



**TeliaSonera**  
International Carrier

# THE RISE OF ANYWHEREIZATION DEVICES AND DESIRES

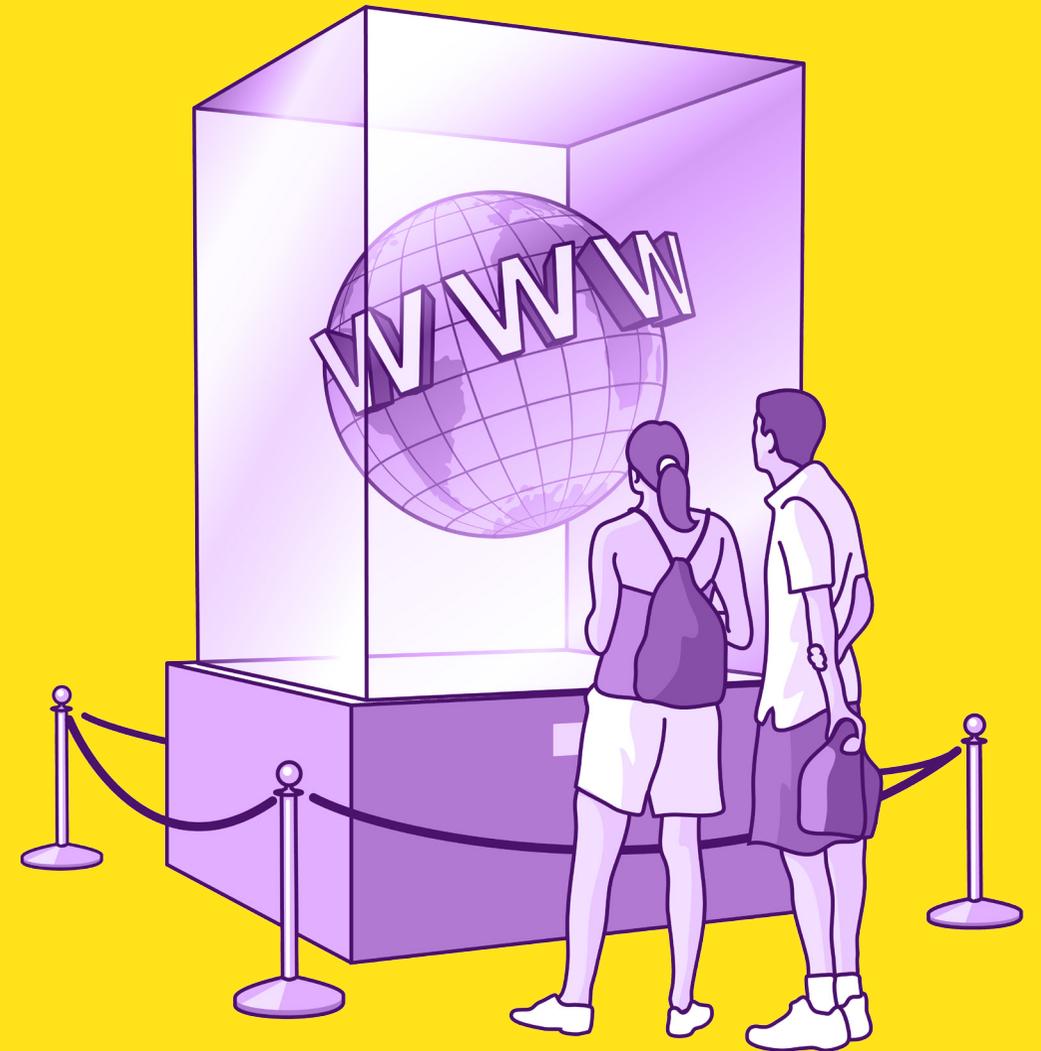
Always-on connectivity is eliminating the gap between here and there. We call this trend Anywhereization. And it's changing the way we do everything.

The year was 1991. A year of transformation and new possibilities, a year that changed everything. The Soviet Union came to an end and Boris Yeltsin became Russia's first democratically elected president. Nirvana released Nevermind and brought grunge to the masses. The internet became available to everyone, and the first ever GSM call was made.

The last two milestones are especially poignant for us since we were instrumental in the advancement of both. More than two decades later, these innovations have fully converged and are now the driving force behind a trend we call Anywhereization.

# THE START OF ANY- WHERE

ANYWHEREIZATION STARTED  
IN 1991 WHEN GSM WENT LIVE  
AND THE INTERNET BECAME  
OPEN TO EVERYONE.



"Anywhereization is not just a technological phenomenon," says Robert Timothy, Segment Marketing Manager at TeliaSonera International Carrier. "We are witnessing the demise of distance. Our shopping habits, entertainment and even relationships have become truly global. With increasing reliance on the cloud, and in a world where @ and # are hard currency, ubiquitous connectivity is no longer a luxury – even at basecamp on Mount Everest, which we connected to our mobile network already in 2010."

Before GSM, mobile telephony was a wild proliferation of analogue standards and protocols. This meant you could never be quite sure whether your phone would work on another network. GSM brought consistency and launched mobile phones into the digital era, paving the way for truly global mobile communication.

The seed was sown back in 1991, and since then, the internet has expanded beyond recognition. The mobile phone has evolved, reinvented itself, coalesced with the PC and spawned a generation of new devices that are neither phones nor computers. These devices have one thing in common – they are built around internet connectivity in a way that computers never were. An important shift has taken place. Previously, your device enabled you to get online, today, quite simply, you are online.

# BRINGING IT ALL TOGETHER

**3G IS REACHING NEW HEIGHTS.  
IN 2011, A BRITISH CLIMBER SENT  
THE FIRST TWEET FROM THE  
SUMMIT OF MOUNT EVEREST.**



# BILLIONS

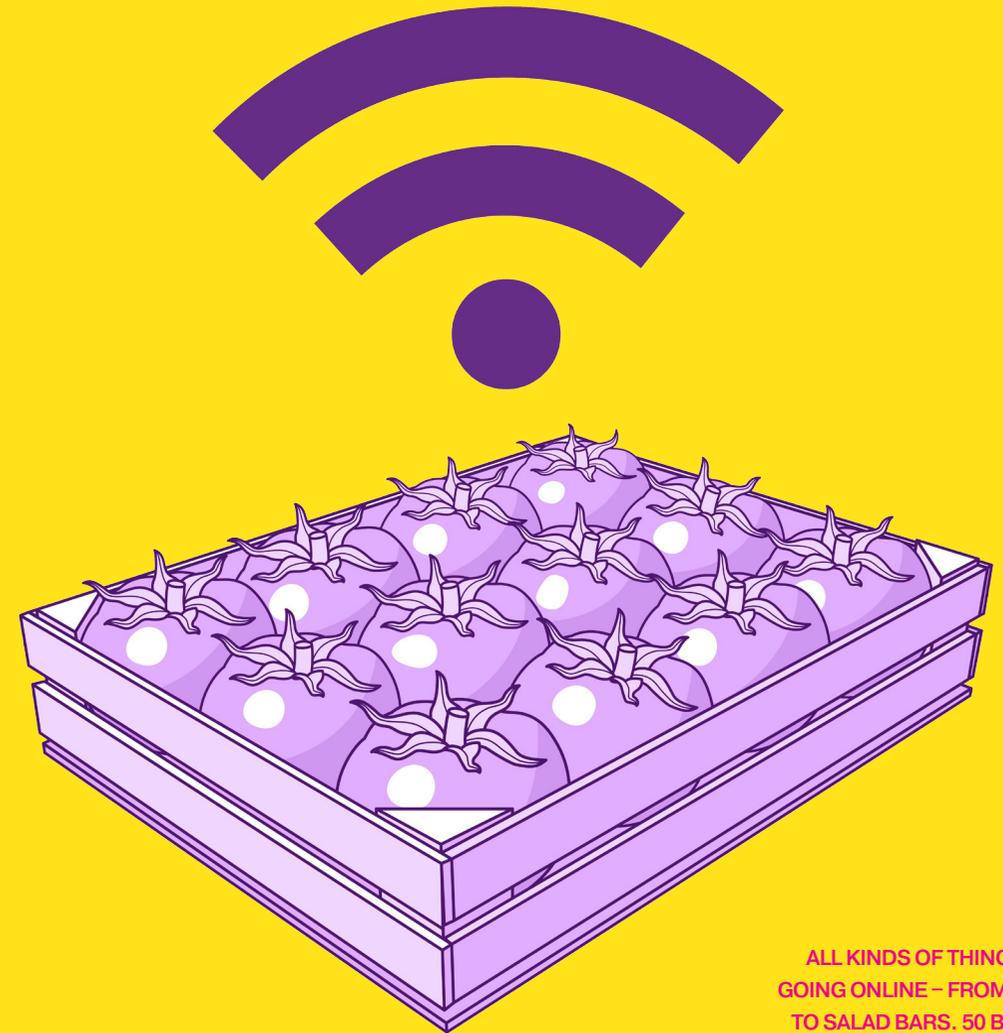
The mobile device revolution is an important cornerstone of Anywhereization. Mary Meeker's 2012 Internet Trends report\* highlights a dramatic increase in both smartphone and tablet adoption. Global smartphone use grew 42% in 2012. In the US, 29% of adults now own a tablet or e-reader, up from 2% in 2009.

# OF

While smartphones and tablets dominate, all manner of other devices are also coming online, including TVs, printers, hi-fi systems, picture frames, domestic heating systems and bathroom scales. It is even possible to buy a car with a built-in local area network and internet connection.

# DEVICES

\*[www.slideshare.net/kleinerperkins/2012-kpcb-internet-trends-year-end-update](http://www.slideshare.net/kleinerperkins/2012-kpcb-internet-trends-year-end-update)



ALL KINDS OF THINGS ARE GOING ONLINE – FROM CARS TO SALAD BARS. 50 BILLION DEVICES, OR MORE, COULD BE CONNECTED BY 2020.

Where there are devices, there is data. And data volumes are exploding. Cisco's Visual Networking Index\* predicts that global IP traffic will increase fivefold over the next few years, and over 1 zettabyte (1 billion terabytes) of data will be transported across global networks by the end of 2016. If that's hard to comprehend, imagine the gigabyte equivalent of all movies ever made crossing the internet every three minutes.

This comparison is even more pertinent considering that video will continue to be the major driver for internet traffic, in ever increasing volumes. By 2016, Cisco forecasts that 1.2 million minutes of video content will cross the internet every second. To put this in proportion, watching all the video that traverses the internet

during one month in 2016 would take you more than 6 million years.

Naturally, there are implications for the telecoms industry. Robert Timothy of TeliaSonera International Carrier says: "In the past, telecommunications meant predictability and control. Today, we don't necessarily know when, or from where, traffic will come. Every month we deliver 1 exabyte of data to more than 340 million broadband subscribers within one network hop. With growing reliance on the cloud, and in a world where online presence is no longer simply 'nice to have', we need to do it well."

# CROSSING THE ZETTABYTE THRESHOLD

\*[www.cisco.com/en/US/netsol/ns827/networking\\_solutions\\_sub\\_solution.html](http://www.cisco.com/en/US/netsol/ns827/networking_solutions_sub_solution.html)

\*\*[www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/VNI\\_Hyperconnectivity\\_WP.html](http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/VNI_Hyperconnectivity_WP.html)

ANYWHEREIZATION MEANS LOTS OF DATA. IN 2016, 6 MILLION YEARS OF VIDEO WILL CROSS THE INTERNET EACH MONTH.



According to Mary Meeker, these developments herald a new era. An era characterized by a stunning magnitude of change driven by unprecedented global technology innovation. We will have to reimagine most aspects of our lives, in a world of fearless and connected entrepreneurs and consumers. A world where consumers can get what they want whenever they want it, and entrepreneurs have plug-and-play access to everything they need for an effective and truly global marketplace.

We will move, Meeker predicts, from an asset-heavy to an asset-light lifestyle, using innovative services to pay for what we use, rather than simply owning expensive assets. This model, implemented already by Spotify for music and Amazon for e-books, will become ubiquitous, transforming everything from the way we manage

our finances, to how we go on vacation or get our lawn mowed. There are already smartphone-based services that turn anyone's spare room into a hotel alternative\*, enable on-demand car sharing between neighbors\*\*, and give access to diverse domestic services such as grocery shopping and laundry\*\*\*.

This is the era of Anywhereization. And it's just beginning.

**This is the era of  
Anywhereization.  
And it's just  
beginning.**

# REIMAGINING OUR WORLD

\*[www.airbnb.com](http://www.airbnb.com)

\*\*[www.getaround.com](http://www.getaround.com)

\*\*\*[www.taskrabbit.com](http://www.taskrabbit.com)

**ANYWHEREIZATION IS DRIVING  
US TOWARDS AN ASSET-LIGHT  
LIFESTYLE. NOW THE LIBRARY  
COMES TO YOU.**



Another key aspect of Anywhereization is the advent of the Internet of Things (IoT)\* and machine-to-machine communication (M2M). John Humphreys of cloud management software company Egenera outlines in Forbes how the Internet of Things will radically alter our world\*\*. He likens the IoT to a nervous system for the planet.

In remote areas of Africa, patients often need to travel long distances for medication. Imagine if they could simply get it from a vending machine. Facial recognition could ensure the right medicine is dispensed to the right patient. And what if the same machine could dispense cash? A partnership between a bank and a hospital makes a lot of sense. Cash and medicine are both high-value items with similar security and resupply requirements. One machine, two sets of independent functions. Welcome to the new world of M2M.

The challenge for carriers lies in supporting converging services. Delivering video, voice and data over a single network to meet diverse and constantly evolving needs. And doing so with absolute reliability. Because a life-saving vending machine can never be “Out of stock”.

# SENSING THE FUTURE

\*[www.en.wikipedia.org/wiki/Internet\\_of\\_Things](http://www.en.wikipedia.org/wiki/Internet_of_Things)

\*\*[www.forbes.com/sites/ciocentral/2012/12/17/how-the-internet-of-things-will-change-almost-everything](http://www.forbes.com/sites/ciocentral/2012/12/17/how-the-internet-of-things-will-change-almost-everything)



ANYWHEREIZATION NEVER  
STOPS. NEITHER CAN THE  
NETWORK. EVERYTHING  
MUST BE DEPENDABLE,  
EVERY SECOND OF EVERY  
HOUR OF EVERY DAY.

# THE NETWORK IS KING

Networks will play a central role in everything that happens in the Anywhereized future, which will be about data, capacity and speed. Robert Timothy of TeliaSonera International Carrier points to an Anywhereization “fire triangle” of mobile access, integrated mobile devices and sufficient internet bandwidth. “Fiber assets, a short upgrade path and end-to-end network control ensure consistent content delivery. Together with Infinera, we carried out the world’s first terabit optical transmission based on 500 Gb/s super-channels and continue to expand our network to meet the demand for content anywhere and not just somewhere.”

*“The future is already here – it’s just not evenly distributed.”*

Science fiction writer William Gibson wrote these prophetic words back in 2003. The future is unquestionably here. And we’re working on the second part.

**ANYWHEREIZATION  
DEPENDS ON A MASSIVE  
INFRASTRUCTURE. BUT THE  
ELECTRONS THE INTERNET  
CARRIES WEIGH ABOUT THE  
SAME AS A STRAWBERRY.**

