Shaping a digital future

Human evolution is a story of era-defining leaps in the role technology plays in our lives. Now is the time of the Fourth Industrial Revolution.

Small steps towards a big vision

The utopian ideal is often seen as naive – wishful thinking in the face of the inevitability of our eventual downfall. But that's a mistake.

Our vision of a better future is informed by science, data and real-world and virtual technologies that will come together (and already are with the advent of the Fourth Industrial Revolution) to create new opportunities, jobs and industries across every imaginable sector and foster prosperity for anyone who wants to be involved.
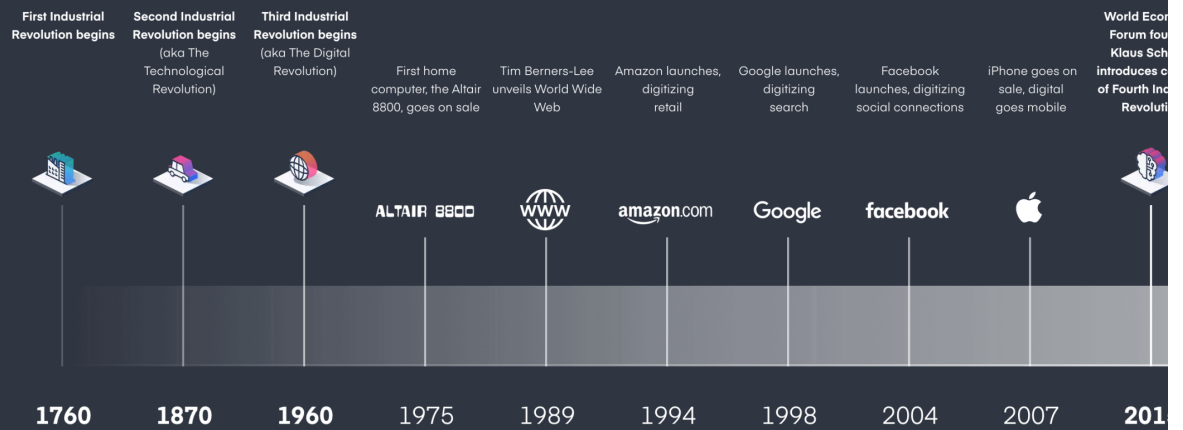
Often, when we tell people about this vision we get a common response: "How the hell are you going to do that?" which soon develops into "It's too big a job with too many obstacles to overcome." And it's true – creating an entirely new digital world that copies the real world in unprecedented detail so we can explore, test, manipulate and interact seamlessly between the two is, to put it lightly, a big challenge!

"What looks like something insurmountable actually came into being step by step."

But look at the internet. In 1989 Tim Berners-Lee unveiled his World Wide Web – the interface that connects us to information via the internet – and in doing so paved the way for the digitization of knowledge as we know it today. The computer adapted to become the conduit to the web giving everyone access to almost all the knowledge humankind has so far collated. Then in 2007 the iPhone put that knowledge in the palm of our hands and made it available anywhere at any time.

What looks now like something so huge and insurmountable to create came into being step by step, evolving and growing through open source contributions from millions of people around the world. And with it we have done some amazing things (as well as, admittedly, some not so amazing things – but more on that later).

These technological steps were causal in humankind taking one giant evolutionary leap – it made us start to Think Digital. Since then, things have moved fast. Facebook digitized the social fabric of global society. Amazon digitized retail. And Google made this vast wealth of information and resource searchable and so, discoverable.

First Industrial
Revolution begins

Second Industrial
Revolution begins
(aka The
Technological
Revolution)

Third Industrial
Revolution begins
(aka The Digital
Revolution)

First home
computer, the Altair
8800, goes on sale

Tim Berners-Lee
unveils World Wide
Web

Amazon launches,
digitizing
retail

Google launches,
digitizing
search

Facebook
launches, digitizing
social connections

iPhone goes on
sale, digital
goes mobile

World Econ
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ALTAIR 8800   WWW   amazon.com   Google   facebook

1760   1870   1960   1975   1989   1994   1998   2004   2007   201

The world as an interface

And this is our mandate, to answer the obvious question: what's next?

We believe the next evolutionary stage is the digitization of the world itself. By connecting the world directly to machines and technologies so information can pass freely between them, we create a vast and new shared space that's overflowing with opportunity. Now then is the time to Think Spatial.

At this moment of connection, something truly magical happens: the world itself becomes the new user interface, opening us up to limitless digital experiences, services and applications.
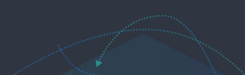
This is, in essence, the Fourth Industrial Revolution (4IR), and we're already seeing it come to life before our eyes. Augmented reality that removes our need for physical devices like phones and computers to access and interact with the digital world. Autonomous vehicles that function in the real world without a human interface (a driver!) because they understand it and can adapt to live situations using digital data.

"Physical and digital worlds, intrinsically linked through the power of Digital Twins..."

Suddenly, we're sharing the same infrastructure, interface and space with physical machines and digital content – the physical and digital worlds, intrinsically linked through the power of Digital Twins. Now that's a grand vision.

One of the most fascinating aspects of this technological leap is its natural focus towards making the technology invisible. The better the tech the less it needs to be operated by a human being and so the less enslaved we are to the devices that give us access to it – the smartphone being the perfect example. Sometimes, it feels like we operate the technology in our life to enable it to do its job but really it should be the other way around – the technology should be operating intuitively to help us do the job we need. Much of this is because computing devices like laptops and phones exist in their own physical bubble, separate from and not truly integrated with the real world. By integrating them, we can make fundamental change to almost every aspect of our lives for the better.

This is what the future looks like, and we're helping make it happen.
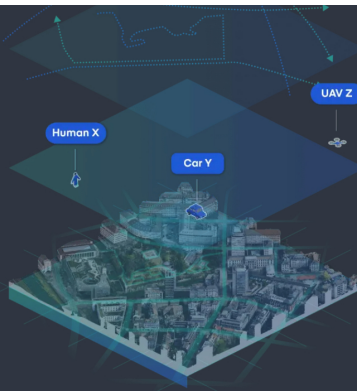
Nomoko as the catalyst

So we know that the World Wide Web was the interface that powered the Third Industrial Revolution. We are now building the interface that will power the Fourth Industrial Revolution by connecting the physical and digital worlds.

To do this we need to make the physical world machine readable so we can create digital, 3D, ultra-accurate one-on-one copies of everything in it – what we call Digital Twins. These Digital Twins create the framework for the Spatial Data onto which we build an interface that allows programmers and developers to build Spatial Apps that can interact with it in almost limitless ways. And when we say ultra-accurate, we're talking about detail at a whole new level not just beautifully rendered but contextual and semantically segmented too so it can actually be used rather than just looked at.

Each Digital Twin you see – be it a park bench, traffic light, data type or anything else – is a single identifiable data point, geo-referenced and segmented with its own unique label so it can be moved, removed, edited or enhanced to do what you want it to. On top of this we layer contextual Spatial Data – dynamic elements like traffic flow, pedestrian data and energy consumption, natural elements like the weather, and legal elements like planning regulations.

Making sure every data point (every park bench, traffic light, data type etc) is contextualised and identified when we capture the physical world is what makes our Digital Twins machine readable.

And we've already done it. We've built the pipeline process to be able to capture and digitize an entire city in weeks, starting off local with the cities of Zug and Zürich here in Switzerland. We're now at the point where we can capture and create a Digital Twin of anywhere on Earth, ready to be used by everyone from city planners to building developers to autonomous car manufacturers to gamers and much more. It's exciting stuff!

Small steps towards a big vision

One of the biggest lessons learned from Berners-Lee's decision to make the World Wide Web available to everyone is that despite the spirit of openness and equality with which it was done (he never patented it), it has still created a huge imbalance and great inequality where giant companies dominate, setting their own rules, prices and agendas that most of us are powerless to argue against. We're committed to doing everything we can to make sure that doesn't happen.

The crux of the issue is data ownership and subsequently, privacy and security. Owning your data is vital because it gives you control over how it's used, by who and for what – if you create a Spatial App and own the relevant Spatial Data, it means you can benefit from shared business models and any revenues they generate. Let's take an example: Facebook. If you owned your data on Facebook, you could make revenue from it just like Facebook does, but in reality all you get for your data is access to the service Facebook provides free of charge. We're changing that narrative to make sure everyone can create, own and benefit from the Spatial Apps they create.

"The potential of 4IR is limitless and exponential, and that brings with it great responsibility."

The potential of 4IR is limitless and exponential, and that brings with it great responsibility. We acknowledge and accept that responsibility – we understand the risk that comes with it and will do everything we can by working with the right people, organizations and bodies to make sure it isn't misused. We look at Google and its old 'don't be evil' mandate and we see a negative way of saying a positive thing – instead we prefer our more utopian approach to simply 'do good'.

Part of our future story will be to decentralize ownership of Digital Twins so a spatial future truly is open to everyone, and it's a journey we've already begun...

The future is here now – physical, digital, mirrored – and we'd love to share it with you.

Nilson Kufus & Vincent Pedrini found Nomoko

Establishes process for digitizing & scaling real-world data into 3D digital data

Wins Pionerpreis 2016

Wins Top 100 Swiss Startups award (Again in 2017, 2018 & 2019)

Presents at Venture Leaders Technology summit in Silicon Valley (Again in China 2018)

One of the top companies "racing toward autonomous cars" – Wired magazine

One of Bilan's Top 50 startups – "to invest in and be inspired by"

Nilson named as one of 100 Swiss Digital Shapers (And again in 2019)

First successful city capture tests in Switzerland & Germany

2015 2016 2017 2018

Discover

The power of Digital Twins

Spatial data

Get your 3D model

Become a data partner

Developer portal coming soon

Learn

People & values

Our story

Journal

Work with us

Press kit

Join

Contact us

Solutions

Real estate solution

Terms

Privacy policy

Cookie declaration

Imprint

Social