

DEUTSCHE TELEKOM CAPITAL MARKETS DAY 2018



LIFE IS FOR SHARING.

GERMANY

DR. DIRK WÖSSNER

KEY MESSAGES

01

MARKET WITH STABLE GROWTH

The German telecommunications market has returned to stable growth and Telekom is uniquely positioned within this market

02

LEAD IN CUSTOMER EXPERIENCE

Our stable top-line growth focuses on four key drivers: Expanding our converged household penetration, continuing more for more and multi-brand approach in mobile, leveraging our improved broadband networks and TV proposition, and continued low churn through best-in-class service

03

LEAD IN BUSINESS PRODUCTIVITY

“Mittelstandsinitiative 2.0” will further contribute to our strong growth momentum in the B2B market with secure ICT solutions

04

LEAD IN TECHNOLOGY – FIXED

Finalizing our super-vectoring rollout and then reallocating our high budget towards fiber will yield strong broadband growth while addressing political concerns. Our proposed co-investment will ensure a fair risk reward

05

LEAD IN TECHNOLOGY – MOBILE

Leveraging our backhaul capacity and unprecedented site expansion while increasing speed and capacity with massive MIMO, SDRAN technology and enable innovative 5G services

06

VALUE TRANSFORMATION

Indirect cost reduction of €750 mn by 2021 through automation, operational excellence, and retirement. Improvements supported by consolidating management functions, flexible IT-architecture and investing into agile development skills

07

FINANCIAL OUTLOOK

Continue our growth path of > 1% in revenue, +2–2.5% in adj. EBITDA and +4–5% in cash contribution with stable Cash Capex and Special factors (Cash)

REVIEW 2014 – 2018

GROUP STRATEGY

GERMANY

SYSTEMS SOLUTIONS

TECHNOLOGY & INNOVATION

T-MOBILE US

EUROPE

GROUP DEVELOPMENT

FINANCE

SOLID DELIVERY ON KEY PROMISES

MARKET

Ambition level 2018

- #1 in FMC with **MagentaEINS**: 3 mn customers
- #1 in **Mobile** service revenue: $\approx 1\%$ ¹ CAGR >36% market share
- #1 **Broadband**: $\approx +2\%$ CAGR > 40%² market share
- Stable **Wholesale** revenue

Achievements 2017

- 3.6 mn customers
- #1 Mobile: $+1.0\%$ ¹ CAGR > 36% market share
- #1 Broadband: $+1.1\%$ ³ CAGR $\approx 40\%$ ² market share
- $+1.2\%$ ⁴ CAGR 2014–2017

Delivered/on track



QUALITY

- **Customer loyalty** (TRI*M): ≈ 64 points

- 59 points



FINANCIALS

- Adj. **EBITDA** margin: $\approx 42\%$ (Pro Forma: $\approx 40\%$)⁵
- Growing adj. **EBITDA**: $+1-2\%$ CAGR
- Growing adj. **Cash Contribution**: $\approx +2\%$ CAGR
- **Revenue stabilization**: $+0.3\%$ ¹ CAGR

- 38.4%



- $+0.8\%$ CAGR 2014–2017



- -2.7% CAGR 2014–2017



- $+0.1\%$ ¹ CAGR 2014–2017

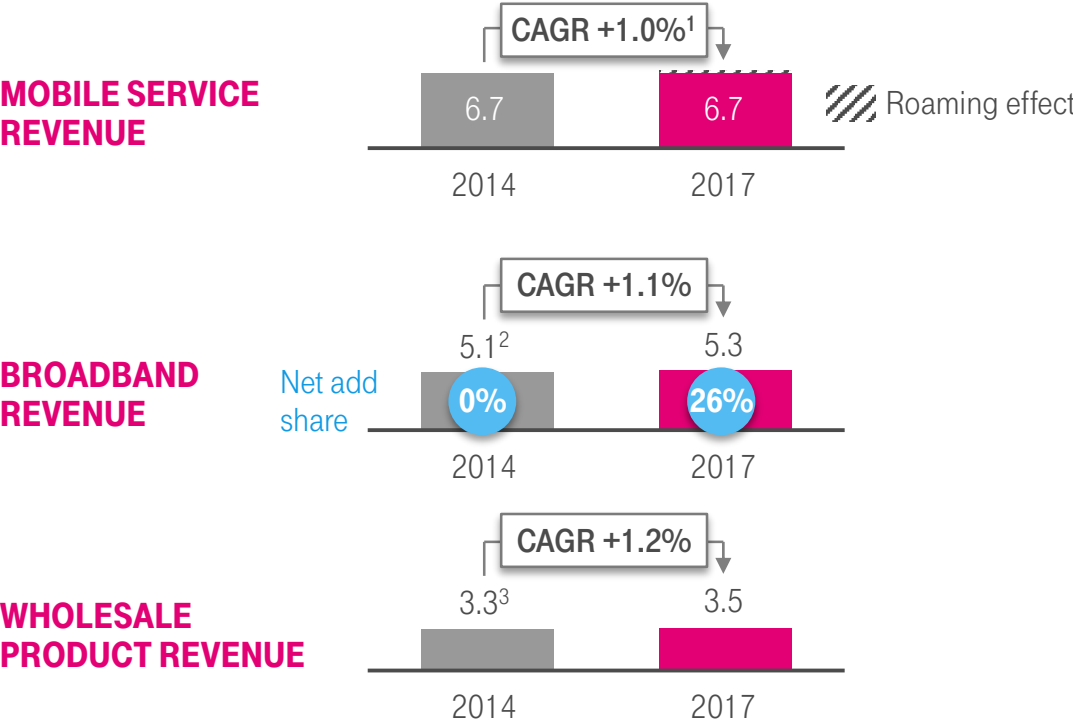


¹ Without EU roaming impact ² Access market share in 2018e ³ FY 2014 restated (supplement accesses allocated to voice only revenues) during 2015 ⁴ FY 2014 restated (€70 mn shifted from "Wholesale" to "Others") during 2015 ⁵ Excl. DFMG and VCS

GERMANY RETURNED TO GROWTH IN REVENUE & EBITDA

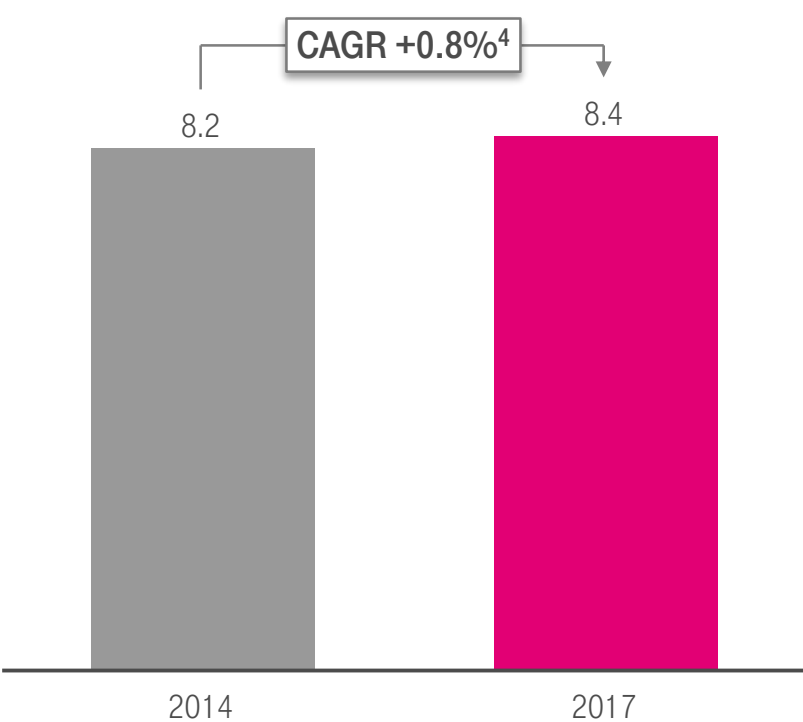
Revenue

€ bn



Adj. EBITDA

€ bn



¹ Without EU roaming impact ² FY 2014 restated (supplement accesses allocated to voice only revenues) during 2015 ³ FY 2014 restated (€70 mn shifted from "Wholesale" to "Others") during 2015 ⁴ Excl. DFMG and VCS

HEALTHY AND STABLE MARKET ENVIRONMENT ENABLES GROWTH

Market insights and trends



Stable economy with positive outlook

GDP +2.3% in 2018¹



Well segmented market.

Willingness to pay for quality & service



Stable & long-term capacity models for fixed & mobile in place



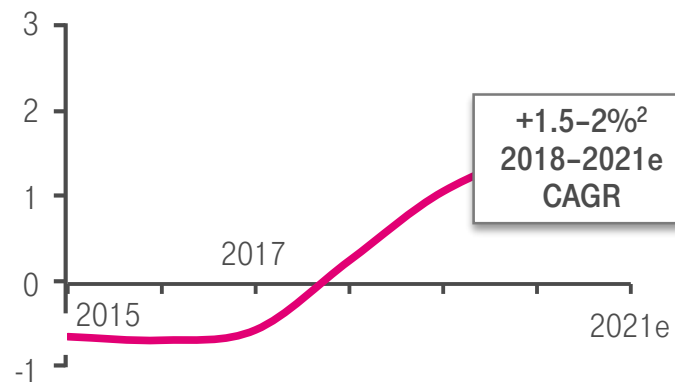
Expected improving regulatory environment

Stable IP BSA pricing until 2022,
MTR-glidepath defined until 2020

Source: ¹ BMWi estimate ² AnalysysMason/IDC ³ AnalysysMason Telco Market Aug. 2017 ⁴ Credit Suisse Research Mar. 2018

Mobile market back to growth...

Service revenue (market),
growth rate yoy, %

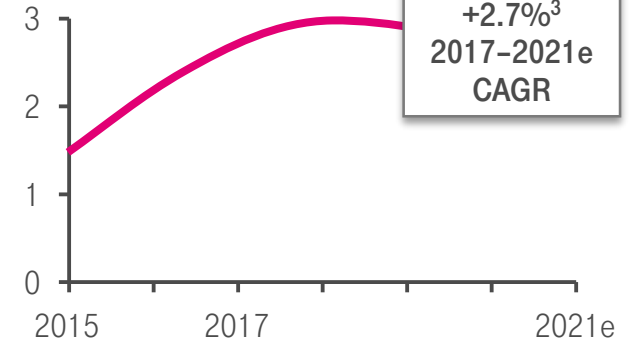


After 3 years of decline, positive development expected

- 3-player market with capacity models for MVNOs
- Catch up in mobile usage (still low average consumption in Germany)

...and still positive broadband momentum

Broadband revenue (market),
growth rate yoy, %



Broadband- & high-speed penetration supporting growth

- High-speed demand increases by ≈ 40% yoy on telco infrastructure
- Broadband growth due to low penetration (78% HH-penetration⁴)

WE ARE UNIQUELY POSITIONED IN THE GERMAN TELCO MARKET

#1

TELEKOM

MARKET LEADER IN
GERMANY

\$40 BN

Most valuable
telco brand in
Germany

3.6 MN

Lead in converged
customers

#1

B2B market leader
in Germany

+20 %¹

IT/cloud growth
leader in SMB

#1

Winner of most
telco service tests

18 MN

Most customers on
IP-platform

≈ **80** %

Most mobile sites
connected via fiber

95 %

Outstanding
winner of 95% of
all network tests

**UNLIMITED &
STREAMON**

#1 telco innovator
in Germany

¹ Growth 2016-2017

STRATEGY 2018 – 2021

GROUP STRATEGY

GERMANY

SYSTEMS SOLUTIONS

TECHNOLOGY & INNOVATION

T-MOBILE US

EUROPE

GROUP DEVELOPMENT

FINANCE

GERMANY CONTRIBUTING TO GROUP STRATEGY

Our strategy

GROW

LEAD IN CUSTOMER
EXPERIENCE

ONE CONNECTIVITY
& PERFECT SERVICE

LEAD IN
TECHNOLOGY

INTEGRATED
GIGABIT NETWORKS

LEAD IN BUSINESS
PRODUCTIVITY

SECURE ICT SOLUTIONS
& BIG IOT

SAVE FOR GROWTH INVESTMENTS

SIMPLIFY, DIGITALIZE, ACCELERATE

Ambition Germany

- 1 LEAD IN CUSTOMER EXPERIENCE**
Strengthen market leadership with stable top line growth in consumer market
- 2 LEAD IN BUSINESS PRODUCTIVITY**
Continue strong growth momentum in B2B with secure ICT solutions (“Mittelstandsinitiative 2.0”)
- 3 LEAD IN TECHNOLOGY**
Maintain network leadership based on demand driven network rollout within stable Capex budget
- 4 VALUE TRANSFORMATION**
Clear commitment to efficiency improvements driven by digitalization

1 LEAD IN CUSTOMER EXPERIENCE



Key growth drivers



CONVERGENCE

Expanding our converged household penetration with MagentaEINS



MOBILE

Continuing our successful more for more multi-brand approach



BROADBAND/TV/WHOLESALE

Leveraging our improved fiber network & TV proposition



SERVICE

Continuing low churn through best-in-class service

1 CONVERGENCE: CONTINUE MAGENTA EINS SUCCESS STORY

More for more strategy pays off



HIGHER REVENUE PER HOUSEHOLD

+€9.00

Additional revenue per household



HIGHER CUSTOMER LOYALTY

-50%

Churn rate (mobile/fixed)



HIGHER CUSTOMER SATISFACTION

+19pts

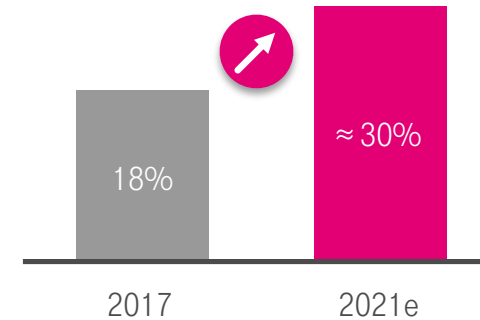
Net Promoter Score vs. consumer base¹

¹ Average of last four data points of Consumer segment NPS vs. MagentaEINS

Growing converged base with focus on value

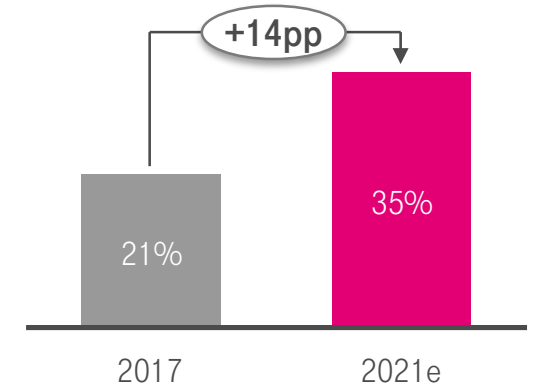
Cross-sell into base and add additional SIM cards/family offers

Share MagentaEINS households/broadband households, %



Secure high share of revenue in converged offer

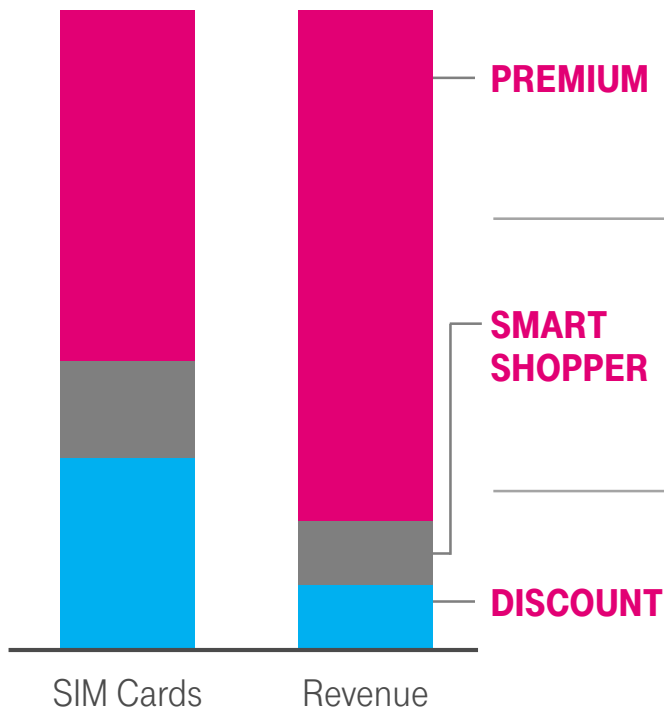
MagentaEINS revenue share, %



1 MOBILE: RELEVANT MARKET SEGMENTS ADDRESSED

Multi-brand strategy with clear focus on premium segment

Market value distribution¹



- Focus on defending leading position with innovative services (e.g. StreamOn, Unlimited)
- Differentiate through handset portfolio and pricing



- Aim for fair-share through fast-follower strategy with flexible “build-yourself” tariffs
- Strong digital heritage & reactive pricing strategy



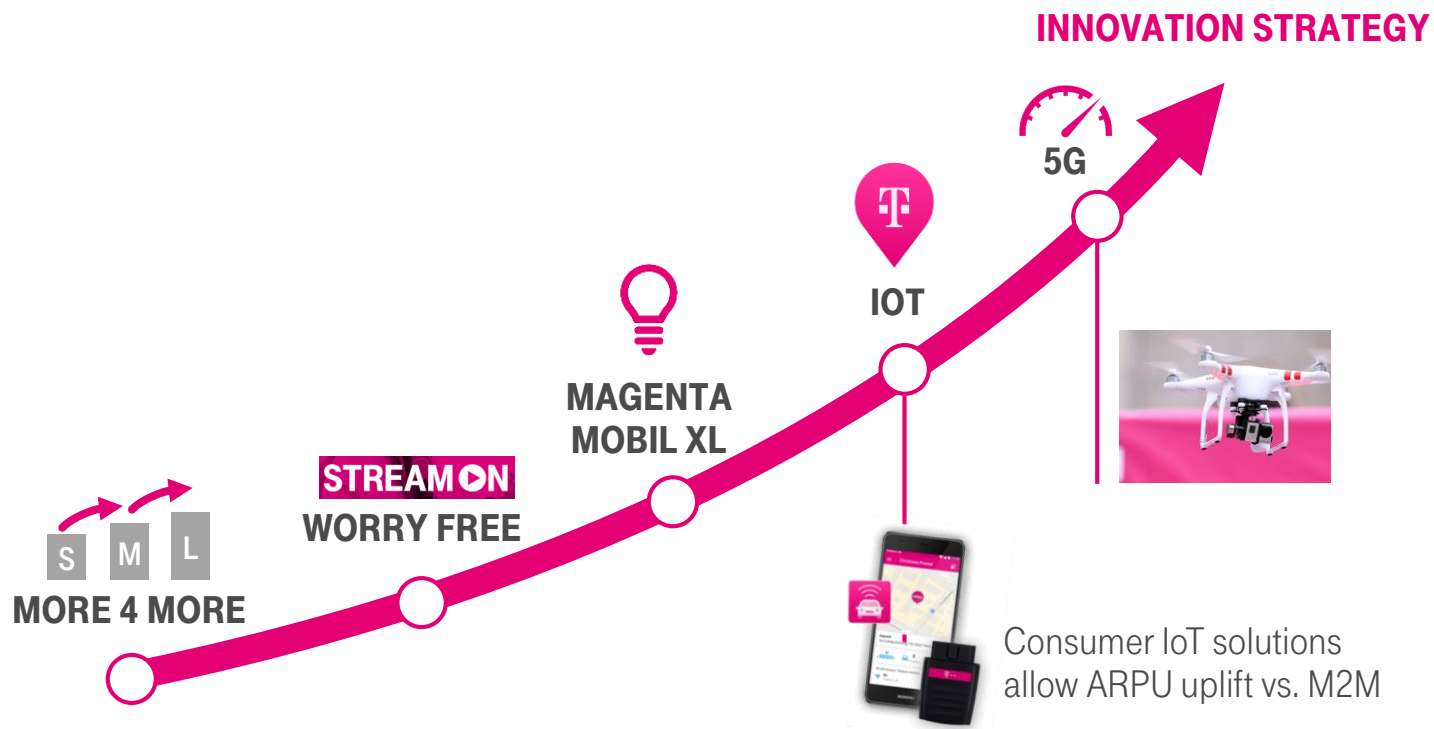
- Underindexed and focus on revenue stabilization
- Balanced channel presence through wholesale brands & retail partnerships



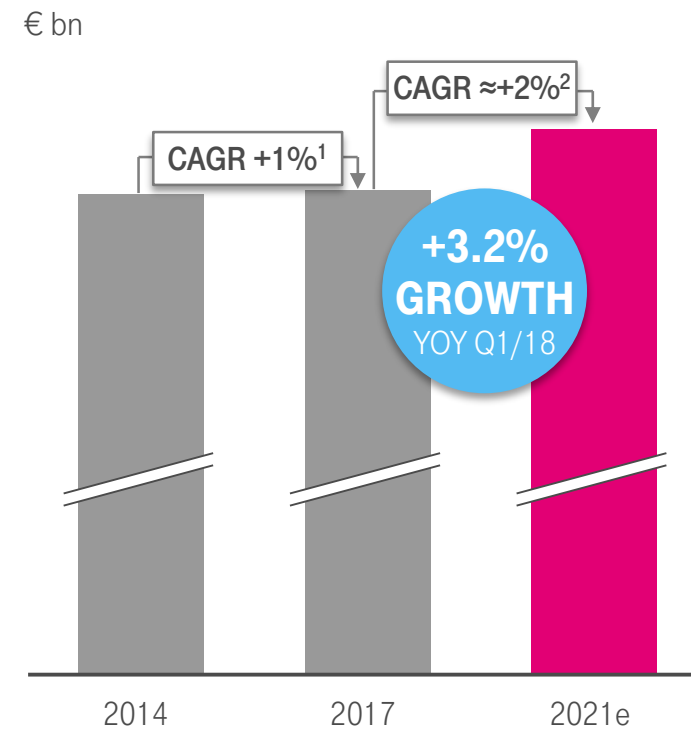
¹ Rough estimation based on internal market survey

1 MOBILE: DIFFERENTIATION WITH INNOVATION & MORE FOR MORE

Innovative more for more strategy



Mobile service revenues



¹ Without EU roaming impact ² Average growth rate adjusted for IFRS 15 impact; 2021e visually adjusted for IFRS 15

1 BROADBAND: GROWTH WITH FTTX COVERAGE & SPEED

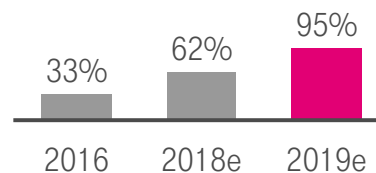
Broadband revenue growth drivers



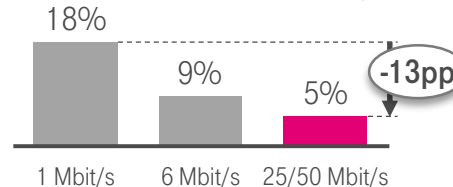
BANDWIDTH INCREASE

Higher speeds yield low churn and good gross-add momentum

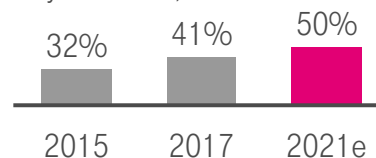
Availability of ≥ 50 Mbit/s



Broadband churn rate 2017, %

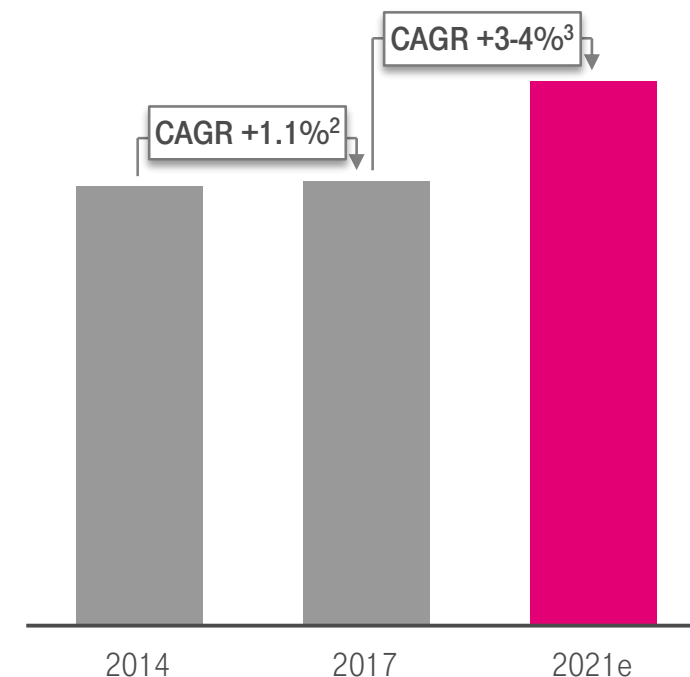


Pay-TV share, %¹



Broadband revenues

€ bn



TV GROWTH

Smart content investments & leading platform increase broadband attractiveness

¹ Customers with at least one booked paid package

² FY 2014 restated (supplement accesses allocated to voice only revenues) during 2015

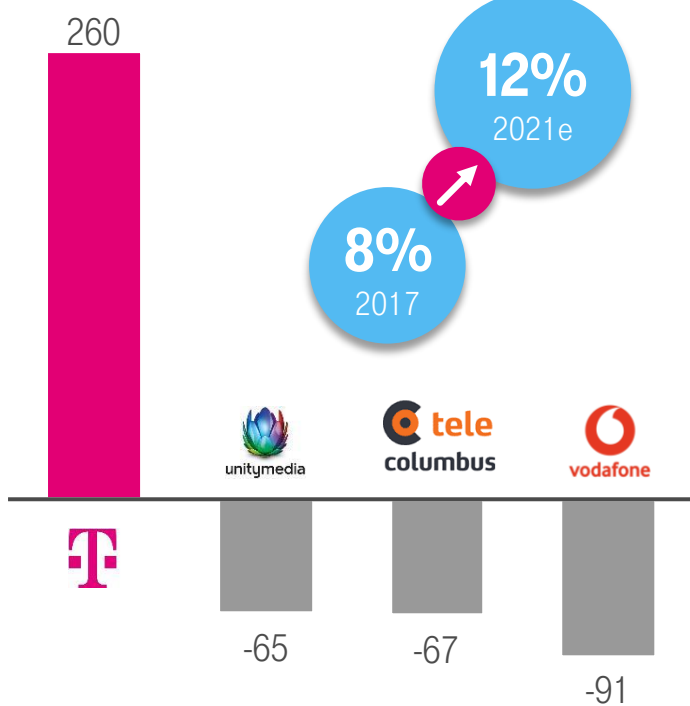
³ Including business IP products (e.g. DLAN, Company Connect); average growth rate adjusted for IFRS 15 impact; growth 2017-2021e without definition change approx. 1 pp lower

1 TV: CONTENT AGGREGATOR WITH SMART INVESTMENTS

TDG is the only growing TV operator

TV net adds FY 2017, k¹

TV market share, %



¹ TDG including Entertain IPTV and Sat, Vodafone Coax and IPTV lines, Telecolumbus incl. Primacom & Pepcom ² Since start in Oct. 2017

Our differentiators drive further growth



BEST CONTENT AGGREGATOR

- Exclusive series: 3.7 mn views²
- Smart content investments with high customer perception



BEST USER INTERFACE

- Award winning experience: Best image/audio quality
- Differentiating features: Voice control, 2nd screen, mobile app



LEAD IN SPORTS CONTENT

- Most popular sports content: Bundesliga Conference & 3. Liga
- Exclusive sports rights: BBL, Ice hockey



NEW TARGET AUDIENCE

- Focus on young audience
- New segments: Housing industry

1 WHOLESALE: DRIVING GROWTH WITH FIBER MONETIZATION

Stable Wholesale access base & ARPA growth



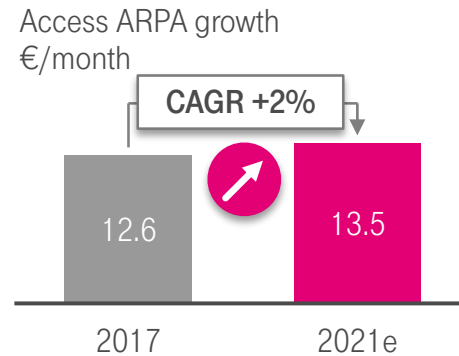
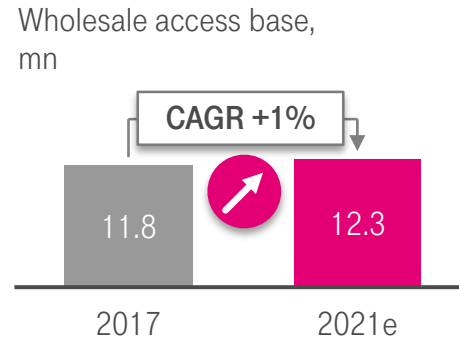
SUBSCRIBER GROWTH

- “Kontingentmodell” as reliable long-term model to provide access to our fiber infrastructure
- Low churn due to attractive wholesale platform (bandwidth)

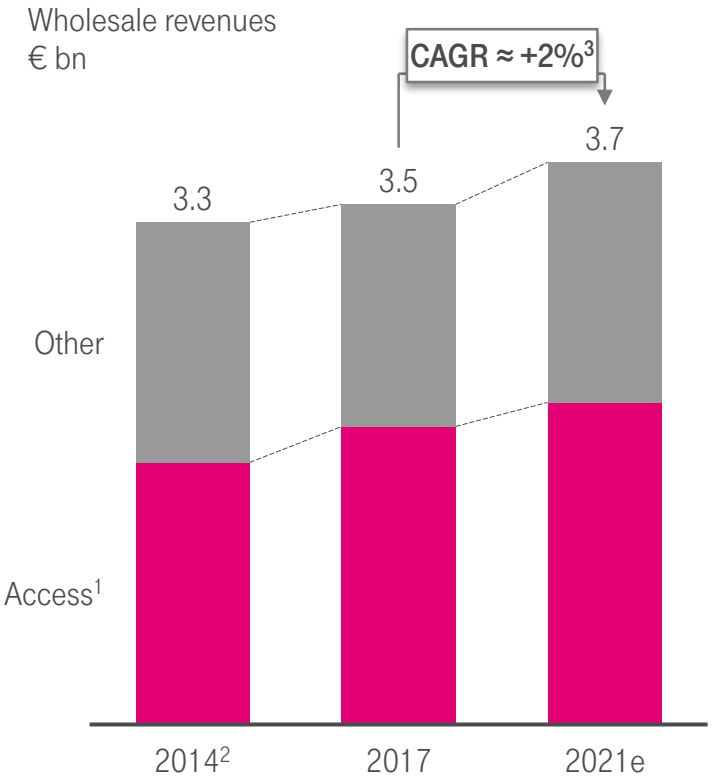


ARPA GROWTH

- ARPA increase driven by shift ULL/BSA
- Stable regulatory environment (fixed IP BSA pricing up to 2022)



Ambition



¹ Carrier customers ² FY 2014 restated (€70 mn shifted from “Wholesale” to “Others”) during 2015 ³ Average growth rate adjusted for IFRS 15 impact

1 SERVICE: TOWARDS A LEADING CUSTOMER EXPERIENCE

Leading customer experience in products and service



PROACTIVE

- **Big data analytics** for early fault detection
- **Proactive customer information** in case of critical incidents, contract changes, IP migration, etc.

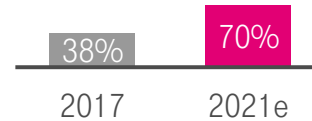
SMS/year for proactive customer interactions



FLEXIBLE & DIGITAL

- **Self-service** via Mein Magenta App for reduction of service calls (e.g. contract status & changes, invoice, data usage)
- **Self-administration** for SMB (e.g. Cloud PBX)

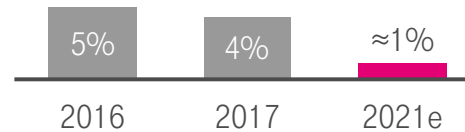
Share of resolved requests in digital channels, %¹



SIMPLE & SEAMLESS

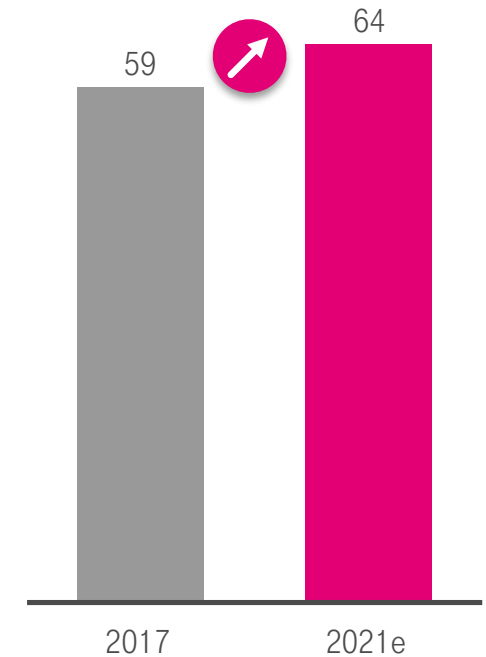
- **Simplification** of product portfolio
- **Seamless customer service** on all channels (e.g. web, hotline, shop)

Rate of complaints, %



Ambition

Customer loyalty (TRI*M), in points



¹ E-Service Share Interaction, year end 2017

2 LEAD IN BUSINESS PRODUCTIVITY



B2B growth areas



CONNECTIVITY & INFRASTRUCTURE

Mobile, fixed network, cloud IaaS and M2M



AGILE WORKPLACE

Smartphone, tablet, notebook and office software



BUSINESS APPLICATIONS

Horizontal, vertical and cloud SaaS

2 MITTELSTANDSINITIATIVE 2.0: SECURE ICT SOLUTIONS FOR SMB

B2B market leadership driven by digitalization

MITTELSTANDS-INITIATIVE
1.0
2014-2017

- **Growth in mobile & broadband revenues**
- **IT solutions:** SAP & cloud infrastructure for SMB with automatic provisioning
- **Business connectivity solutions**
- **Security:** Mobile security & firewall solutions

CAGR 2014-2017

+1% ✓

+19% ✓

+11% ✓

+17% ✓

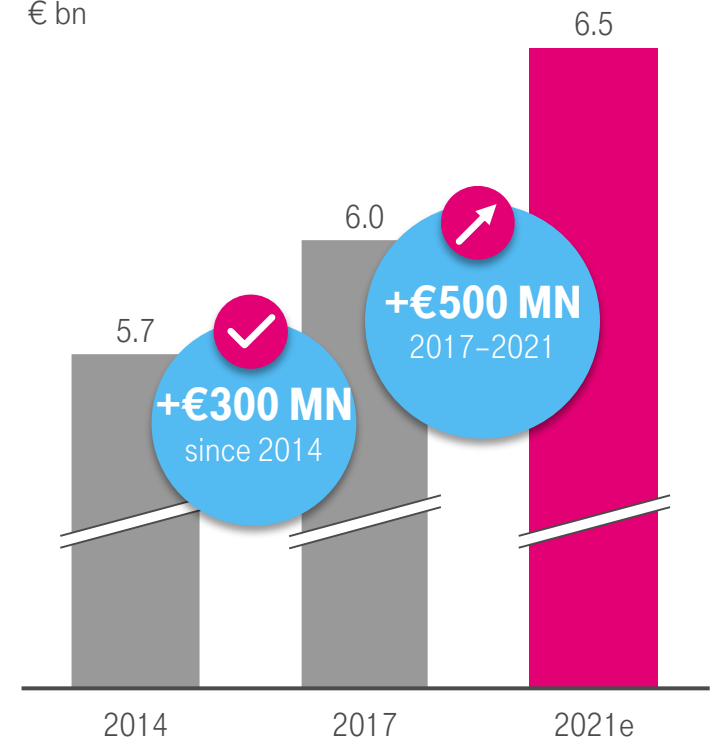
MITTELSTANDS-INITIATIVE
2.0
2018-2021

- **Further growth in mobile & broadband**
- **Connectivity & infrastructure:** M2M/IoT
- **Agile workplace:** Cloud PBX & office solutions
- **ICT solutions & business applications**



Ambition

€ bn



3 LEAD IN TECHNOLOGY



Drivers for network leadership



FIBER ROLLOUT

FTTH/B rollout with intelligent area and technology mix within stable Capex envelope



COOPERATION & CO-INVEST MODELS

Increase of coverage with intelligent cooperation models



MOBILE

Extension of leading mobile network position in reach and quality



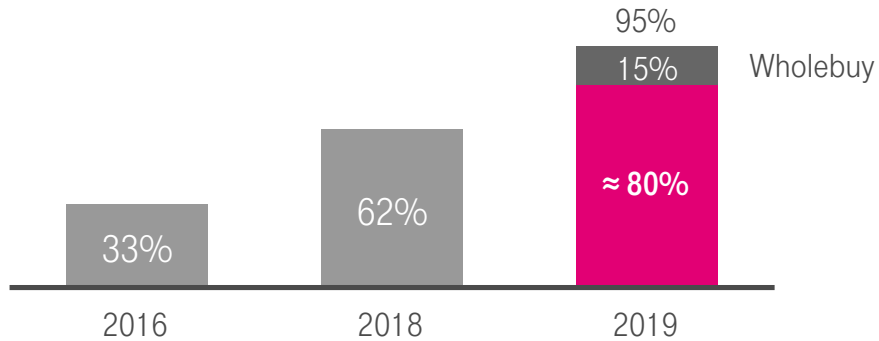
NETWORK INNOVATION

Innovation leader in 5G network technology and efficient rollout technology

3 FIBER ROLLOUT: NOT MANY WHITE SPOTS LEFT

TDG building the leading infrastructure in Germany

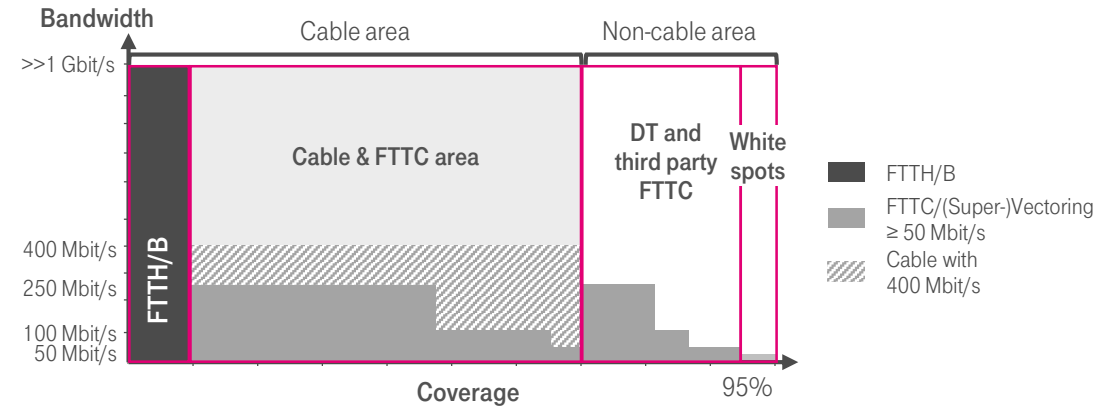
Vectoring coverage



- ✓ Reaching ≈ 80% HH coverage with vectoring in 2019 (≈ 62% in 2018)¹
- ✓ ≥100 Mbit/s in 70% of HH (in 2019)
- ✓ Introduction of Super-Vectoring (up to 250 Mbit/s)
- ✓ Wholebuy potential 15% (in 2019)

15 MN
homes connected with Super-Vectoring by end of 2018

Expected market broadband coverage end of 2019²

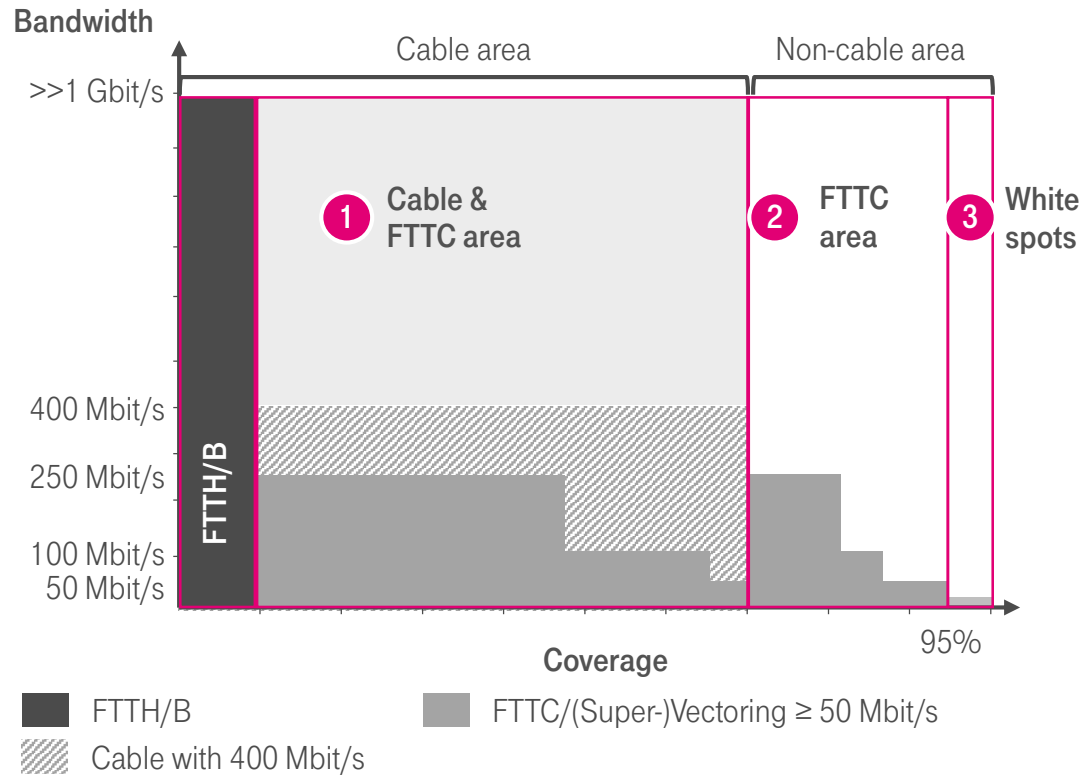


- Only 5% “white-spots” end of 2019
- 70% coverage with 1 Gbit/s by **cable** expected
- Further **subsidies** expected

¹ Bandwidth ≥50 Mbit/s, delayed due to long regulatory process ² Schematic illustration

3 FIBER ROLLOUT: SMART AREA AND TECHNOLOGY MIX

Expected German broadband coverage end of 2019¹



¹ Schematic illustration

Rollout priorities



B2B areas

Connecting 80% of businesses in business parks with fiber (by early 2020s)



1 Cable area



2 FTTC area

Areas with strong competition and winback potential for customers lost to cable/other operators



3 White spots

Subsidized rollout of areas with very low bandwidth and high customer demand



Cooperations & co-invest models

Shared investment for efficient rollout & wholebuy

3 COOPERATIONS AND CO-INVEST MODELS

Cooperation models



JOINT VENTURES

- **Joint rollout** of fiber infrastructure with **larger regional carriers** (e.g. EWE)



RENTING NETWORK ELEMENTS

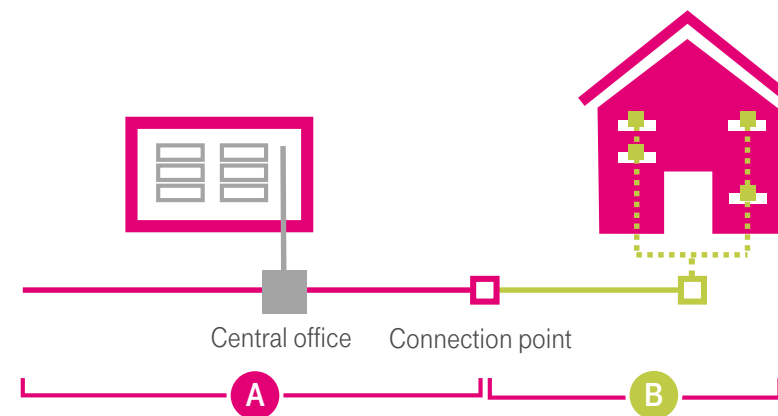
- **Renting complementary infrastructure** from regional players (e.g. municipal services)



WHOLEBUY

- **Renting infrastructure & active equipment** based on **commercial wholesale** models (market potential 15% in 2019)

Investment oriented & fair commercial models



OPEN NETWORK, BASED ON FAIR RETURN, RISK SHARING, AND RECIPROCITY

- A** Commitment Model with **annual upfront payments** for bitstream connection fee
- B** **Investment oriented connection fee** per line charged to **retail service provider**

3 FIBER ROLLOUT: RAMPING UP TO 2 MN HOMES PER YEAR

Guardrails fiber rollout



SMART INVESTING

- Improving rollout efficiency with trenching, data driven rollout, and “FTTH factory”
- Status 2020: ≈ €1,000 per home passed¹



SMART AREA & TECHNOLOGY MIX

- Smart area mix between B2B areas, competitive areas, FTTC areas and white spots
- Efficient technology mix with FTTH, FTTB and WTTB (potential: 20–30% of homes where we have fiber available)



SMART COOPERATION & CO-INVEST

- Joint fiber rollout with regional players (e.g. EWE)
- DT will sell and buy wholesale fiber access based on fair return, risk sharing and reciprocity

MAINTAINING
STABLE CAPEX €4.2 BN
P.A.²

MINIMUM IRR
7.5%³

RAMPING UP TO
2 MN HOUSEHOLDS
P.A. BY 2021

SHARING INVESTMENT RISKS
WITH PARTNERS

¹ Incl. area & technology mix ² Stable total Cash Capex vs. 2017 ³ Internal Rate of Return for FTTB/H

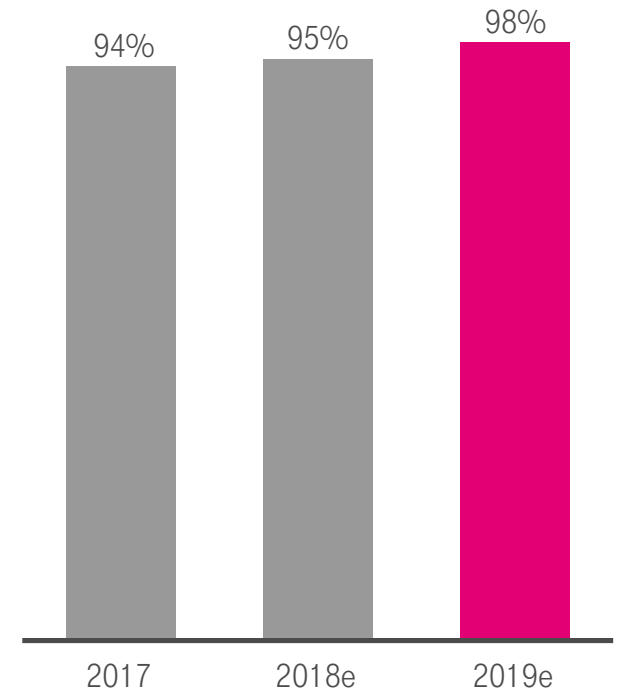
3 MOBILE: BEST NETWORK IN GERMANY



Reach of LTE network

- ✓ ≈ 80% mobile sites connected via fiber
- ✓ 27,000 mobile sites end of 2017
- ✓ Winner of all major mobile network tests

LTE Pop coverage



3 MOBILE: EXTENDING MOBILE LEADERSHIP POSITION

Key priorities



NETWORK EXPANSION

- Unprecedented site expansion (≈ 2,000 additional sites p.a.)
- Differentiation with **customer driven rollout**



QUALITY IMPROVEMENT

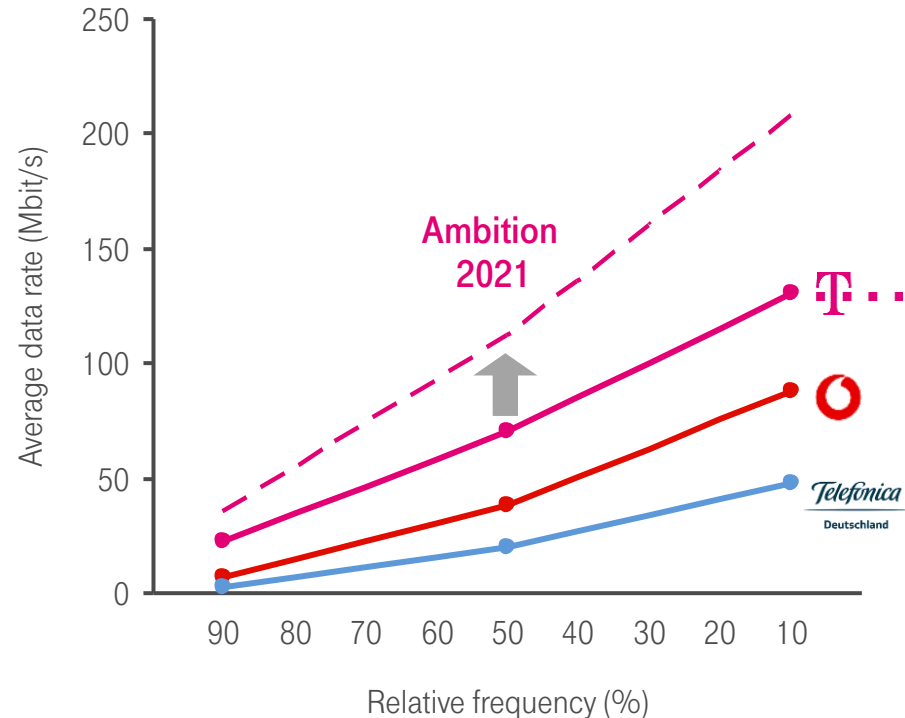
- Improve **coverage of highways & train tracks**
- Enhance **indoor coverage & quality**
- Extend lead in **fiber backhaul**



NETWORK INNOVATION

- **Top-speeds in city-centers of 1 Gbit/s**
- Increase of capacity with **massive MIMO**
- **Mobile Edge** for low latency use cases

Ambition: Best customer experience



Source: Connect Mobile Network Test 2018

3 NETWORK INNOVATION: FORERUNNER IN 5G TECHNOLOGY

5G enabling new speed and efficiency levels

1,000x

HIGHER NETWORK CAPACITY

10x

LOWER LATENCY

10x

HIGHER SPEED

>10 Gbit/s

4x

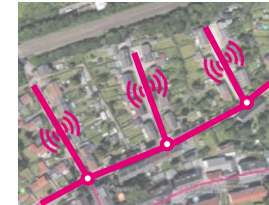
INCREASED EFFICIENCY

€/Mbit/s as efficiency factor¹

¹ Network capacity costs per incremental busy hour capacity

Pilot use cases with strong partners

WTTH/FWA
POTENTIAL



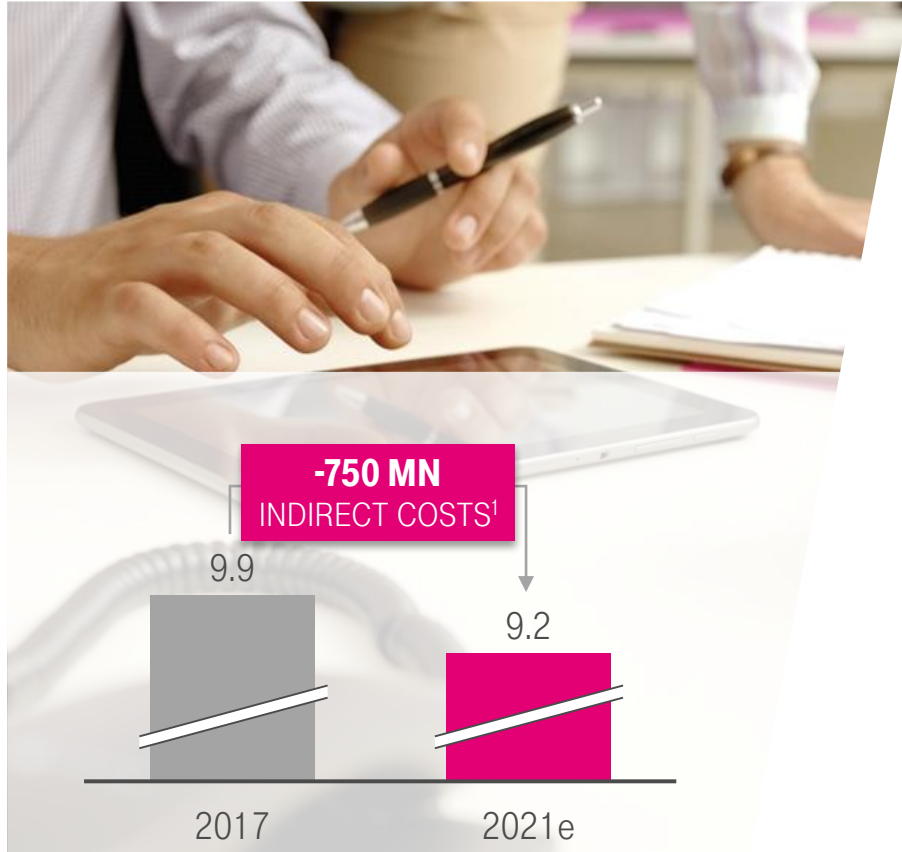
- Trials successfully completed
- Capex savings potential through synergetic rollout with FTTH

5G PILOT
CASES WITH
STRONG
PARTNERS



- Pilot cases already initiated
- Innovative solutions leveraging 5G features (e.g. drones, Augmented Reality, remote maintenance)

4 VALUE TRANSFORMATION



¹ Net cost reduction

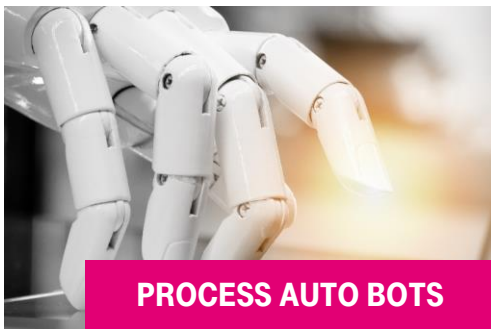
Key drivers for cost reduction

	<p>AUTOMATION Data analytics and smart processes</p>	<p>€300 MN</p>
	<p>OPERATIONAL EXCELLENCE Predictive servicing and maintenance, less complaints and process optimization</p>	<p>€250 MN</p>
	<p>PLATFORM RETIREMENT Retirement of platforms, investment in state-of-the-art infrastructure</p>	<p>€200 MN</p>
	<p>LEAN & AGILE ORGANIZATION Lean commercial and sales units, agile central functions and reduction of executive functions</p>	

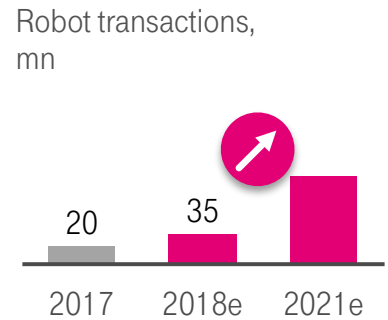
4 AUTOMATION: BOTS FOR CUSTOMER INTERACTIONS AND SIMPLIFYING PROCESSES

€300 MN Savings

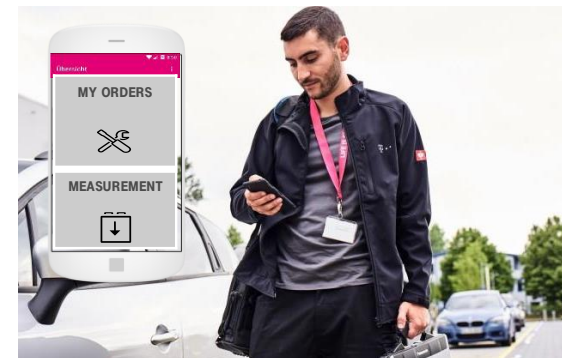
Key drivers for cost reduction



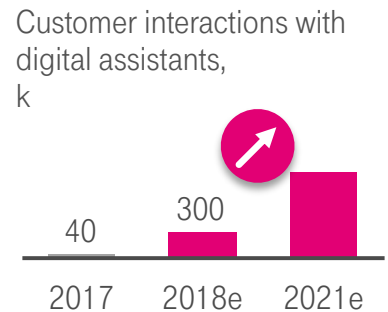
- **Agile bot development** to automatize repetitive tasks
- Significant **reduction of development time** compared to traditional IT
- **1,500 bots** implemented in 2017



Example: Field Service App



- **Chat bots** for improved experience & efficiency in customer interaction
- **AI supported chat** to improve service experience



- **E2E field service process** in a single app
- **Optimized processes** and handover in technology & service
- **Dynamic workflow** to avoid manual errors



4 OPERATIONAL EXCELLENCE: IMPROVING SERVICE PROCESSES

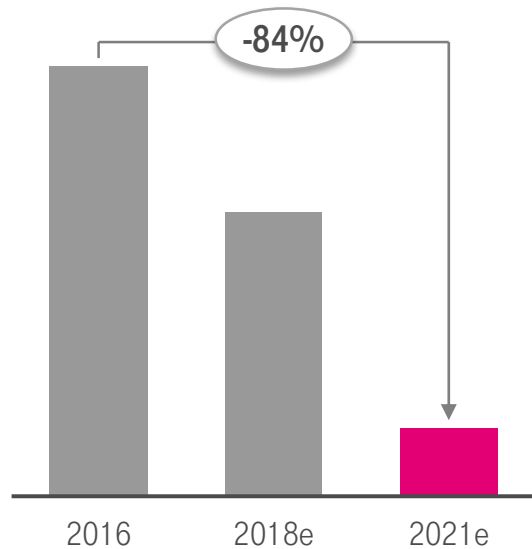
€250 MN Savings

Reduction of complaints through efficiency measures and self-service

Ambition



Customer complaints per quarter



Mein Magenta App as central contract management tool

Data analytics to solve occurring issues in advance

Training of experts to solve requests in first contact

Dedicated product teams ensure end-to-end quality

Self-Service

Reliability

Service Quality

Product Quality

4x Monthly App usage

≈99% Adherence to appointment 2021¹

>80% Contact resolution rate in 2021²

70 PTS. TRI*M Entertain TV

¹ 2017:92% ² Q1 2018: 66%, survey based on customer SMS feedback within 24 hours

4 PLATFORM RETIREMENT: SIMPLIFICATION AND END OF LIFE

€200 MN Savings

Key drivers for cost reduction



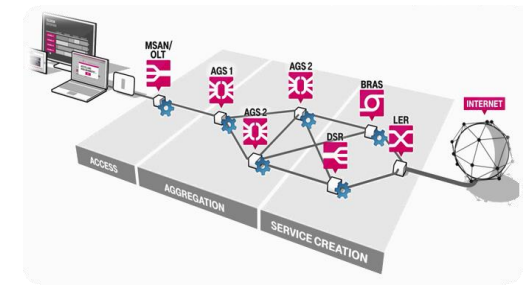
- **Standardized production model** for all access technologies
- **BNG migration and IP transformation** for mass market will be finished in 2019
- **Retirement of multiple legacy transport platforms** and closing of locations



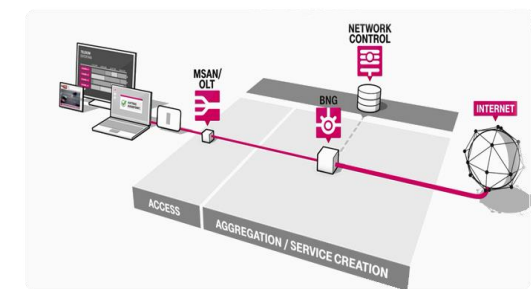
- **Micro-service architecture** and increased use of **open source technologies**
- **Decoupling of architecture** and **retirement of older IT platforms**
- **Agile methodologies** to improve delivery time

Example: BNG transformation

Legacy architecture



Today's architecture



4 LEAN AND AGILE ORGANIZATION: ACCELERATED DECISIONS AND IMPROVED COLLABORATION

Key areas of agile methods and organization



- Consolidation of **management functions** and reduction of **hierarchy** to foster accountability
- Introduction of **product-tribes** and **skill-based chapters**



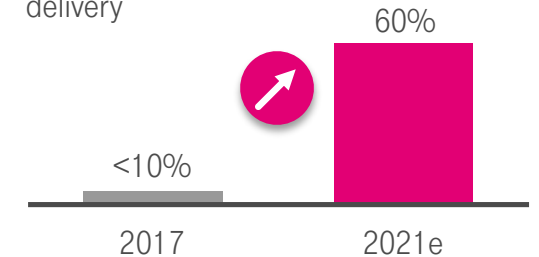
- Strong focus on **software and product development**
- Improve time to market by **agile delivery processes**
- Strong usage of **AI & big data analytics**



- **Reskilling** for future capabilities
- **Agile methodology** like scrum or design thinking as standard of collaboration
- **Agile Academy** launched in Jan 2018

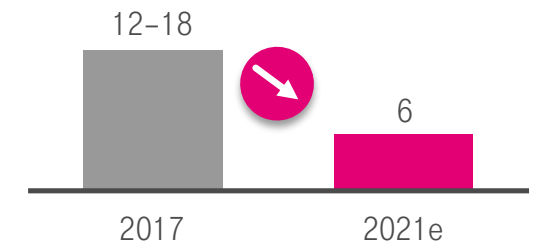
Increased agility...

Share of projects with agile/flexible delivery



... for faster time to market

Average delivery time of software projects, months



FINANCIAL OUTLOOK

GROUP STRATEGY

GERMANY

SYSTEMS SOLUTIONS

TECHNOLOGY & INNOVATION

T-MOBILE US

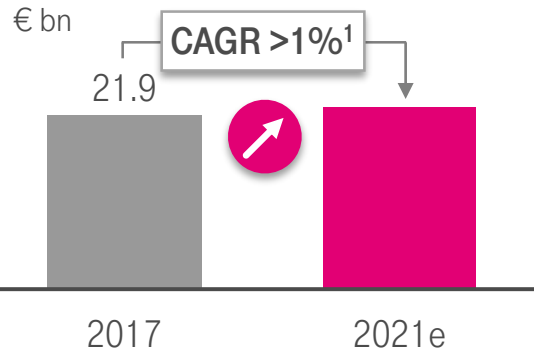
EUROPE

GROUP DEVELOPMENT

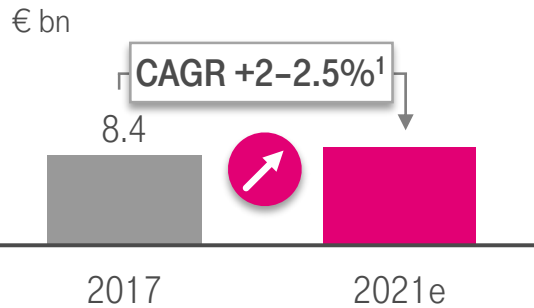
FINANCE

FINANCIAL OUTLOOK

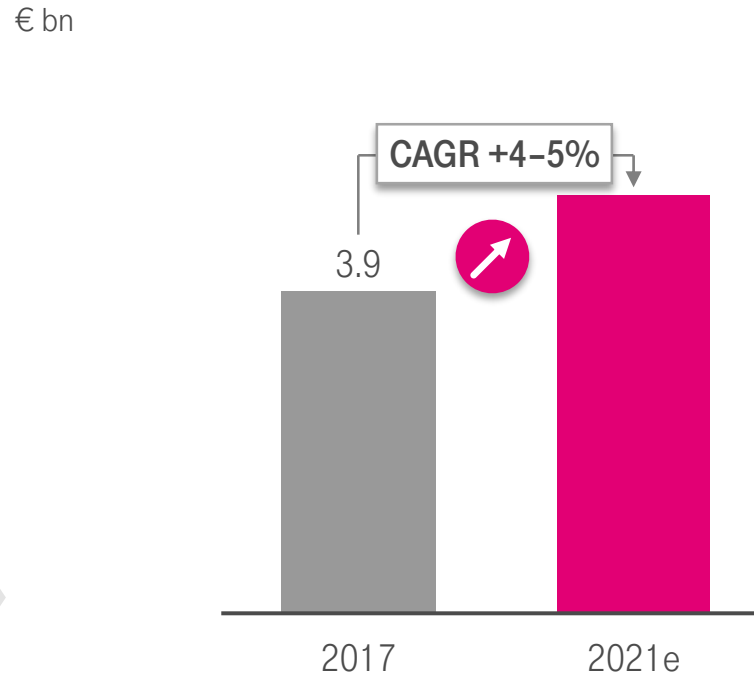
Revenue growth



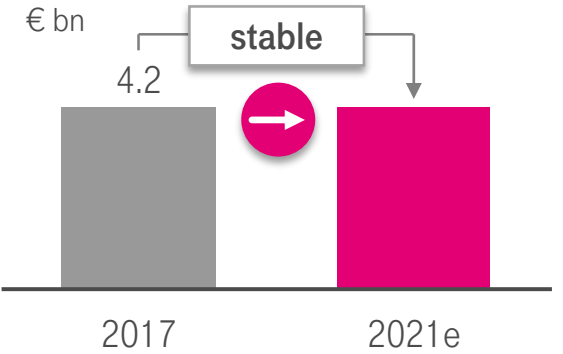
Adj. EBITDA



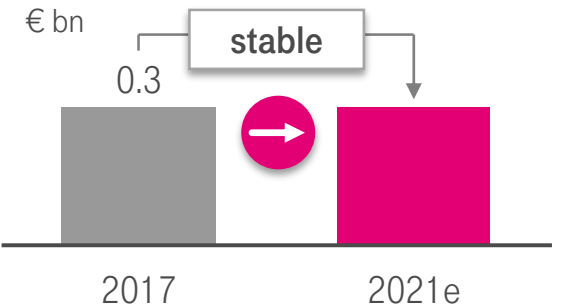
Cash Contribution²



Cash Capex



Special factors (Cash)



¹ Average growth rate not adjusted for IFRS 15 impact

² Cash Contribution = Adj. EBITDA – Cash Capex – Special factors (Cash)

MID TERM AMBITION LEVEL

GROUP STRATEGY

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FINANCE

MID TERM AMBITION LEVEL

LEAD IN CUSTOMER EXPERIENCE

Mid term ambition level

Year

- #1 in **Mobile** service revenue: CAGR \approx +2%¹
- #1 **Broadband** revenue: CAGR +3–4%²
- **MagentaEINS** share of broadband households: \approx 30%

2017–2021e
2017–2021e
2021e

LEAD IN BUSINESS PRODUCTIVITY

- Growing **B2B** revenues by +€500 mn

2017–2021e

LEAD IN TECHNOLOGY

- Ramping up to **2 mn households** p.a.

by 2021e

VALUE TRANSFORMATION

- Reduction of **Indirect cost** by €750 mn (net)

2017–2021e

FINANCIALS

- Growing **Revenue**: CAGR > 1%³
- Growing adj. **EBITDA**: CAGR +2–2.5%³
- Growing **Cash Contribution**⁴: CAGR +4–5%

2017–2021e
2017–2021e
2017–2021e

¹ Average growth rate adjusted for IFRS 15 impact ² Including business IP products (e.g. DLAN, Company Connect); average growth rate adjusted for IFRS 15 impact; growth 2017–2021e without definition change approx. 1 pp lower
³ Average growth rate not adjusted for IFRS 15 impact ⁴ Cash Contribution = Adj. EBITDA – Cash Capex – Special factors (Cash)