want to get input from many sources and are the three activities that are the most popular when using a mobile browser (only a minority are frequent travellers for whom an app may be preferable).

Immediacy is one of the key benefits of using a browser. In contrast to an app, when looking for information about a service that has never been used before, the user does not need to download anything new and can immediately see opening times, directions to a location or reviews for a product within seconds.

Smartphones are likely to remain multi-functional devices that will be used for a mix of regular and occasional tasks. For the former type of tasks, apps are likely to be the preferred approach. For the latter, the browser is likely to remain the most popular choice among users.

Looking into the future: no interfaces at all
Looking forward, there is also a growing trend towards reducing the number of user interfaces altogether to instead creating technology with "no interface" (or so called "No UI"), which would allow for interactions with machines to be more natural and intuitive . Examples for this include Amazon's Alexa, which allows users to access content and to purchase products using voice alone.

The previously mentioned conversational commerce is another example, showcasing that services are becoming more and more integrated, which in this case means that chat-bots are starting to integrate with IM apps. In the future, companies may have to focus more on providing their services through these channels rather than building their own digital interfaces – be it through an app or a browser.
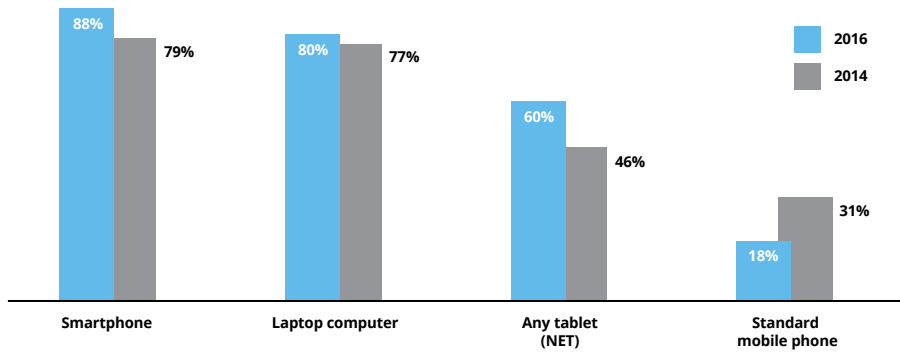
The era of connected things

In the 90s, which saw the revolution of the personal computer and the email, nearly every digital interaction and transaction was submitted through the desktop computer. Then came the laptop and the internet revolution in the 00's that allowed mobility, as we suddenly could work and keep in touch with our friends and colleagues from almost anywhere. The current decade has seen the rise of smartphones, tablets, wearables, cloud computing and big data analysis, and the smartphone has replaced the computer as our general purpose device. Some of the newest smartphones today are even faster than many of the latest laptops.

Figure 12. Market penetration by device and year
Which, if any, of the following devices do you own or have ready access to?

Legend: 2016, 2014

Device	2016	2014
Smartphone	88%	79%
Laptop computer	80%	77%
Any tablet (NET)	60%	46%
Standard mobile phone	18%	31%

Weighted base: All respondents (2007)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016

Figure 13. Devices we intend to purchase in the next 12 months
Which of the following devices, if any, are you likely to buy in the next 12 months?
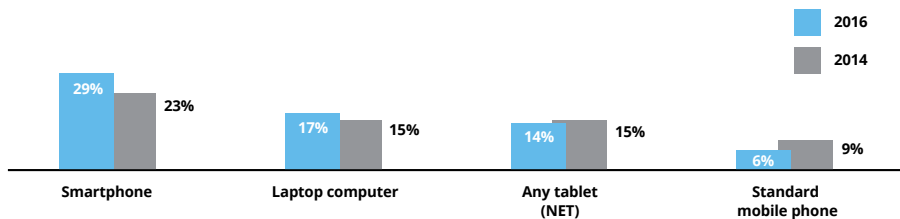
Legend: 2016, 2014

Device	2016	2014
Smartphone	29%	23%
Laptop computer	17%	15%
Any tablet (NET)	14%	15%
Standard mobile phone	6%	9%

Weighted base: All respondents (2007)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016

Over the past two years, the smartphone penetration has increased from 79 per cent to 88 per cent. We expect the penetration rate to increase by two to four percentage points in the next 12 months (our neighbours in Norway, for example, already have a penetration rate of 91%). Many people have upgraded from standard mobile phones to smartphones in the past two years, which is revealed by the decrease in the proportion that uses standard mobile phones. The smartphone market has also consolidated further over the past years and is today dominated by two players. 35 per cent of all respondents reported using a mobile phone by Apple as their main phone and another 34 per cent reported using a Samsung phone as their main phone.

The rising ownership of smartphones over the past couple of years, however, has not led to the abandonment of other devices.

Most notably, tablet usage has increased by 14 percentage points over the two years and 60 per cent of the Swedish consumers now own a tablet.

Internet of Things, when everything is connected
The Internet of Things (IoT) describes a vision where every object – from spin dryers to dog collars to traffic lights – is connected. This will enable an explosion of value creation similar to that experienced by our internet-enabled selves. With ubiquitous IoT devices, people will consume less energy as a result of smart thermostats and light bulbs. They will be better connected and more informed, thanks to smart watches. They will be safer, courtesy of smart security cameras and tracking wearables.
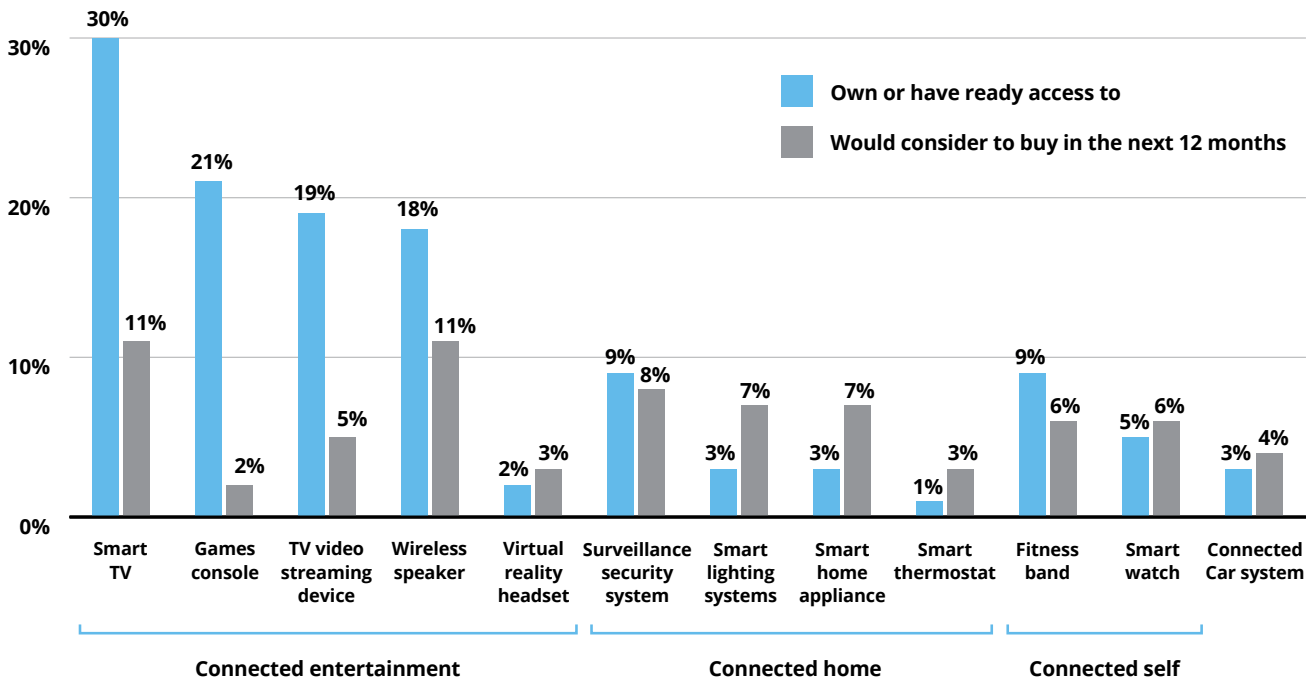
Although many IoT devices are already available on the market today, the demand

has appeared to be lacklustre so far. As with most technologies, predicting their occurrence is the easy part: the challenge is determining when they will be widely adopted by consumers. Arguably, that "when" should be soon: our society's technological readiness and the affordability of hardware means that we should be ready for the adoption of everyday IoT. The adoption of IoT-solutions have already become increasingly popular in B2B settings and are growing more so by the day. It is likely that the B2B market is already paving the way for an emerging mass adoption of IoT devices among the consumers in the near or middle-term future.

Figure 14. Market penetration of and intention to buy IoT-devices in the next 12 months

Which, if any, of the following devices do you own or have ready access to?
And which, if any, of the following would you consider purchasing in the next 12 months?

Legend:
- Own or have ready access to (blue)
- Would consider to buy in the next 12 months (grey)

Device	Own or have ready access to	Would consider to buy
Smart TV	30%	11%
Games console	21%	2%
TV video streaming device	19%	5%
Wireless speaker	18%	11%
Virtual reality headset	2%	3%
Surveillance security system	9%	8%
Smart lighting systems	3%	7%
Smart home appliance	3%	7%
Smart thermostat	1%	3%
Fitness band	9%	6%
Smart watch	5%	6%
Connected Car system	3%	4%

Connected entertainment: Smart TV, Games console, TV video streaming device, Wireless speaker, Virtual reality headset
Connected home: Surveillance security system, Smart lighting systems, Smart home appliance, Smart thermostat
Connected self: Fitness band, Smart watch, Connected Car system

Weighted base: All respondents (2007)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016

The four main categories of consumer IoT devices available today are connected entertainment, connected home, connected self and connected cars. Connected entertainment revolves around entertainment systems at home, such as smart TVs, game consoles and wireless speakers. Connected home devices are primarily developed to make our homes safer or more easily managed, and include smart surveillance systems and smart home appliances. The available virtual reality headsets are mostly used for entertainment purposes today, but will in the future venture out into other areas as well. Examples can already be found in, for instance, sales experience tools.

The category with the highest adoption rates so far is unquestionably the connected entertainment devices with 52 per cent of the respondents owning at least one such device (see figure 15). In contrast, only 13 per cent own a connected home device. Interest in purchasing a connected home device in the next 12 months, however, appears to be nearly the same as for a connected entertainment device. This is a strong indicator that consumers are becoming more and more attracted to connected home devices, which makes it relevant for brands to consider how they can be relevant also in those contexts. Perhaps in a few years from now, half of the Swedish households will also have connected home appliances that will be able to communicate with each other and greet you when you arrive at home.

Figure 15. Ownership of connected entertainment, home and self devices (%)
Question. Which, if any, of the following devices do you own or have ready access to?

Connected entertainment
Connected home
Connected self

	At least one device	At least two devices	At least three devices
Connected entertainment	52%	26%	11%
Connected home	13%	2%	0%
Connected self	13%	1%	n/a
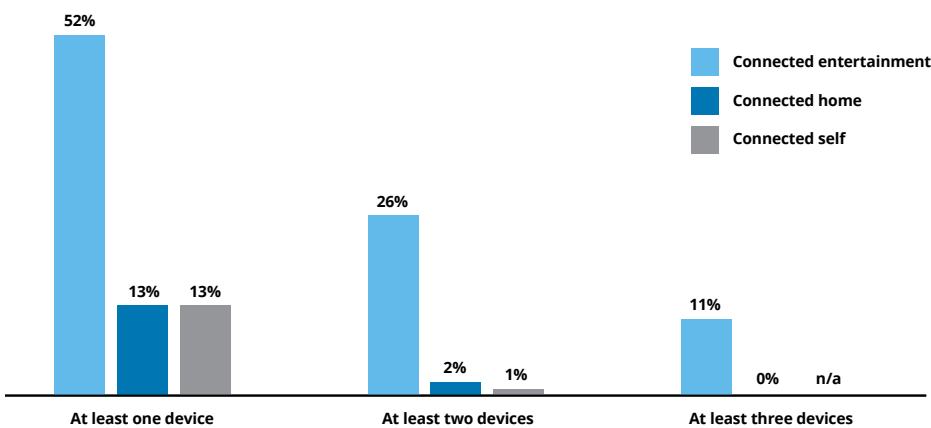
Note: Connected entertainment includes Smart TV, video streaming device, wireless audio device and game console; connected home include smart thermostat, smart lighting, home appliance and surveillance system; connected self includes only smartwatch and fitness band
Weighted base: All respondents (2007)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016

In comparison to the smartphone, the penetration of IoT devices is particularly low. Some types of IoT devices, whilst inherently useful, may simply not address mainstream need, thus limiting uptake. Some devices can also be significantly more expensive than those with no or inferior connectivity, as their prices might be elevated by the small addressable market. Some products may offer enhanced functionality, but require more steps to use, deterring potential purchasers. For example, smart lights offer complete control over home lighting, but programming it may be too complex for most home owners.

Another hindrance for IoT devices is that there currently is no standard for IoT-communication protocols. Instead, there is a "platform war" among several actors who are all trying to become the next standard for IoT devices. This makes consumers wary of investing too much in any IoT device if they are not certain it will be able to communicate with other devices in the future. A possible accelerator to the IoT-development, however, could be the voice controlled devices – such as Amazon's Alexa, Google Home – which are increasingly being marketed.
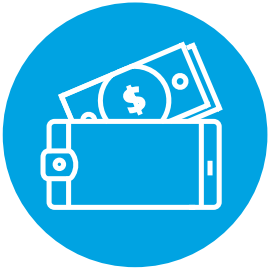
The mobile: your new wallet

Mobile payment solutions have for long been thought to be the next big thing. For almost as long as the smartphone revolution began, industry watchers and experts have anticipated that the smartphone would replace the traditional wallet. Mobile wallet solutions have certainly reached the market, but few have still used them today. These solutions are yet to have their big breakthrough among the Swedish consumers.

Figure 16. Frequency of different commercial activities with smartphone
Which activity do you use your mobile for and how often do you do so?
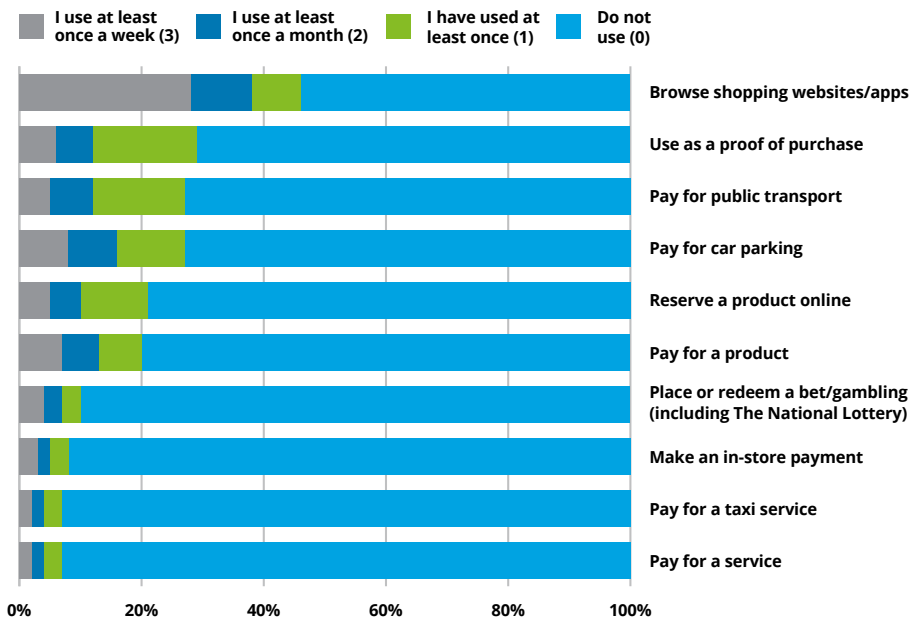
Weighted base: Respondents who have a phone or smartphone (1893)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey: May–Jun 2016

Currently, nearly half (46%) of the Swedish respondents have at some point used their phones for browsing shopping websites or apps. However, only 20 per cent of the respondents have ever used their phones to reserve products or to pay for products respectively. This is entirely understandable: while opening an app or browsing through a mobile-optimised website requires little dexterity, accurately entering the full data set required (address and credit card number) to make a first-time purchase is still often cumbersome and time consuming. As the payment process has started to become compacted into a single click or a single fingerprint reading in other markets, we also expect that the volume of payments conducted on the phone in Sweden will increase in the future.

Mobile in-store payments: from niche to norm?
While there has been much hype around mobile in-store payments – which has seen some success in international markets – their adoption in Sweden has been comparably slow. Only 9 per cent of the Swedish respondents have ever made an in-store payment with their phones.

The main reason for the slow adoption is that there simply are not many retailers who support the infrastructure needed to enable in-store payments, such as NFC readers.

Nevertheless, there are many benefits with mobile in-store payments that are likely to become more apparent as more enabling infrastructure is rolled out. Some of the main benefits with mobile in-store payments include that the payment process will be both easier and more secure. The payment process could be reduced to just pressing the smartphone button (enabling the fingerprint reader) and placing the phone on the counter (enabling the NFC reader). Done. No need for entering PINs or fumbling with physical cards. Even all the numerous loyalty cards may well be integrated into the phone.

In the future, in-store payments may also enable "zero-interaction" retail experiences, where consumers could walk into a store, scan a barcode, pick up the product they want, pay with their phone and walk out again without ever having to go anywhere near a payment counter.

23

The main reason for not using mobile in-store payments for the respondents was that they did not see any benefits with it. Given that few may have had the opportunity to try functional in-store payment systems in Sweden, this is not surprising. The younger respondents were much more positive towards mobile in-store payments than the older respondents. Whereas only 38 per cent of the 18-24 year olds said they did not see any benefits with in-store payments, as much as 56 per cent among the 55+ year olds thought the same. With time though, it is likely that more consumers from all age groups will give it a try once it becomes more readily available and user-friendly. The question then is what is likely to increase first: the demand from the consumers or the enabling technology from the retailers?

Another reason for not using in-store payments was security concerns, which was stated by 18 per cent of the respondents. These concerns are likely due to unfamiliarity with mobile payments, as they may well be one of the most secure ways to pay in-store. When making a mobile payment, the phone transmits a one-off token for authorizing, which

means that the payment card number cannot be compromised. In the case when a fingerprint reader is used, this also provides an additional layer of security compared to credit cards as the fingerprint is much harder to steal than the PIN-code (which can be stolen simply through observation).

With an increasing number of banks in Sweden providing contactless credit cards, this could also be the first step towards enabling mobile in-store payments. As more customers become accustomed to making payments without signing or entering a PIN-code, replacing the credit card with a smartphone will also likely be a smaller step to take.

Swedes vs Europeans: Receptiveness to mobile commerce
Despite a lack of adoption of mobile in-store payments, the Swedish consumers are highly receptive to using the phone for other forms of mobile commerce. In comparison to the average European user, the Swedish respondents are much more likely to use their phone to pay their bills and, especially, to use it for transferring money to friends and family.

Figure 17. Barriers for adopting in-store payments via mobile phones
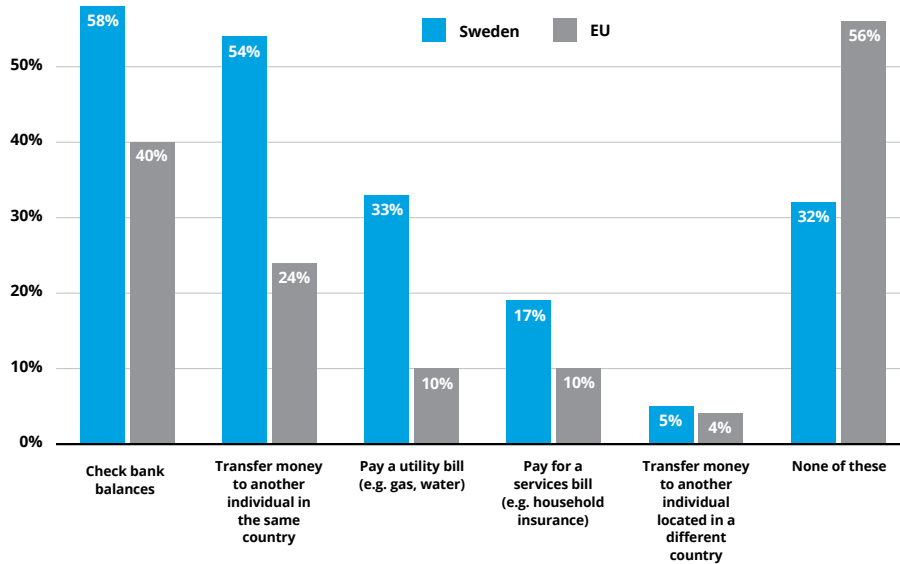What are the main reasons why you don't use your phone to make payments in-store?
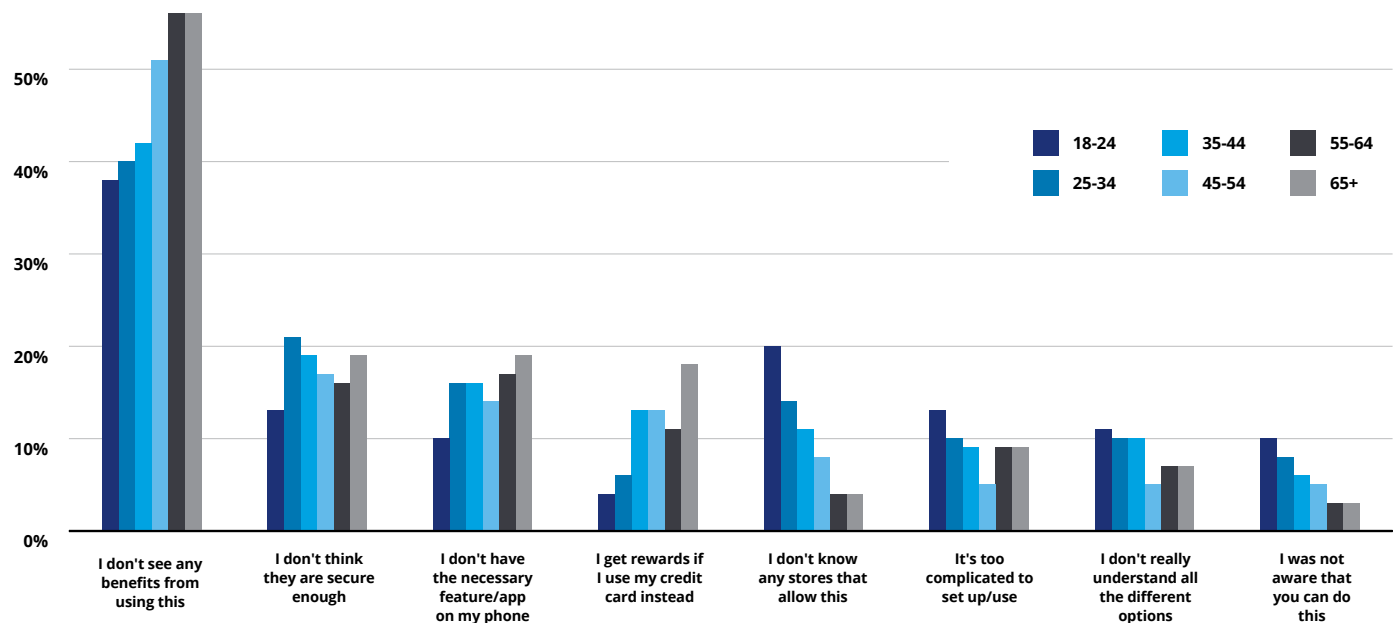
Weighted base: Respondents who have not used their phone to make an in-store purchase (1729)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016

Figure 18. Usage of mobile transactions or payments
In the last 3 months, have you used your phone to do any of the below?

Weighted base: Respondents who have a phone or smartphone (1893)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey: May–Jun 2016

The majority of the Swedish respondents (54%) had used their phones to transfer money to another individual during the last three months, which is more than double the percentage seen in other surveyed European countries. The main reason for the high adoption of this activity among the Swedes is the mobile transaction app Swish, which is unique to the Swedish and Scandinavian markets. Out of the 54 per cent who stated that they had transferred money to another individual, 84 per cent of these had used an app that links their mobile number to their bank account (which Swish does), which essentially implies that around 45 per cent of the respondents have used Swish within the last three months.

Although Swish has become highly popular to use among individuals, there are still many opportunities to use it for corporate purposes, as usage of Swish in that area so far has been limited. Especially with the lack of in-store payment solutions, Swish proves to be an interesting service for many companies to explore further. With the dominant position that Swish currently has on the Swedish market, it may also be a barrier for competing solutions such as Apple Pay or Android Pay.

There is a large receptiveness among Swedes to use their phones for personal finance activities, as evidenced by the survey results. Looking forward, changes in regulatory frameworks within the next few years will also lead to an increase in companies who aim at providing personal finance solutions to consumers.
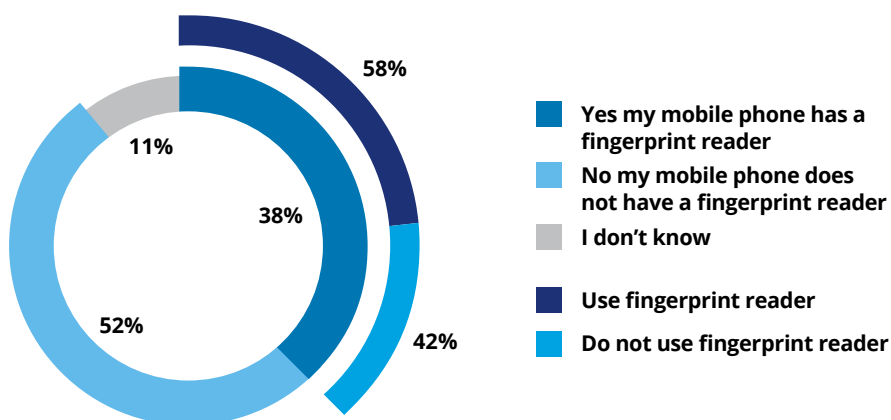
The rise of the fingerprint and information sharing

Thousands of years ago, the citizens of Ancient Babylon imprinted their fingerprints into clay tablets to authenticate transactions. Today, the problem of authentication remains and a multitude of difficult passwords are causing more and more trouble for many. To solve this, fingerprint is now being revived – and it is quickly being adopted.

Figure 19. Ownership of phones with fingerprint readers, usage of fingerprint readers

Does your mobile phone have a fingerprint reader?

58%

11%

38%

52%

42%

■ **Yes my mobile phone has a fingerprint reader**

■ **No my mobile phone does not have a fingerprint reader**

■ **I don't know**

■ **Use fingerprint reader**

■ **Do not use fingerprint reader**

Three years ago hardly anyone had a device with fingerprint reading as they were not incorporated in the latest smartphones. Today, 38 per cent of all the Swedish smartphone users have it and, out of these, the majority are using it. Even more users are expected to start using fingerprint readers in the coming years, as they start to become available on both premium and mid-range smartphone models. Soon, having a fingerprint reader-enabled smartphone will be the new norm.

With the base of reader-equipped phones increasing, the amount of apps and websites that support fingerprint readers will also grow significantly. One of the key applications for fingerprint reading is likely to be mobile payments, since it can be used to authenticate transactions or provide information instantly. Fingerprints may also come to be used for other more civic applications, such as submitting online tax returns or even voting. In the future, everything could be available at one's fingertips.

The rise of biometrics and the fallibility of passwords

In addition to the fingerprint reader, there are also other biometrics sensors that could be used as password substitutes. However, none of these are even close of gaining the same adoption rates as the fingerprint reader (see figure 20).
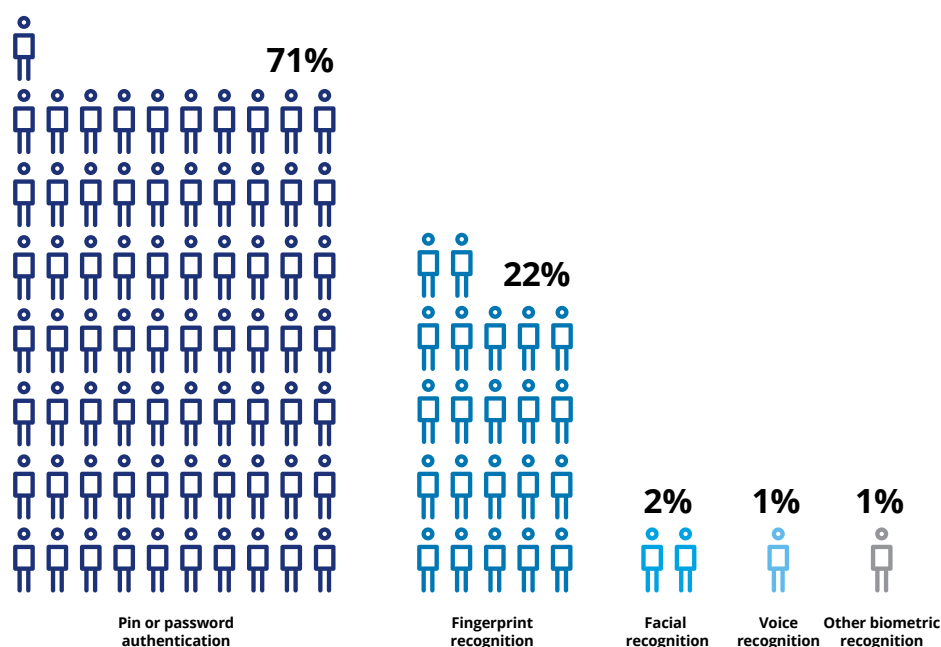
71%

22%

2%   1%   1%

Pin or password authentication   **Fingerprint recognition**   **Facial recognition**   **Voice recognition**   **Other biometric recognition**

Figure 20. Usage of different authentication types on smartphones (%)
Which, if any, of the methods listed abow have you used to identify yourself when unlocking your phone, authorising mobile payments or other transactions?

Weighted base: Respondents who have a phone or smartphone (1893)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016

22 per cent of the Swedish respondents have tried fingerprint recognition whereas a mere 2 per cent have tried facial recognition. Hardly any respondents had tried voice recognition or other biometric recognitions. Fingerprint authentication is fast, less subject to ambient conditions and inconspicuous. By contrast, voice recognition may not work when used in a noisy area and may be distracting when used in the company of friends or colleagues. Facial recognition requires similar lighting conditions to those in which the reference images were taken; and if not, false negatives are likely. The main method for identification on the smartphone is still to use the pin or password authentication.

In the future, multiple biometric and other data generated by smartphones are likely to be combined to generate ever more secure transactions. Location information can be used as an input, as can one's

gait. A request to make a significant bank transfer payment in a location in which the phone has never previously been used could trigger a phone call to authenticate the user, and this latter step could be accomplished via voice recognition.

Data sharing: Willingness and awareness

In a world where increasing amounts of data are both gathered and transmitted digitally, data sharing and privacy will become a crucial area for companies to manage in the future (if not already). The consumers' willingness to share information generally depends on who they share it with and to what extent they can choose what information is shared.

31 per cent of all mobile phone owners claimed they never share any forms of personal information. Given that data is collected as soon as the user turns on their phone, browser, social media account or almost all apps, a smartphone user is essentially always sharing personal data.

Figure 21. Swedes' willingness to share usage information
To what extent, if at all, are you willing to share the usage information generated by a device that you own?
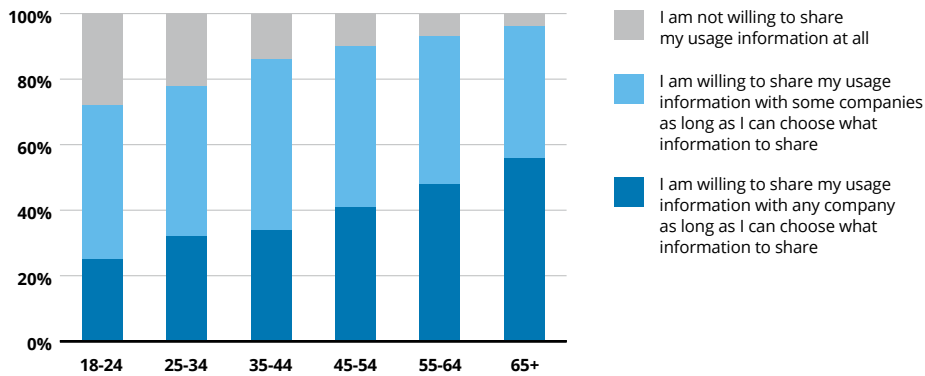
Note: Respondents who replied "don't know" were excluded from the above results.
Weighted base: Respondents who are interested in smart devices (1300)

The majority of the respondents claimed to be willing to share their usage information with certain companies as long as they could choose what type of information that was being shared. The younger the respondent, the more willing he or she is to share their information. Among the 18-24 year olds, only 25 per cent were not willing to share

any information at all, whereas the same figure for 55+ year olds was 52 per cent. Certain areas are heavily dependent on what usage data the companies are able to gather and harness. One of those is e-commerce, where higher data availability and shared usage information generated by different devices unlock new possibilities to more significantly and more accurately target various customer segments. For these reasons, many data collecting companies are willing to obtain many kinds of different data, such as location, demographic background, interests or usage patterns. As of now, there is likely a large discrepancy between the willingness among the respondents to share data and their awareness of how much data they actually are already sharing with corporations.

Figure 22. Awareness of sharing usage information amongst Swedish adults
As far of you are aware, which, if any of the following types of information do you already share with at least one organisation online?
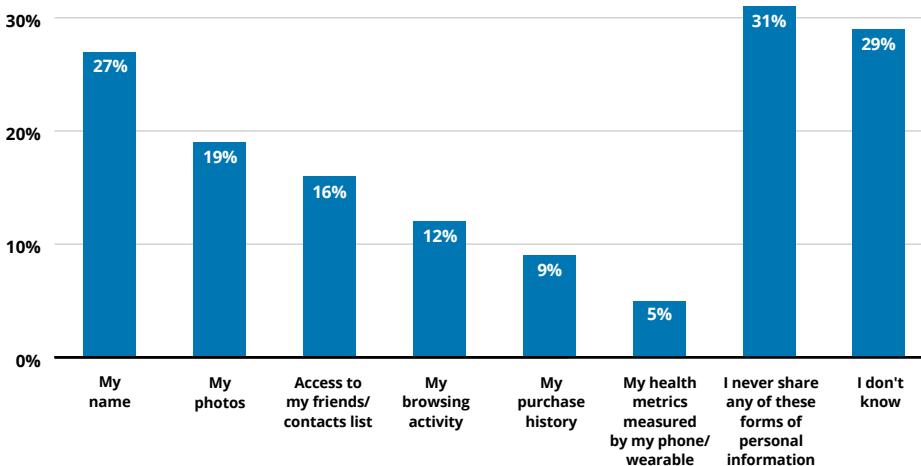
Weighted base: Respondents who have a phone or smartphone (1893)
Source: Swedish edition, Deloitte Global Mobile Consumer Survey, May-Jun 2016

31 per cent of all mobile phone owners claimed they never share any forms of personal information. Given that data is collected as soon as the user turns on their phone, browser, social media account or almost all apps, a smartphone user is essentially always sharing personal data. Furthermore, only 27 per cent of the

respondents claimed to have shared their names with at least one organization online, despite 68 per cent of the respondents having stated that they have used Facebook.

In general, the willingness to share information among the Swedish consumers is fairly high, and in particular among younger users and when they are allowed to specify what data is shared. However, it seems that a large portion of the Swedish users are also sharing information to a much greater extent than they are aware of.

Currently, many companies are enjoying this unawareness among the consumers, which makes data gathering for the companies significantly easier. In the future, data privacy regulation will become stricter and scepticism is likely to increase among consumers, which means that companies may well have to find more innovative ways to access and make use of personal data.

Endnotes

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About the research
& contacts

The Swedish data cut is part of Deloitte's Global Mobile Consumer Survey, a multi-country study of mobile phone users around the world. The 2016 study comprises of 53,000 respondents across 31 countries and five continents.

Data cited in this report are based on a nationally representative sample of 2,000 Swedish consumers aged 18-75. The sample follows a country specific quota on age, gender, region, working and socio-economic status. Fieldwork took place during May to June 2016 and was carried out online by Ipsos MORI, an independent research firm, based on a question set provided by Deloitte.

This brief report provides a snapshot of some of the insights that the survey has revealed. Additional analysis such as:

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smartphone purchase channel, 4G adoption and usage, mobile advertising, reasons for joining leaving mobile operators, attitudes towards triple/quad play, usage of tablets, and usage of communication services such as instant messaging, SMS and social networks are available upon request.

Results for other countries are also available upon request.

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