

A TECHNICAL PERSPECTIVE ON THE OPPORTUNITIES AND THREATS OF FINTECH

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2013 - today: Chief Information Manager ING Netherlands

2015 - today: Member of Supervisory board Equens SE

2010 - 2013: Head application management ING Netherlands

2005 - 2010: Strategy consultant McKinsey&Company

2001 - 2005: PhD (2005) and MSc (2001) in Systems Engineering
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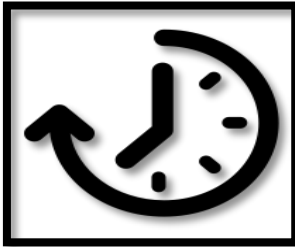


FINTECH IS A LINE OF BUSINESS BASED ON USING SOFTWARE TO PROVIDE FINANCIAL SERVICES.



- **Why Fintech?**

- Market of financial services, traditional banking, is imperfect. Tech companies like Uber, AirBNB, Netflix, etc. show us the value of frictionless customer experience
- Traditional banks do not improve sufficiently fast



- **Why NOW?**

- Our society is disrupted by web-scale companies with new design principles
- APIs allow the orchestration 3rd party services into business processes



- **What does it mean for banks?**

- Great opportunity because many Fintech companies deliver services to banks
- Great threat because Fintech companies aim to disrupt banks
- Great uncertainty because responsibilities shift to the unknown

MARKET OF FINANCIAL SERVICES, IS IMPERFECT. TECH COMPANIES SHOW US THE VALUE OF FRICTIONLESS CUSTOMER EXPERIENCE

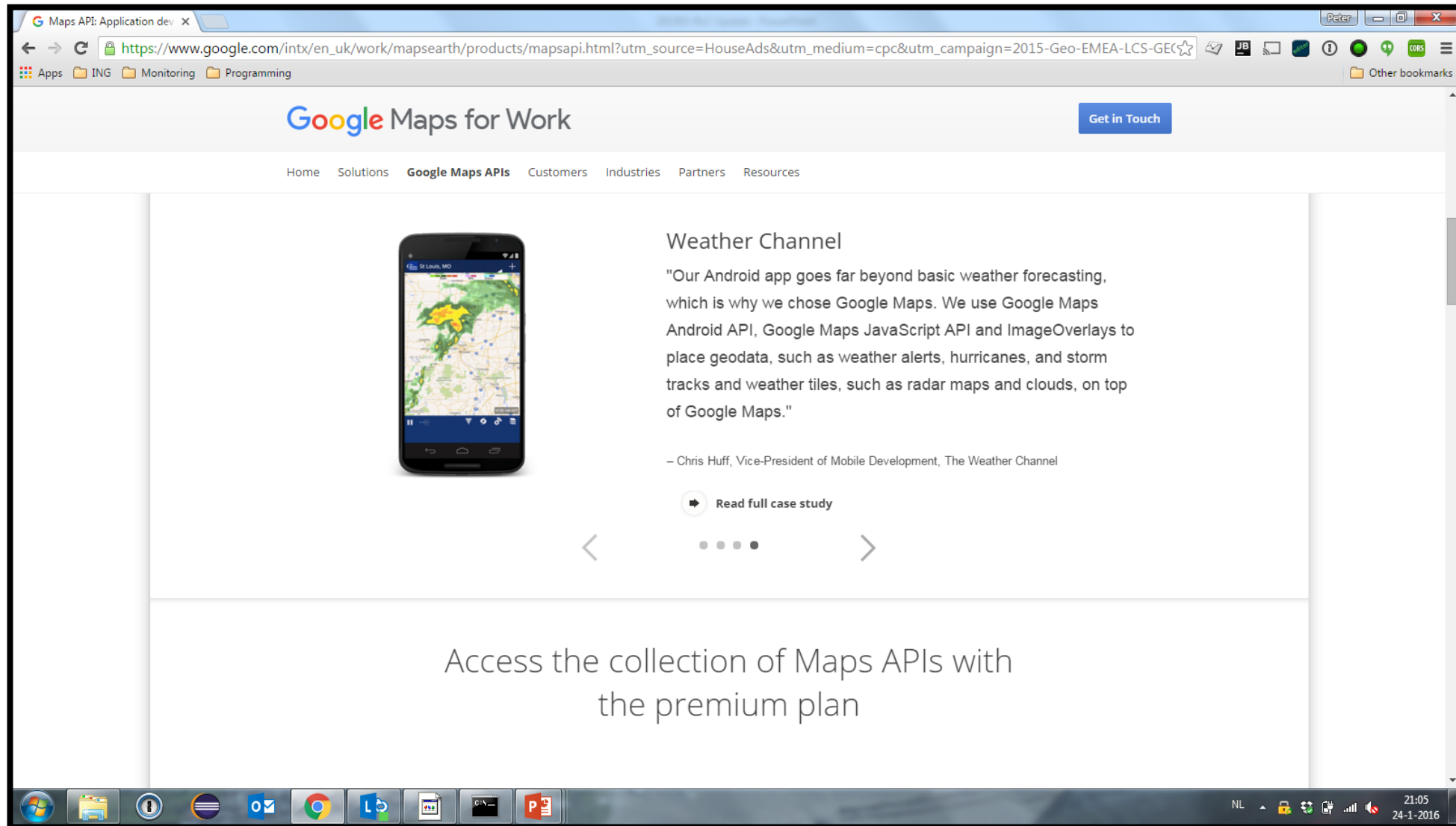
- Our customers are dramatically influenced by online frictionless experiences of web scale companies like: Spotify, Netflix, Amazon, Mint, BankSimple and Bol.com:
- Their apps are **always available** with a very **high reliability**
- They provide a **responsive user experience**
- They offer **features** which are **extremely relevant** to **their users**
- They deliver with **incredible agility**
- We have a problem fulfilling customer expectations in our banking presence.




WHAT DO WEB SCALE COMPANIES HAVE IN COMMON?

- They **designed for Scalability** - by building on web technologies and architecture
- They **designed for Responsiveness** - by extensive caching
- They **designed for Availability** - by providing distributed systems and use of cloud technology
- They **designed for Customer Experience** - outside-in thinking of APIs
- They **designed for Experimentation** - release frequent, use data, adapt
- *They* **designed for APIs** – delivering services to other services, not to humans

API – HOW WHEATHER CHANNELS USES GOOGLE MAPS



API – HOW UBER USES TWILLIO FOR SMS COMMUNICATION



The screenshot shows a web browser window displaying the Twilio website. The address bar shows the URL <https://www.twilio.com/customers/stories/uber>. The Twilio logo is in the top left, and navigation links for PRODUCTS & PRICING, USE CASES, API & DOCS, and NOT A DEVELOPER? are in the top right. A SIGN UP and LOG IN button are also present. The main content area features the Uber logo and the headline "Keeps riders up-to-date on the status of their driver request with Twilio SMS". Below this, a paragraph states: "Uber is everyone's private driver. From your iOS or Android device, customers can request a private town car pickup. Uber keeps customers updated about the status of their ride in real-time with text messages powered by Twilio." A link to www.uber.com is provided. A video player shows a portrait of Travis Kalanick, Co-Founder & CEO of Uber, with a play button overlay. To the right of the video, a quote from Travis Kalanick reads: "OUR VISION OF THE FUTURE IS REALLY ONE OF CITIES, NOT COUNTRIES. IF THERE'S A MAJOR CITY SOMEWHERE OUT THERE, YOU CAN BE PRETTY CERTAIN UBER IS GOING TO BE THERE. HAVING ONE TELECOMMUNICATIONS PROVIDER ULTIMATELY WILL COVER ALL THE CITIES AND COUNTRIES WE GO TO - THAT'S CRITICAL FOR US." Below the quote, his name and title are listed: Travis Kalanick, CEO, Uber. The browser's taskbar at the bottom shows various application icons and the system clock indicating 21:12 on 24-1-2016.

twilio PRODUCTS & PRICING USE CASES API & DOCS NOT A DEVELOPER? SIGN UP LOG IN

UBER Keeps riders up-to-date on the status of their driver request with Twilio SMS

Uber is everyone's private driver. From your iOS or Android device, customers can request a private town car pickup. Uber keeps customers updated about the status of their ride in real-time with text messages powered by Twilio.

www.uber.com

Travis Kalanick
Co-Founder & CEO, UBER

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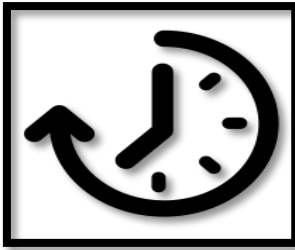
Travis Kalanick
CEO
Uber

OPPORTUNITIES AND THREATS FOR BANKING



- **Opportunities**

- Many Fintechs deliver API based solutions to banks that strengthen their customer journeys. Examples are enormous: from SMS communication to identity check to document storage, etc. etc.



- **Threats**

- Fintechs aim to disrupt the banking proposition. Typical examples are account aggregators, e.g. Mint.com, lending providers, e.g. LendingClub or payment solutions, e.g. Adyen



- **Uncertainty**

- What happens if a start-up Fintech that connects on behalf of its customers via APIs to their current accounts @ING is hacked? Who takes responsibility for the financial loss for the customers? Should regulator place every startup under supervision?

