



Connected Living



Exploring New Business Impacts

Ana Tavares Latiibeaudiere,
Head of the Connected Living Programme

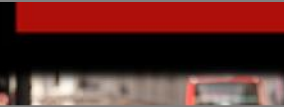
Speakers



- Matt Hatton, Director, Machina Research
- Mel Coker, Vice President of Product Development, AT&T Emerging Devices
- Marc Overton, Vice President of Wholesale & Machine to Machine (M2M) Everything Everywhere
- Nakul Duggal, Vice President of Product Management, Qualcomm CDMA Technologies, Qualcomm
- Peter Linder, Networked Society Evangelist, Ericsson



Experience a world where
everything intelligently connects.
The Connected Life



Connected House 2012



Hospitality Suite CY13, The Courtyard



Machina Research

**The Global Impact of the
Connected Life**

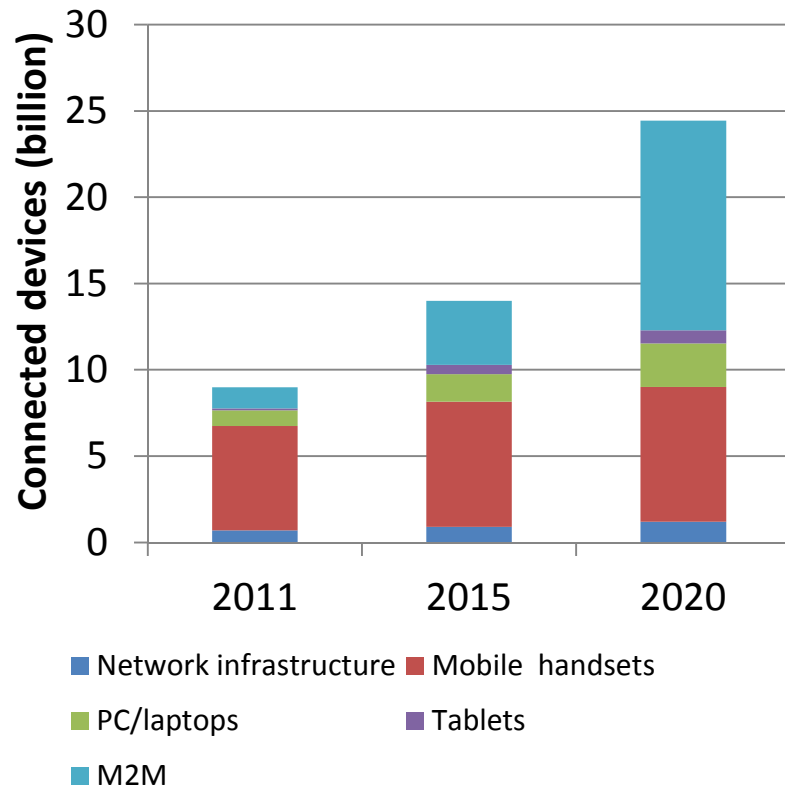
Matt Hatton, Director

29 February 2012

The 'Connected Life' in 2020: a world of 24 billion connected devices

Connected devices 2011-2020

Source: Machina Research, 2011



- Global connected devices¹ will increase from 9 billion in 2011 to 24 billion in 2020 across all technologies
- Growth will be dominated by M2M, which will account for half of all devices in 2020, up from 14% in 2011
- 2.3 billion cellular M2M devices in 2020
- A USD1.2 trillion opportunity for MNOs

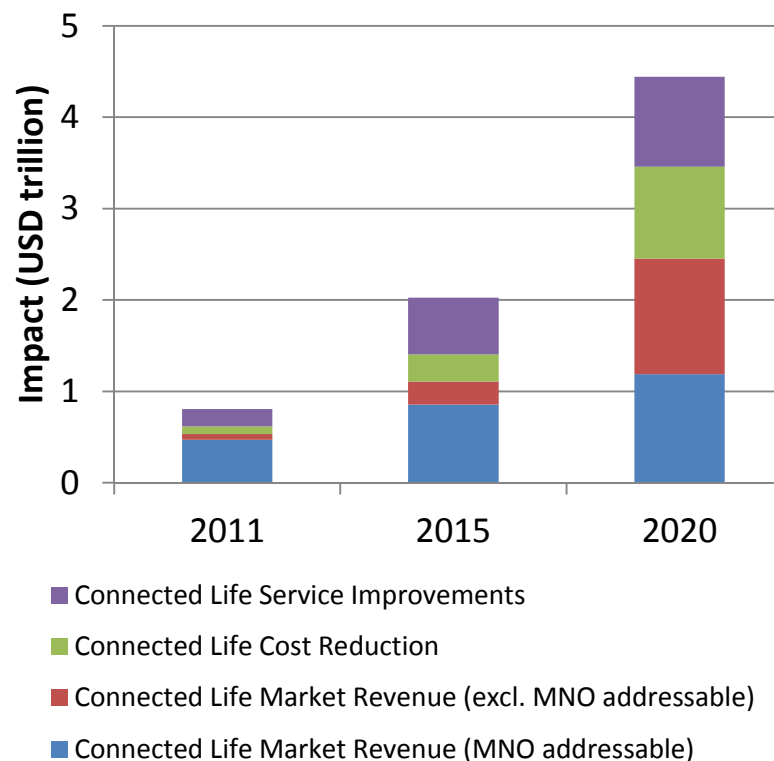
¹ "Connected devices" comprises all devices used for transmitting and receiving packet data telecommunications via any wide-area or local area network. It includes PCs/laptops, mobile handsets, tablets and numerous M2M applications

The Connected Life: a USD4.5 trillion global impact

- **Connected Life Market Revenue will be USD2.5 trillion in 2020**
 - Revenue from the sale of connected devices and services, as well as related services that are provided over those devices
 - USD1.2 trillion addressable by MNOs
- **Connected Life Cost Reduction & Service Improvements is calculated at USD2 trillion**
 - Less direct, but nevertheless tangible, benefits to businesses, organisations and consumers stemming from the evolution of the Connected Life.
 - USD1 trillion stemming from cost reductions
 - USD1 trillion from service improvements directly associated with Connected Life products and services.

Global impact of the Connected Life 2011-2020

Source: Machina Research, 2011



About the research

- **Undertaken by Machina Research during December 2011 and January 2012 in conjunction with the GSM Association**
- **Building on our Connected Intelligence forecast database**
 - 54 countries
 - 60 application groups
 - Connections, traffic and revenue
 - 2010-2020 forecasts
- **For each application group we identified the impact that connected devices would have in three key areas:**
 - Connectivity, devices and service revenue (from CI database), and revenue from related services
 - Cost reduction
 - Service improvement

Global impact of the Connected Life, example application: connected car insurance

Source: Machina Research, 2011

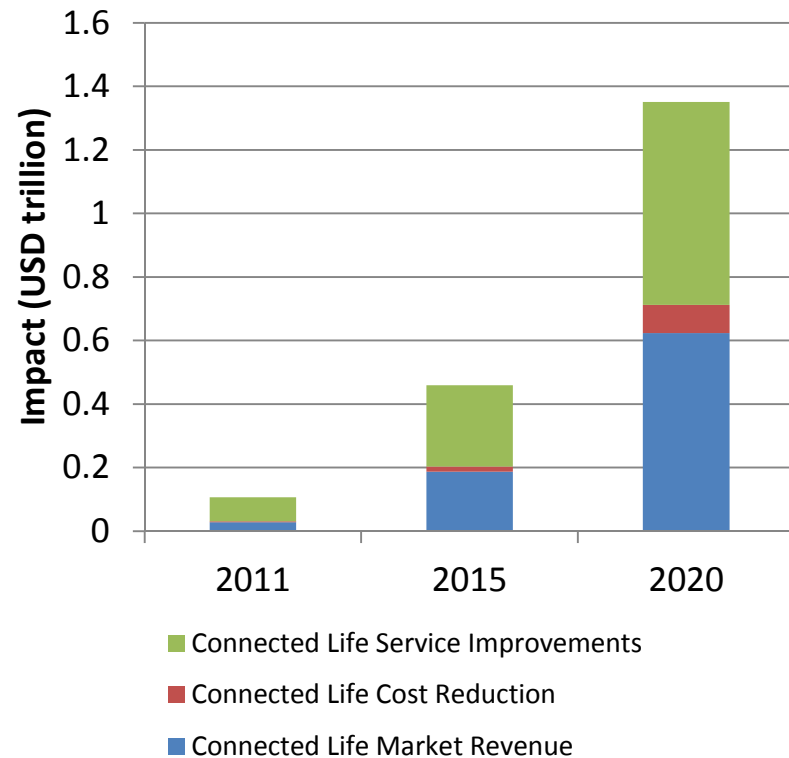
Category of impact	Type of benefit
Connected Life market revenue	The connected PAYD insurance device, device/service management, the provision of connectivity and the sale of PAYD insurance.
Connected Life cost reduction	Cost reductions for drivers through only paying for the cover that they need, cost reductions for insurers through better information and the ability to better manage risk and better enforce policy terms and conditions.
Connected Life service improvements	The ability to better tailor insurance policies to individual driver needs.

Automotive

- **The biggest impact from the Connected Life**
- **Connectivity will become an implicit part of the driving experience**
 - Vehicle platforms of some sort will penetrate 90% of new vehicles, up from 10% today
 - Electric vehicles must be connected
- **New business models will be created:**
 - PAYD insurance
 - New models of vehicle 'ownership'
 - In-vehicle entertainment

Global impact of the Connected Life in the Automotive Sector 2011-2020

Source: Machina Research, 2011

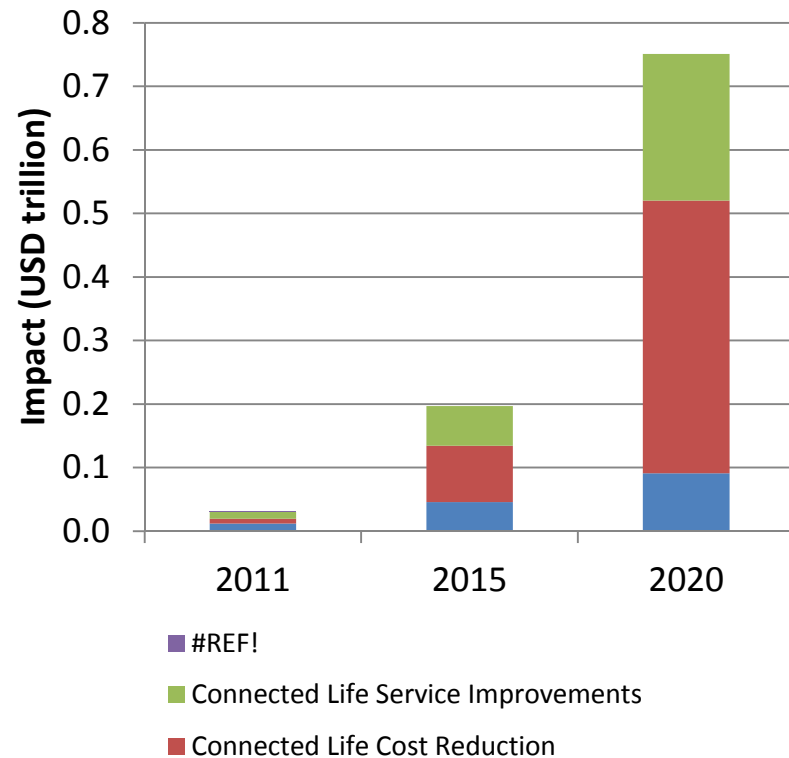


Healthcare

- **Huge cost savings can be recognised in healthcare**
 - Clinical remote monitoring will generate USD350 billion in cost savings and benefits from pre-emptive action
 - 'Assisted Living' applications (from Vitality Glow-Caps through to comprehensive living solutions) will allow people to stay in their homes longer, saving USD270 billion
 - Numerous other applications including telemedicine and first responder connectivity will also generate cost savings and quality-of-service improvements

Global impact of the Connected Life in the Healthcare Sector 2011-2020

Source: Machina Research, 2011

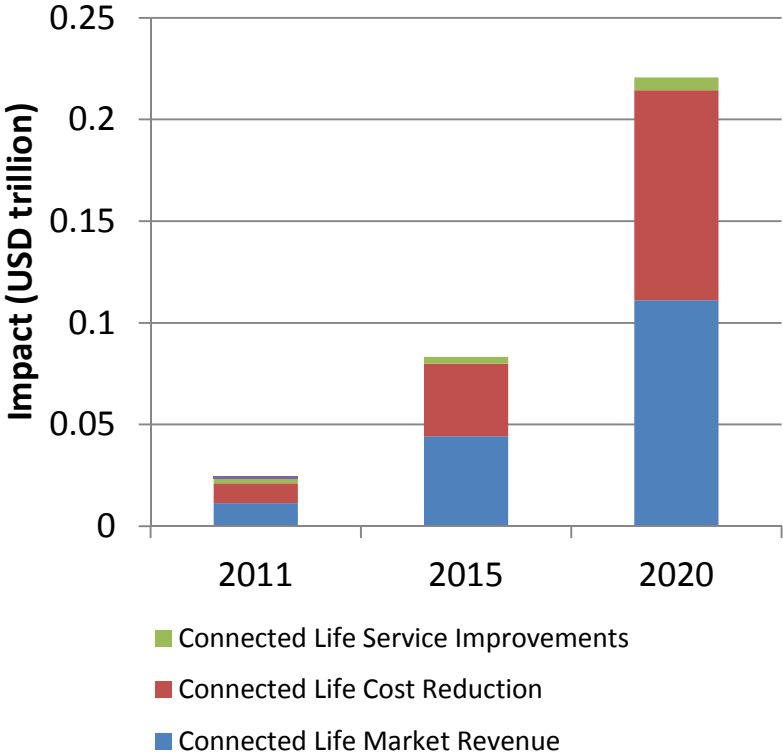


Utilities

- **Smart meters will facilitate big cost reduction gains**
 - Utilities – automated meter reading and fraud reductions worth USD20 billion in 2020
 - Home-owners – changing user behaviour in reducing energy usage (and thus spend) to the tune of USD85 billion
- **Other utilities benefits include:**
 - Revenue generated from electric vehicle charging
 - More secure and reliable distribution network

Global impact of the Connected Life in the Utilities Sector 2011-2020

Source: Machina Research, 2011



Conclusions

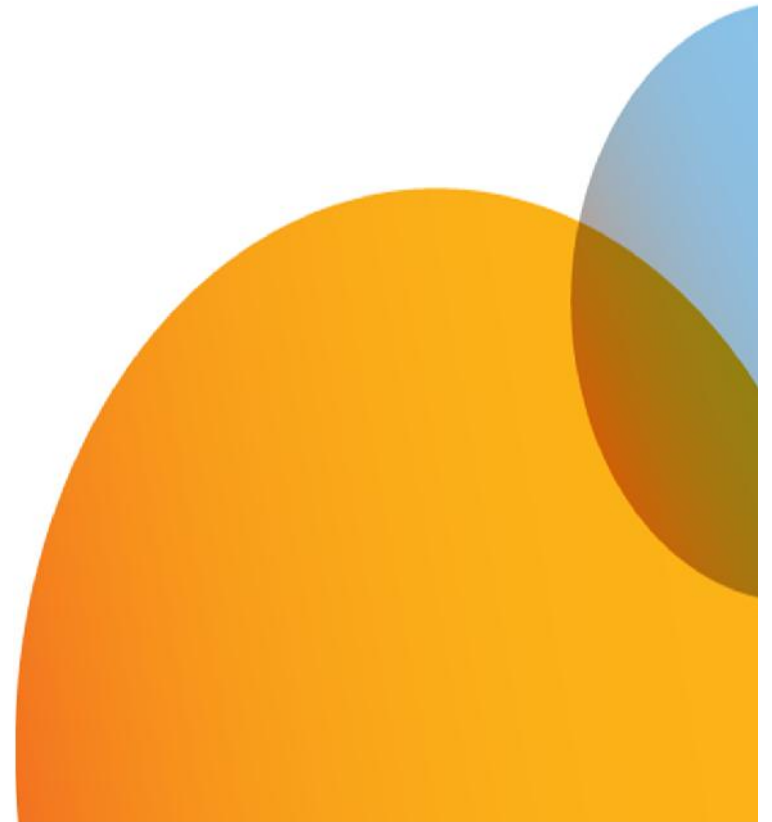
- The impact of the Connected Life goes way beyond the USD1.2 trillion addressable opportunity for mobile network operators
- It facilitates new business models and allows massive efficiency savings and service improvements to give a total impact valued at USD4.5 trillion
- Immeasurable impact on, and benefit to, society

Connected Living:

Exploring New Business Impacts

Mel Coker

Vice President – Product Devel





Emerging Devices *Today*

AT&T's Emerging Devices Organization



The **Emerging Devices Organization** was formed in October 2008 to harness the tremendous growth in the demand for wireless data and build the “next big thing” in the communications industry.

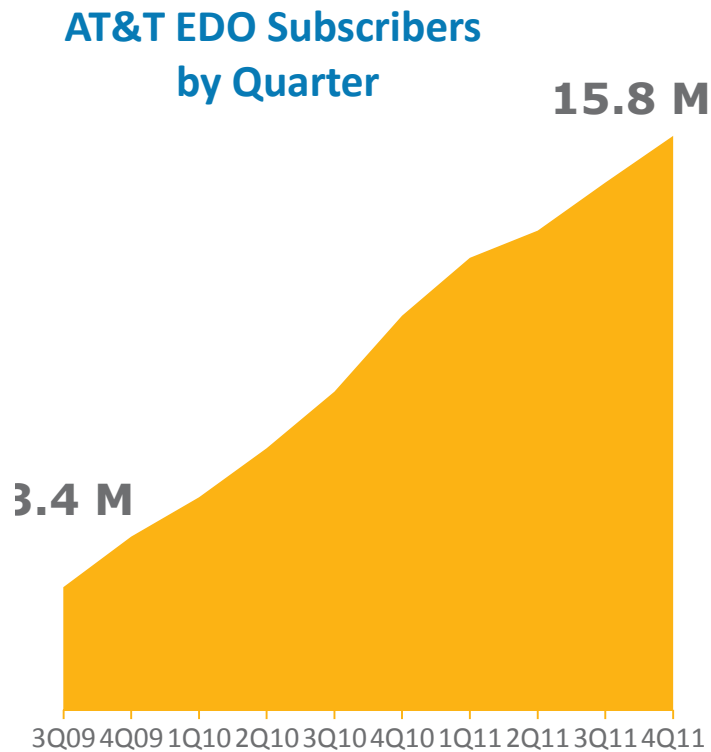


Created to bring wireless connectivity to a host of new devices and applications in the consumer marketplace



Created to deliver success by building strong partnerships to launch innovative products in new connected consumer segments

AT&T's Embedded Devices Growth



*Added more than 11M devices
in 2+ years*



*M2M growth sustained through
home security, tracking, insurance, ...*



*eReaders and Tablets pace
Consumer growth*

Emerging Devices:

AT&T **Verticals**





Emerging Device *Trends*

Emerging Devices Trends



eReaders

- *Purchase content anywhere*
- *Share content across devices*
- *Optimize reading experience*



Tablets

- *New options to meet evolving needs (entry level, laptop replacement)*
- *Use LTE networks for optimal streaming experience*



Healthcare

- *Dosage reminders: text or voice*
- *Family alerts to ensure adherence*
- *Track adherence over time*



Gaming

- *Mobile game downloads*
- *Multi-player connectivity anywhere*
- *Augmented reality experiences*

Emerging Devices Trends

Extending connectivity to the car...



Tethered Solutions

- *Use /share content & apps from smartphone*
- *Streaming audio & video*
- *Access to web, cloud for entertainment*

Embedded Solutions

- *Engine, system diagnostics*
- *Auto crash notification*
- *Stolen vehicle assistance*
- *Navigation, local search*
- *Emergency voice calls*
- *Remote Unlock, Remote Start*
- *Real-time traffic, weather, parking*
- *State of charge & Pre-Conditioning for EVs*



Emerging Devices Trends

Synching it all up with the home...



Synchronization

- *The home becomes the hub of personal data*
- *Access via any web-enabled device*
- *Share content across all connected devices*
- *Transition experiences between devices*



Home Automation





- *Moisture Sensing, Water Shut Off*
- *Temperature Control*
- *Garage Open/Close*
- *Lights On/Off/Dim*
- *WiFi Touch Pad*
- *IP Cameras*



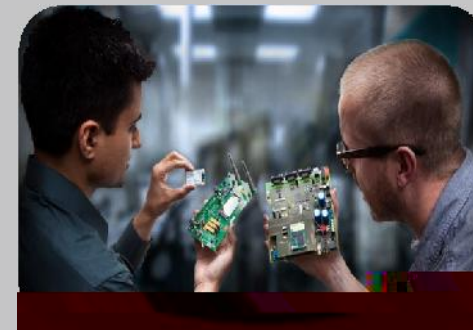


Seizing the *Opportunity*

AT&T's Model

-  **A winning team – one-stop shop, a “start-up” within AT&T**
-  **Business model flexibility and openness**
-  **Fastest Mobile Broadband Network...
Getting Faster with 4G LTE***
-  **AT&T Foundry – innovating to accelerate technology**

*Limited 4G LTE availability in select markets. 4G speeds delivered by LTE, or HSPA+ with enhanced backhaul, where available. Deployment ongoing. Compatible device and data plan required. LTE is a trademark of ETSI.



Emerging Devices Ecosystem

Manufacturers

Developers

**Operating
Systems**

**Content
Providers**

Carriers

Retailers



Thank you!

Connected Living: Exploring New Business Impacts

Mel Coker

*Vice President – Product Development
Emerging Devices, AT&T*



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*everything
everywhere*



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Everything Everywhere

Hello there, allow us to introduce ourselves.
We're the UK's biggest mobile communications company.

We run two of Britain's most famous telecoms brands, Orange and T-Mobile and are the largest wholesale mobile operator (24 MVNOs including Virgin and China Telecom)

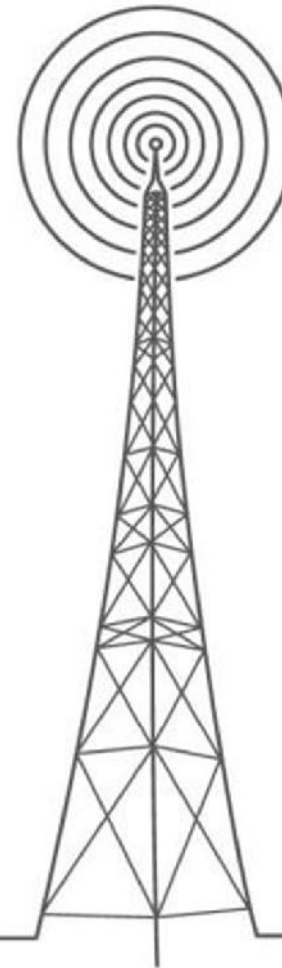
We do it with the backing of two global telecoms giants, France Telecom and Deutsche Telekom.



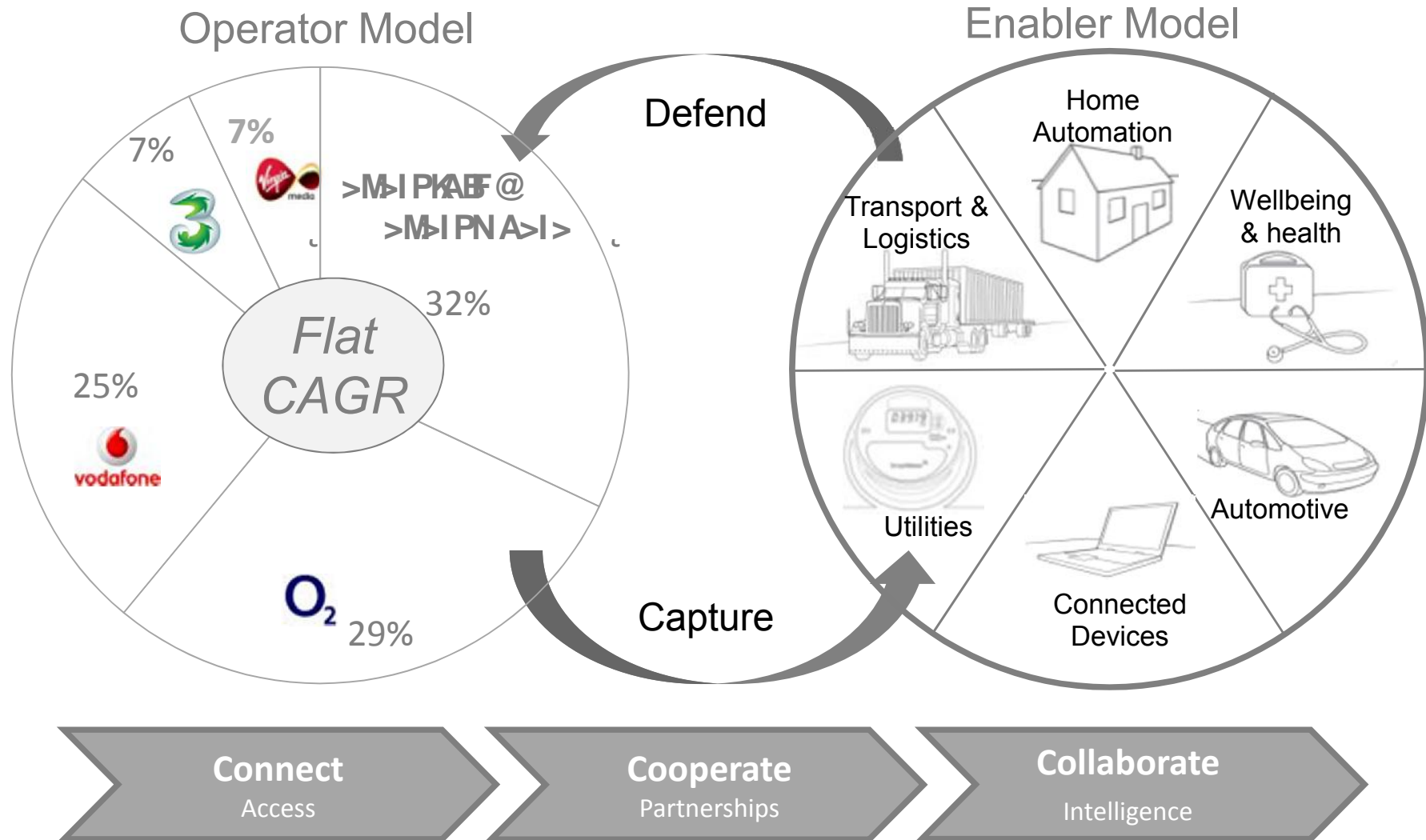
T-Mobile



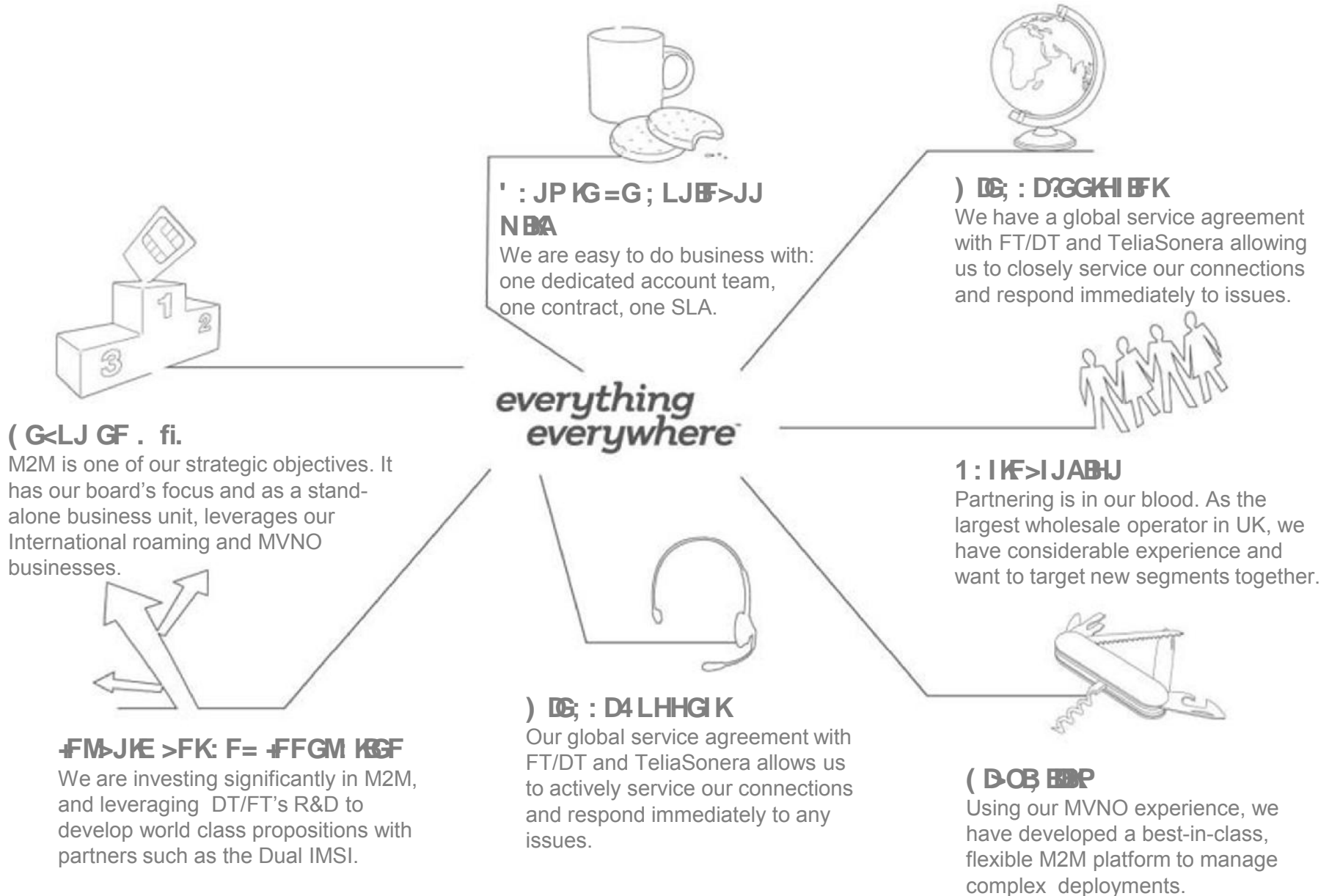
Deutsche Telekom



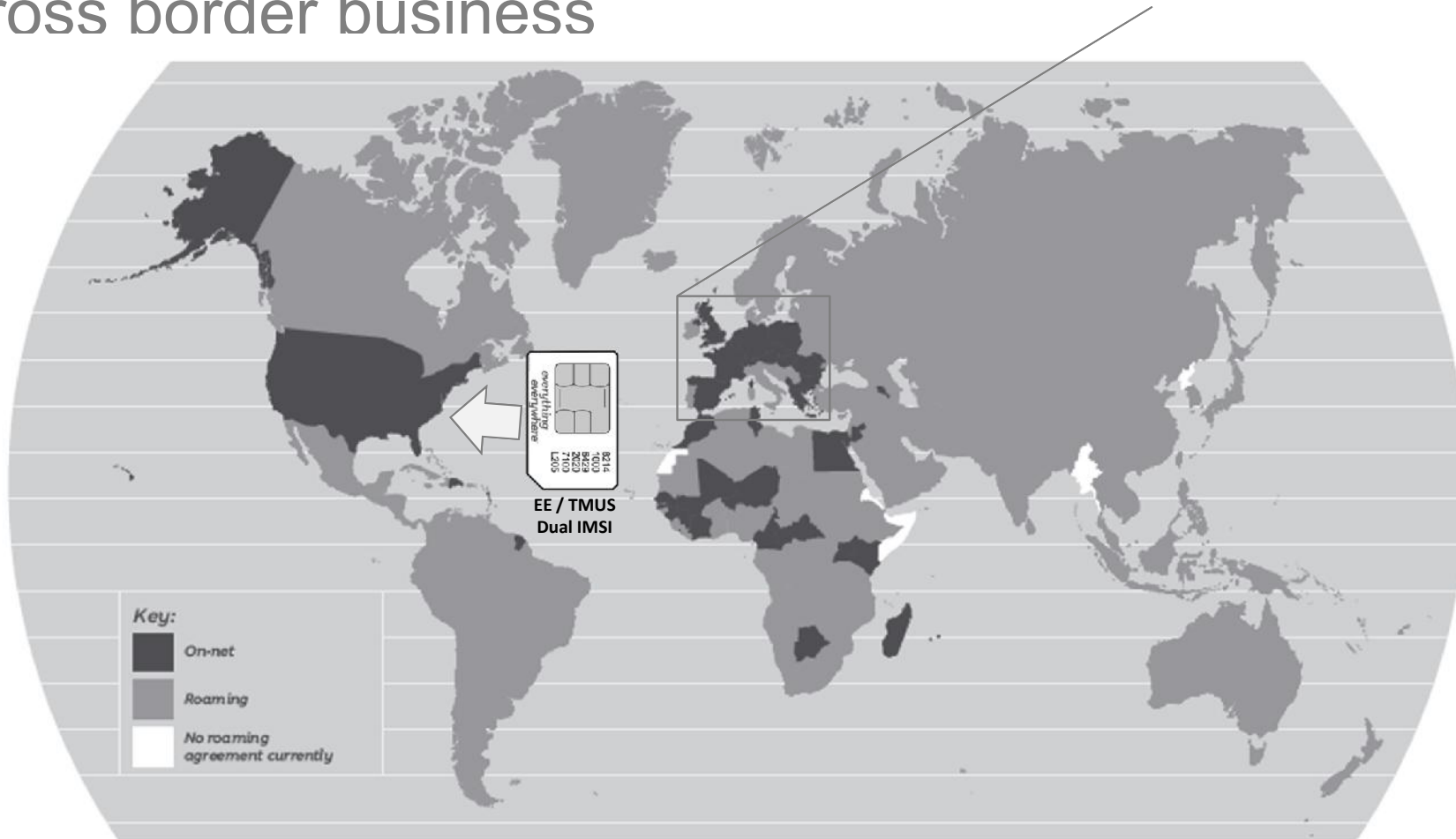
Operators have a key role to play in enabling business transformation in other verticals



Embedded connectivity is different from smartphones



Global connectivity is vital for M2M cross border business

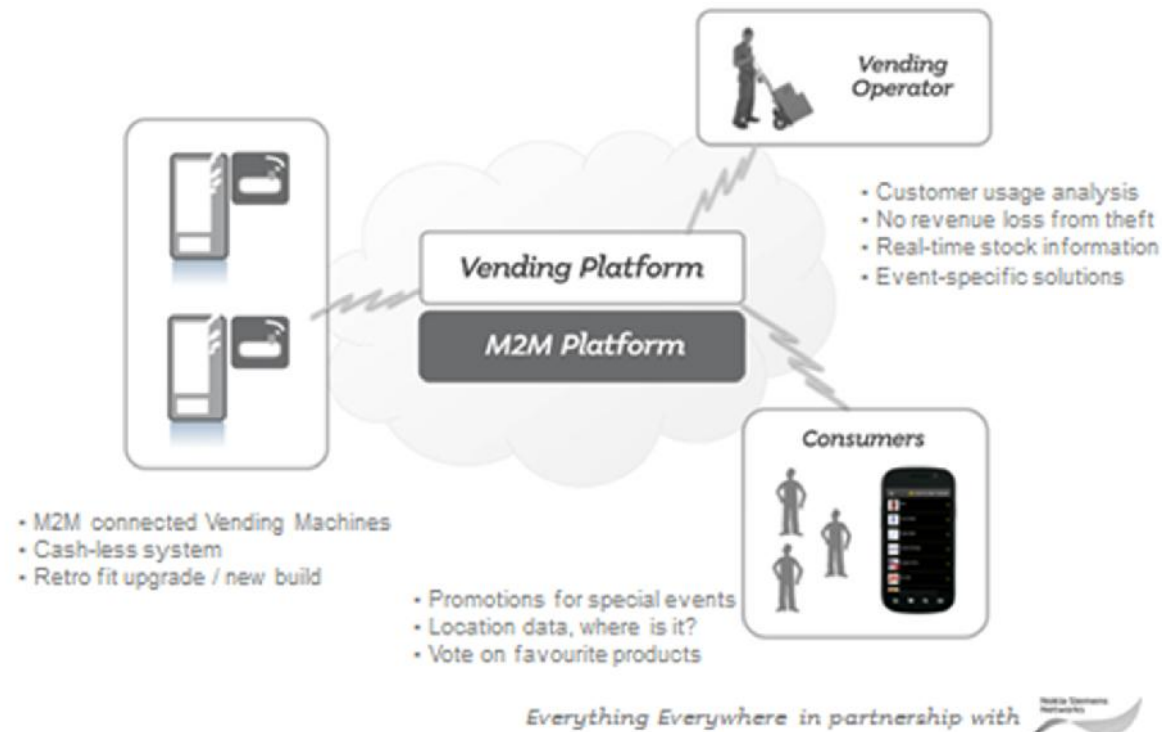


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- The largest GPRS network in the world and the largest on-net footprint in Europe
- Outstanding global roaming coverage
- EE/ FT/DT/ TeliaSonera M2M service alliance
- Dual IMSI – single SIM covering US and UK – simplify logistics/ reduce cost

Operators are now moving into complex connected solutions

Vending Telemetry – an example of how both consumer and enterprise benefit from embedded connectivity



1. Business models vary by vertical - ARPU is not the best KPI
2. It takes a long time for some industries to grasp the M2M opportunity
3. Operators cannot do it alone - partnerships are key

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Key Trends driving M2M adoption

- **Integrated System Solutions**
 - AP + Modem + Connectivity driving down cost, size, power
- **Technology and Coverage**
 - HSPA is ubiquitous today; LTE evolving towards a global footprint
- **M2M as a managed service**
 - Devices “come with data connectivity”

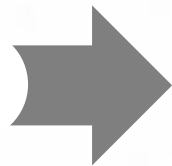


Value of Integration in the M2M value chain

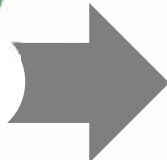


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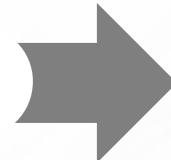
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module
OEM
licensee



system
integrator



device
OEM

Integration optim

Example: A Smart M

LCD

HSPA and LTE optimize use of spectrum

M2M can access globally ubiquitous high bandwidth, low latency networks

Spectral efficiency
2x5Mhz TDD



Source: Mobile Broadband Comparison; CDG; 2008.

(1) Assumptions 5 MHz FDD, WCDMA assumes no DSCH. HSDPA assumes 1x1 SISO, HSPA assumes 1x2 SIMO; HSPA+ includes 1x2 SIMO and equalizer; LTE includes 2x2 MIMO

(2) Assumptions, 5 MHz FDD, HSPA+ and LTE includes 1x2 SIMO. HSPA+ includes no IC, HSPA = Rel. 6. HSPA+ = Rel. 7



Deployed in/ **111** countries

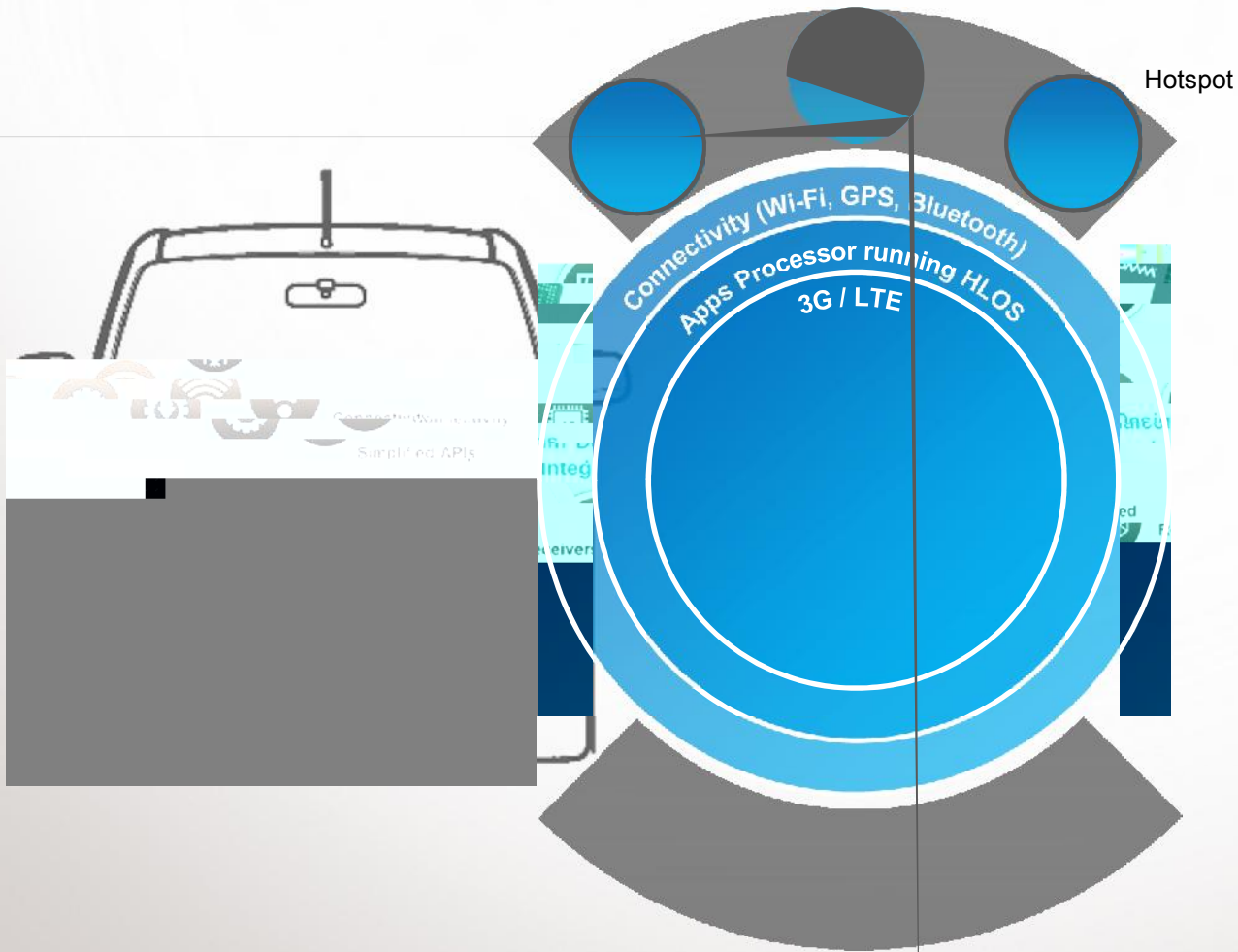
On course to reach/ ; **1.1B** connections in 2012

Mobile operators to invest **64** / **11** ; **1.1B** in HSPA, HSPA+ and LTE over next 5 years

Source: Connected Life – GSMA Position Paper; GSMA; October 2011

Smart Automotive

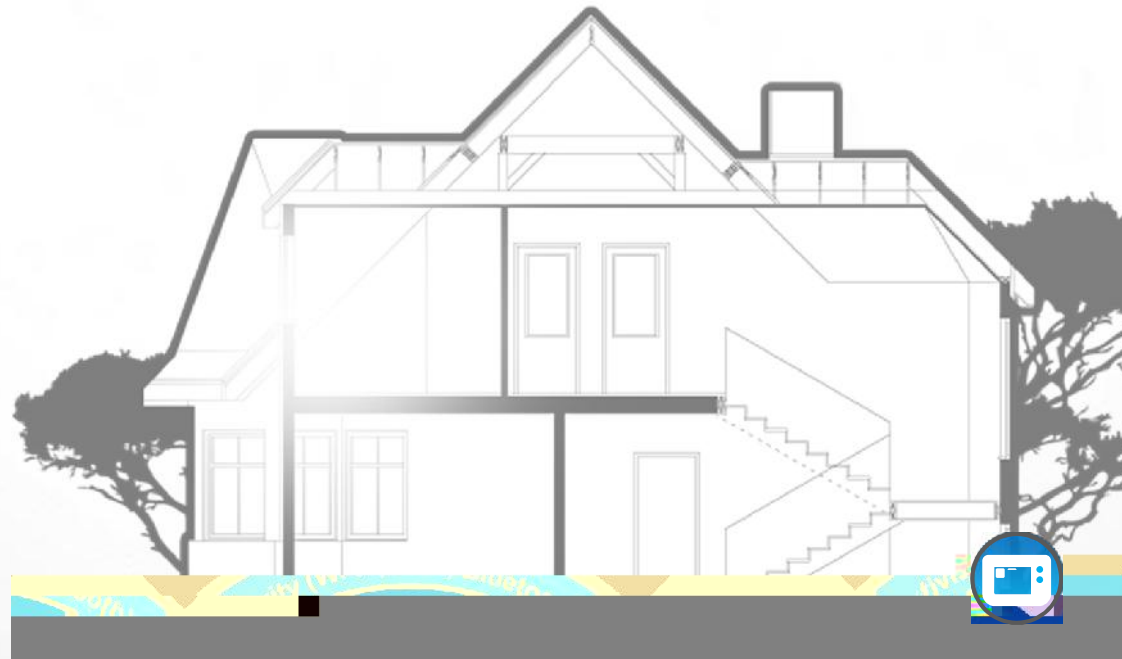
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Smart Energy in the Intelligent Home

Application Processing and Always Connected – From the Grid to the Home



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LKEP @ KN: P

M2MSearch.com

- Web resource with database of over ~100 M2M modules offered by our OEM partners
- Searchable by
 - chipset model
 - modem technology
 - operator certification
 - market availability
 - form factor



Thank You

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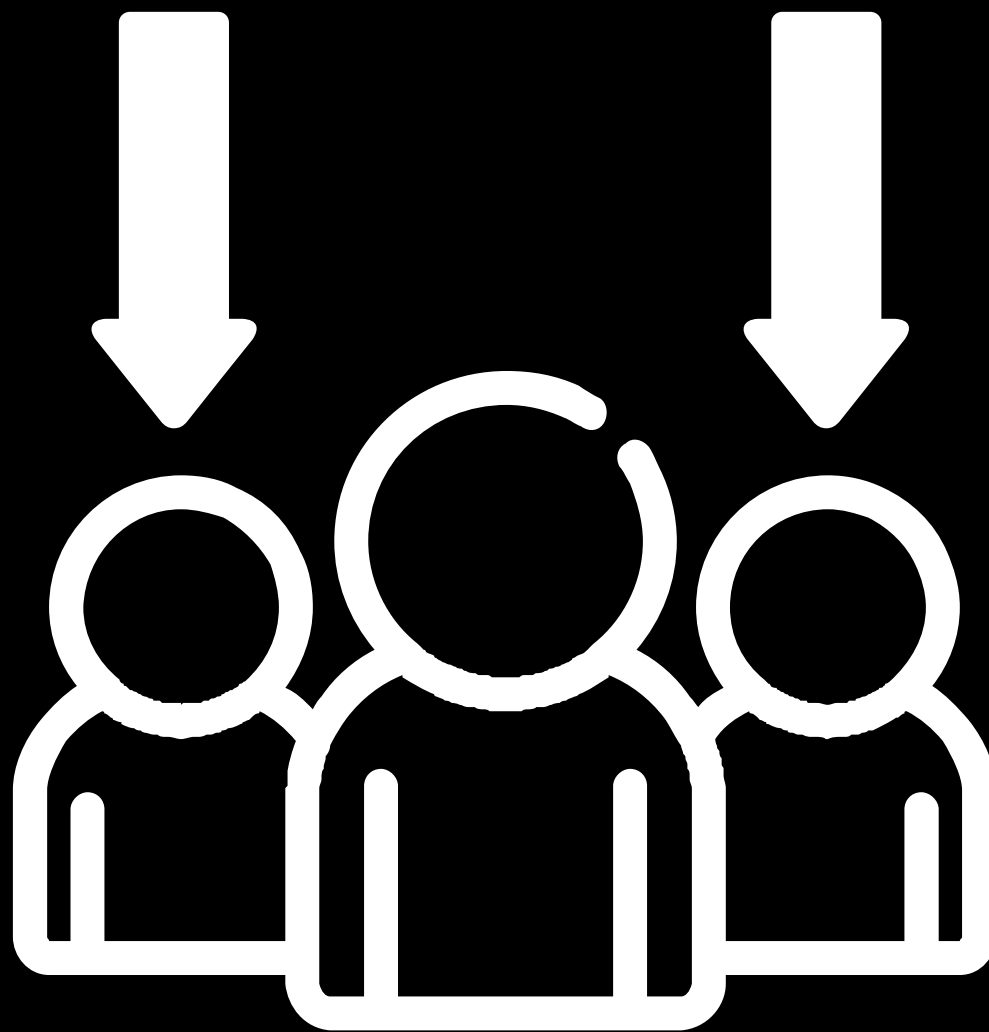


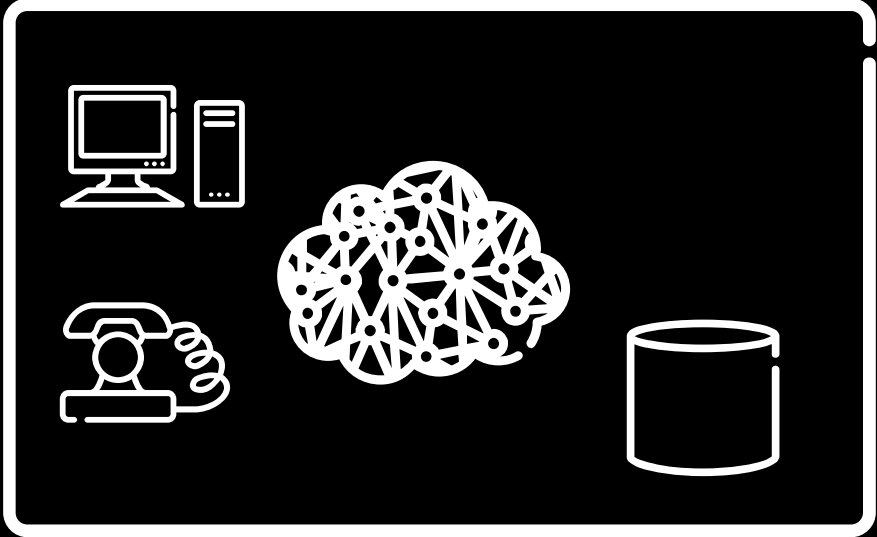
NETWORKED SOCIETY

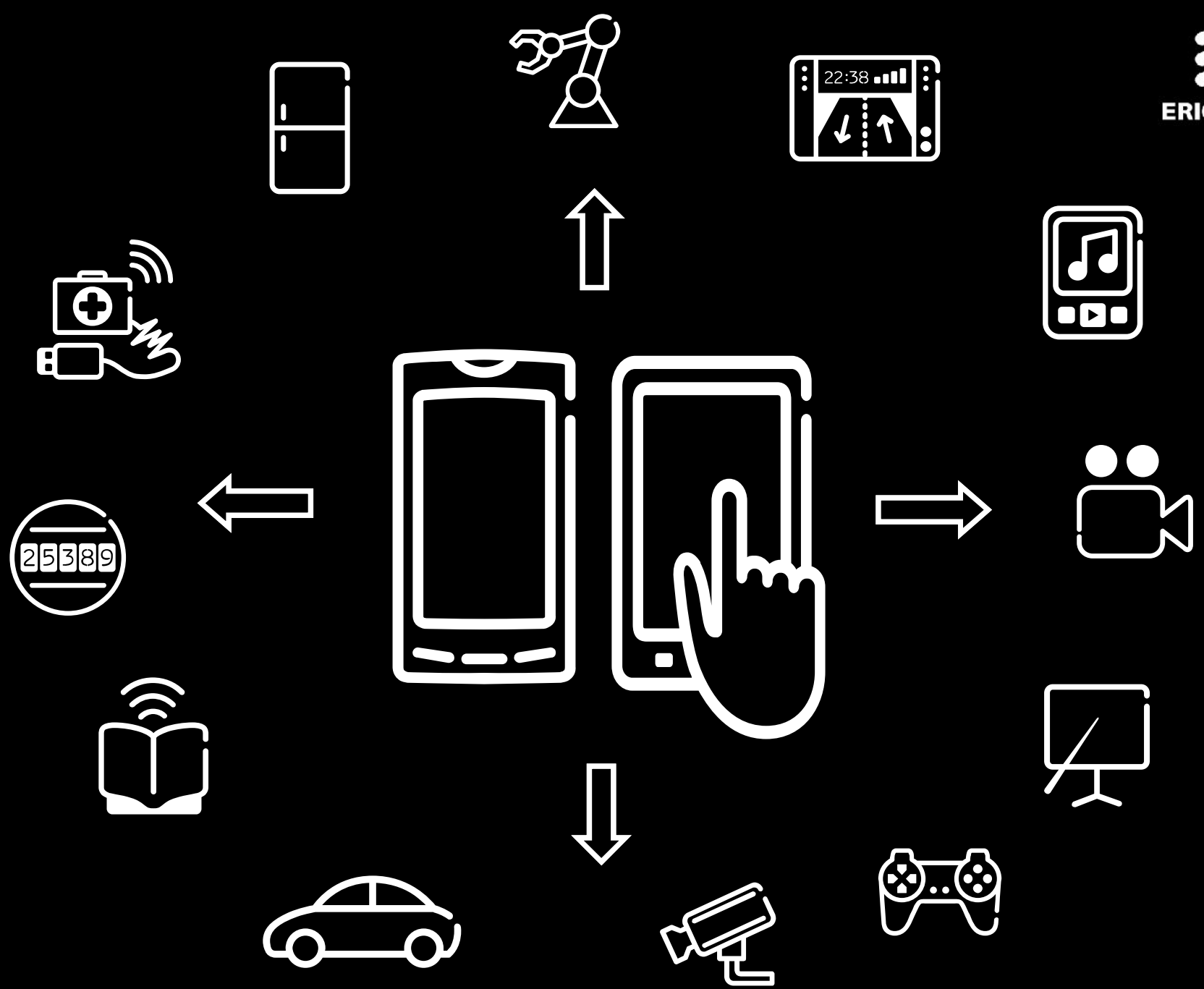
PETER LINDER

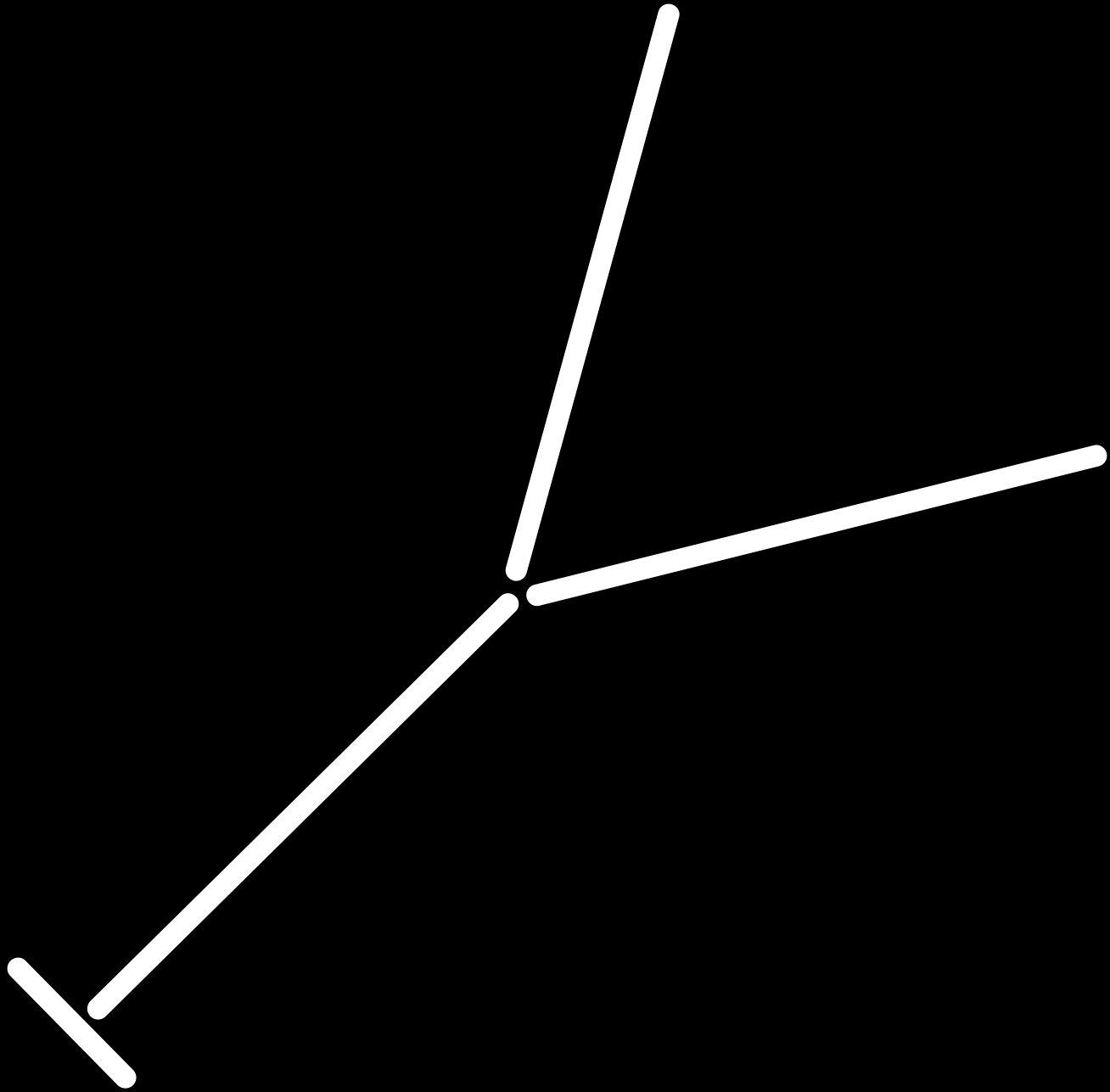
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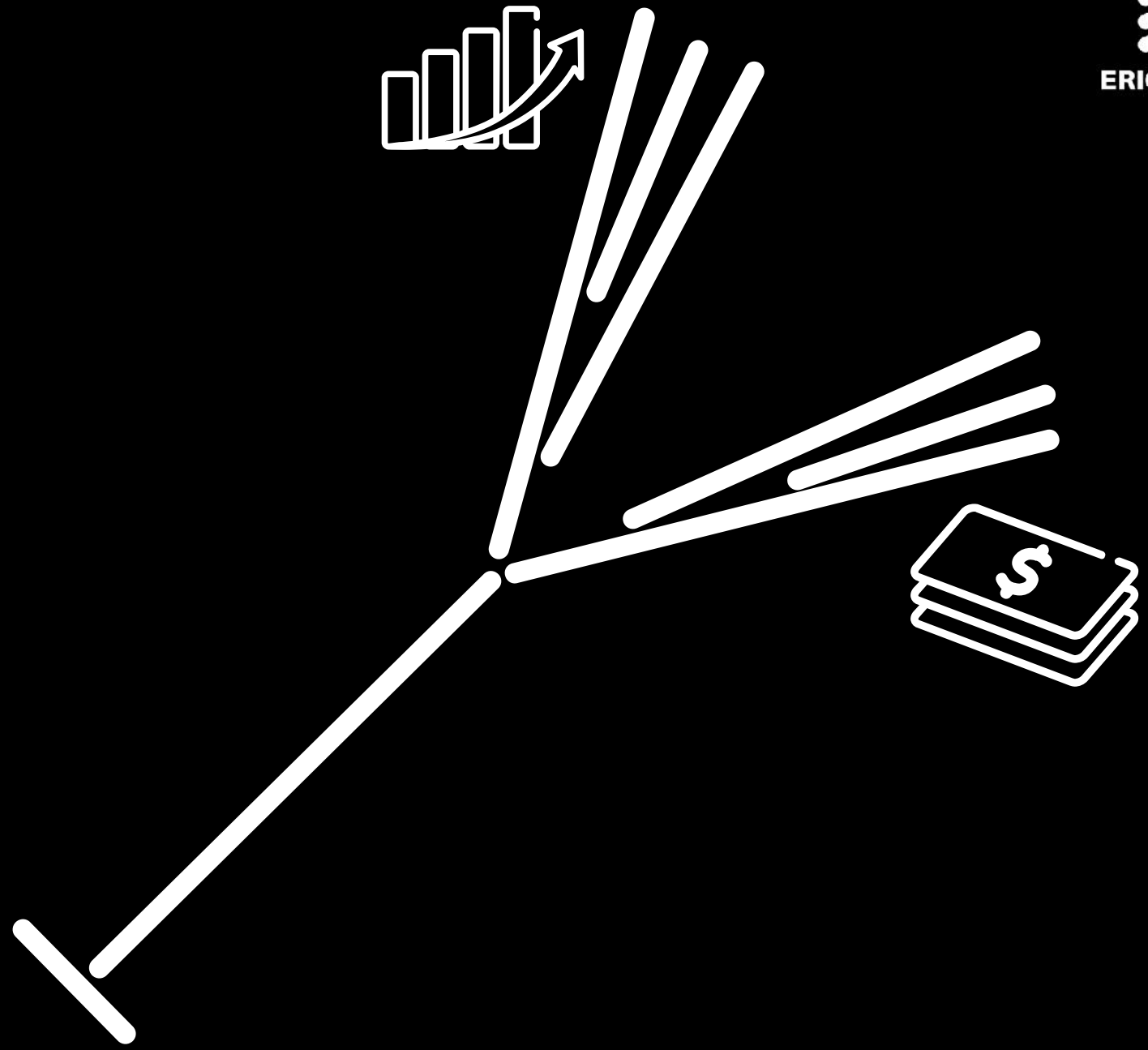
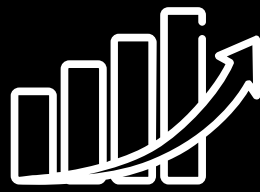
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Thank you!

