



Why satellites matter

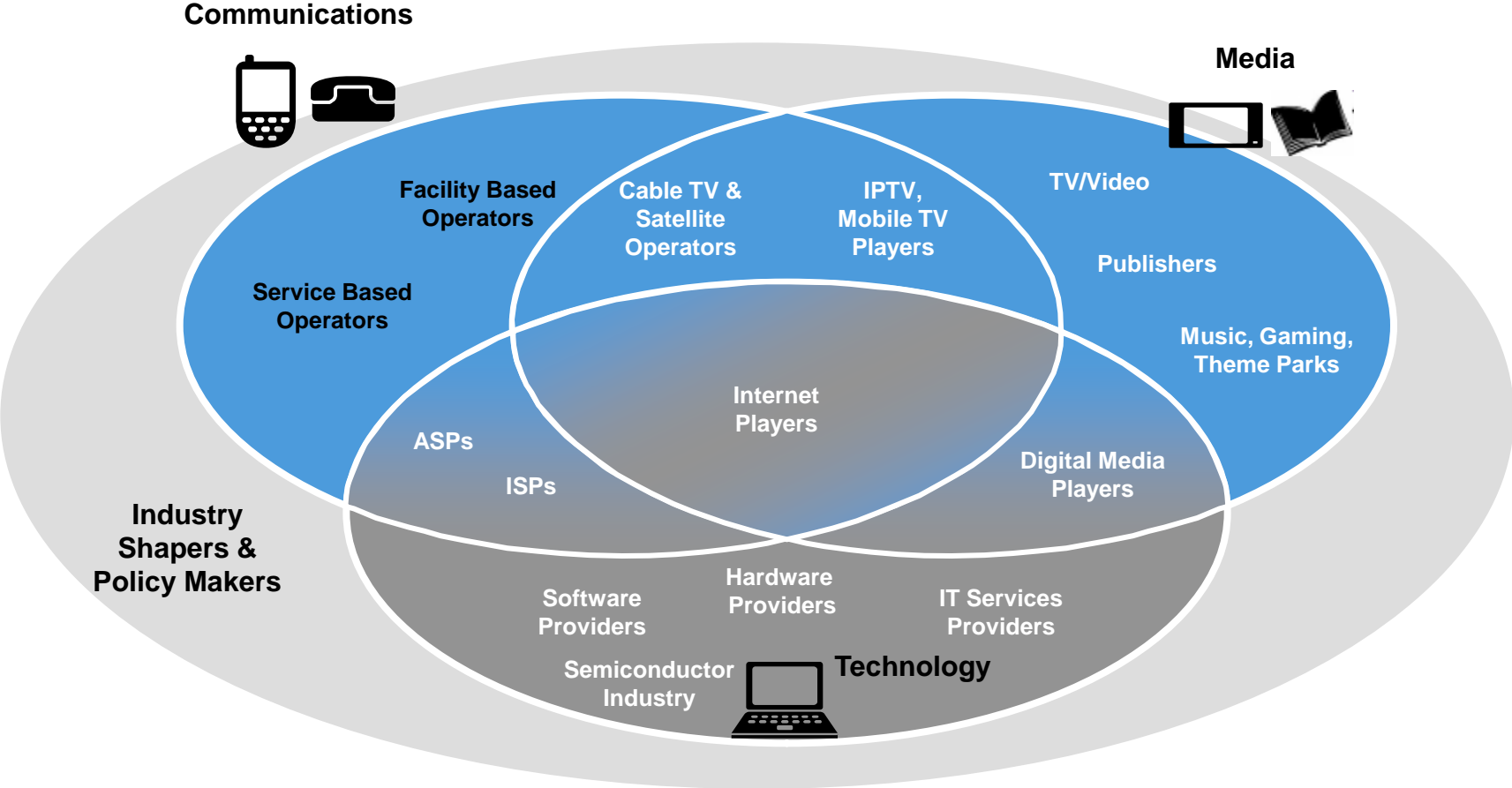
The relevance of commercial satellites in the 21st century – a perspective 2012-2020

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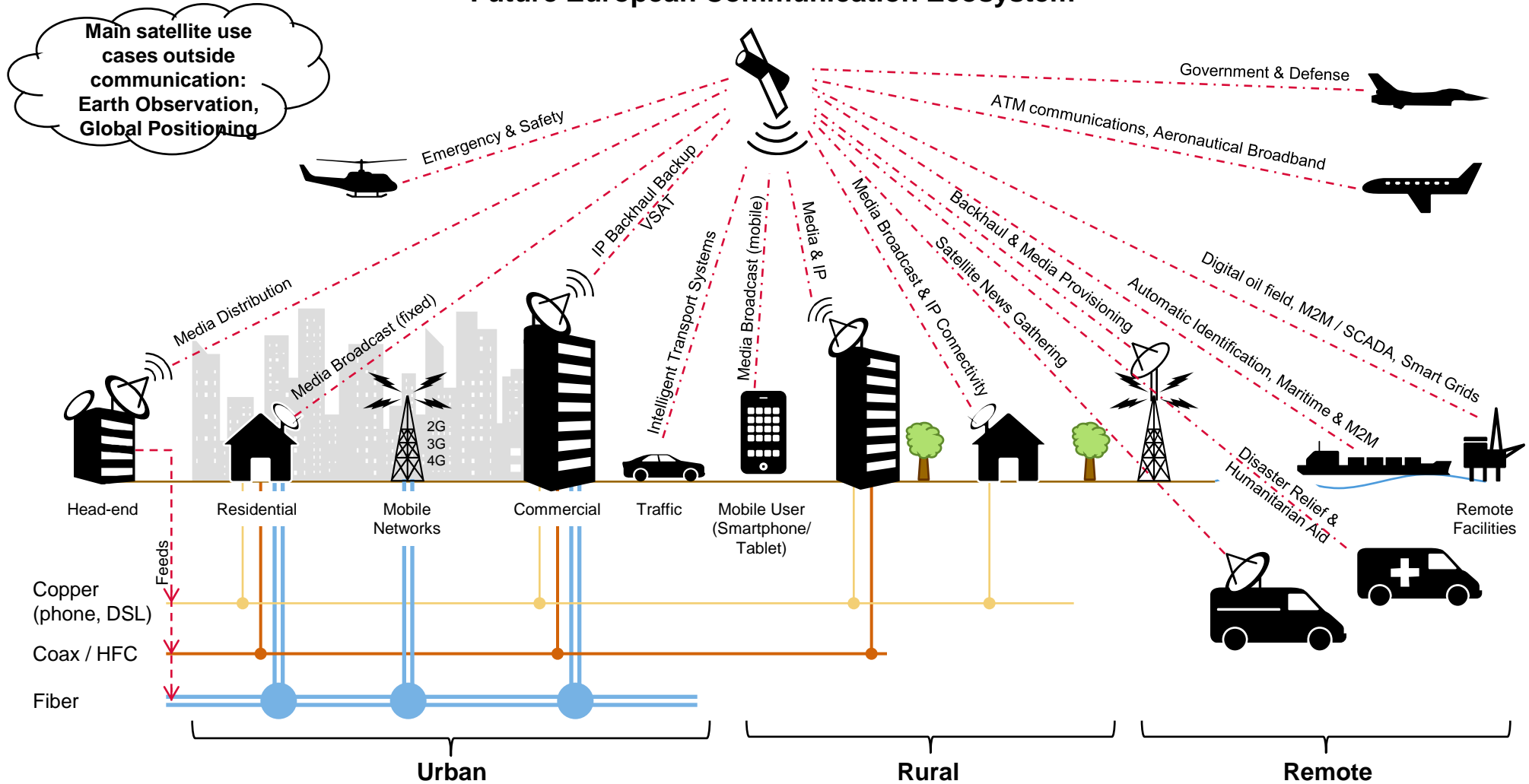
Booz & Company is a global management consultancy which works across Communications, Media and Technology industry sectors...

Booz & Company CMT Industry Coverage

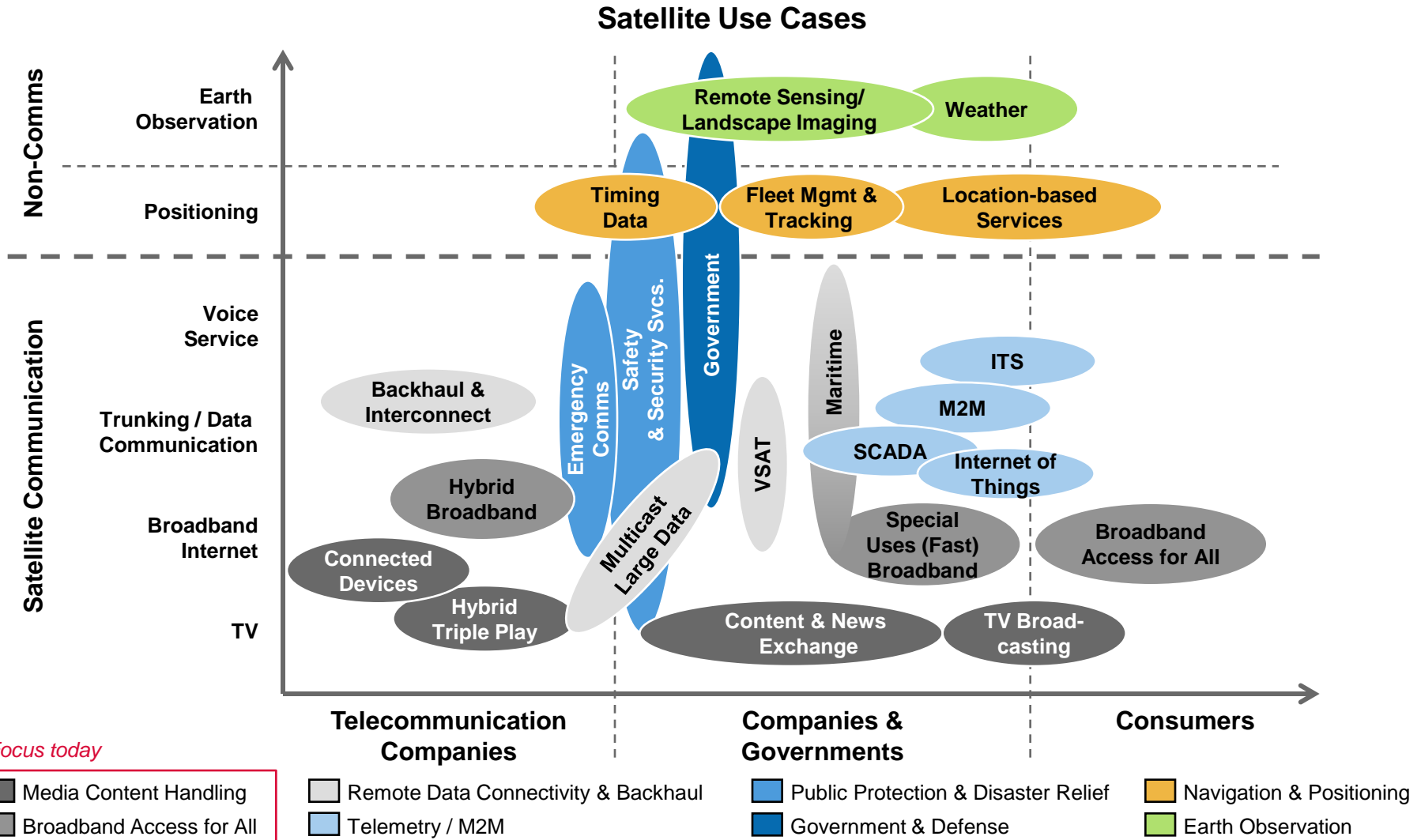


We deeply believe, satellite has to play a key role in an efficient future European communication ecosystem

Future European Communication Ecosystem

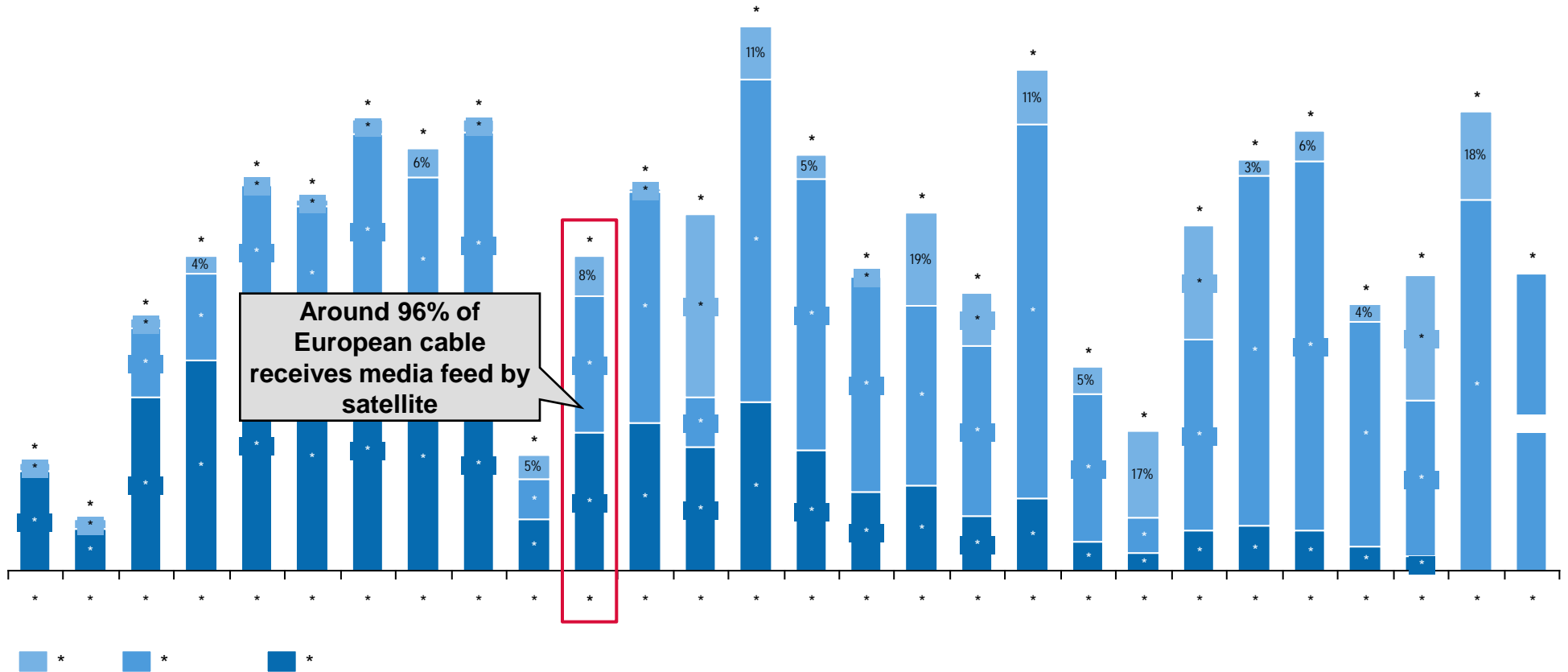


We see a number of use cases which rely on these unique and special capabilities of satellites



Media distribution: today, around a third of European households use DTH satellite services, another third cable which is sat-fed

Household Penetration of Different Broadcasting Services, EU July 2011



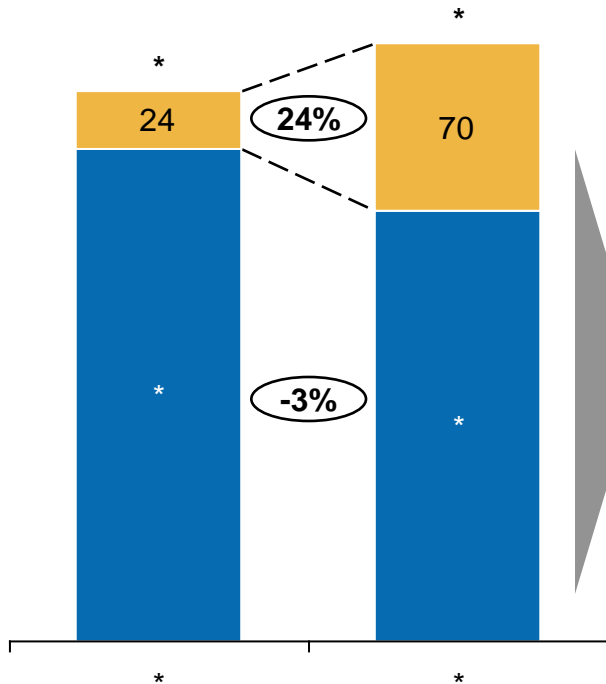
Source: EC: Indicators on the electronic communications market, SES, Booz & Company analysis

Given non-linear watching and UHD trends, the required capacity for media content distribution doubles in 5 years

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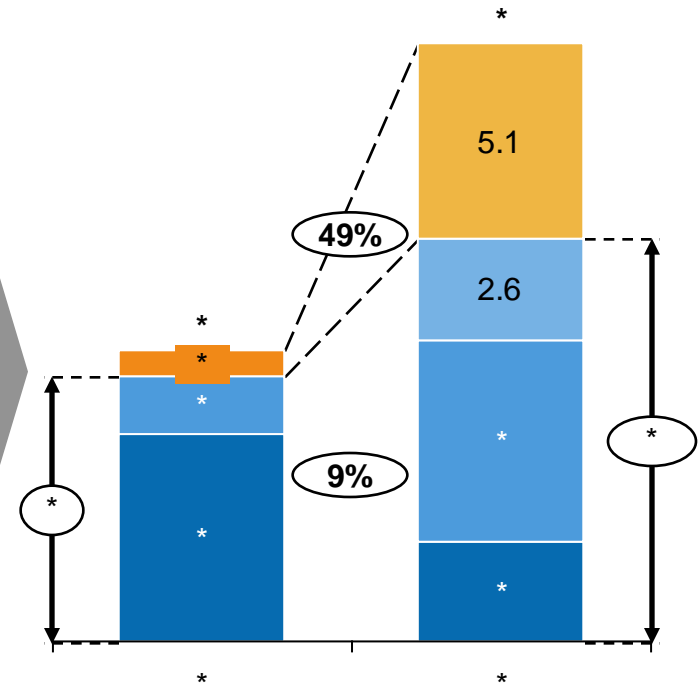
Capacity Requirement Development For TV Consumption

Consumption per Consumer per Day
(Minutes of Use)



| | Assumptions | |
|------------------------|-------------|------|
| | 2010 | 2015 |
| Other HD (10 Mbit/s) | 0% | 100% |
| Other SD (4 Mbit/s) | 100% | 0% |
| Linear UHD (20 Mbit/s) | 0% | 10% |
| Linear HD (10 Mbit/s) | 10% | 40% |
| Linear SD (4 Mbit/s) | 90% | 50% |

Capacity per Consumer per Day
(GBytes per day)



■ * (e.g. mobile, non-linear)
■ * on big screen

CAGR

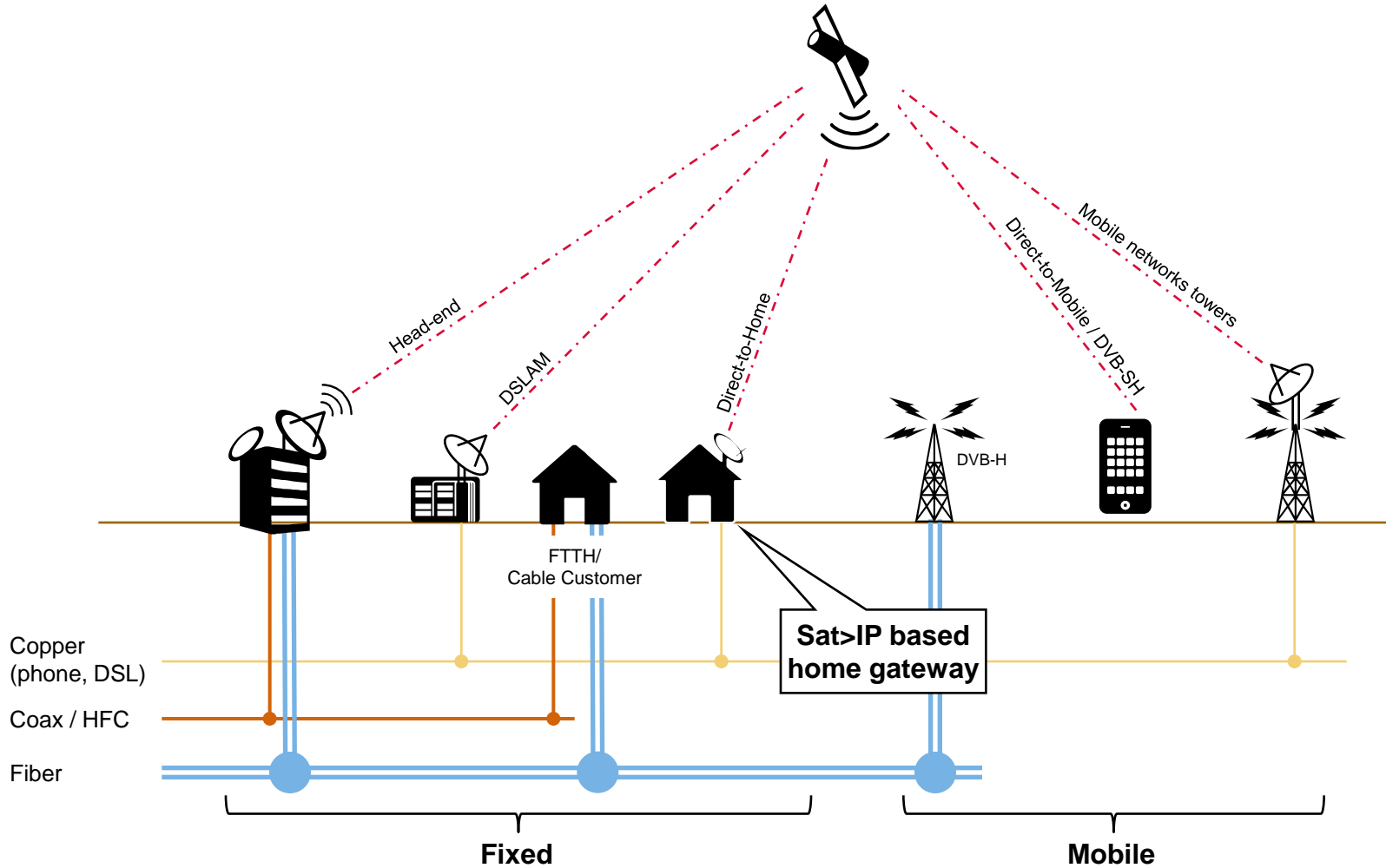
■ * ■ * ■ *
■ * ■ * ■ *
 CAGR

Source: Booz & Company analysis

With future hybrid setups, satellite will have a number of media broadcast injunction points to optimize overall network efficiency

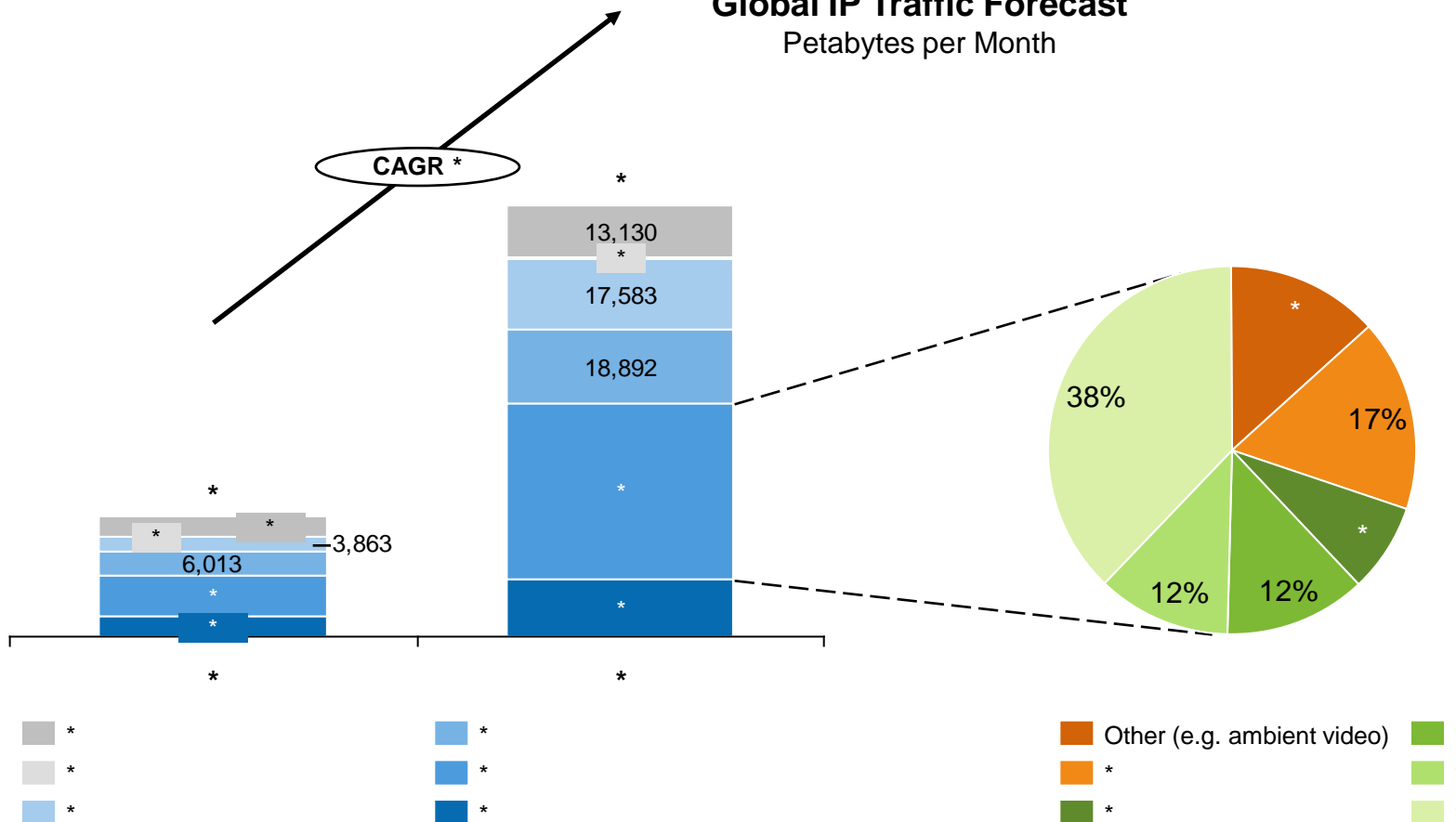
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Broadcast Injunction Points



But more importantly, satellite allows to offload media broad-/multicast content from fixed networks

Global IP Traffic Forecast
Petabytes per Month



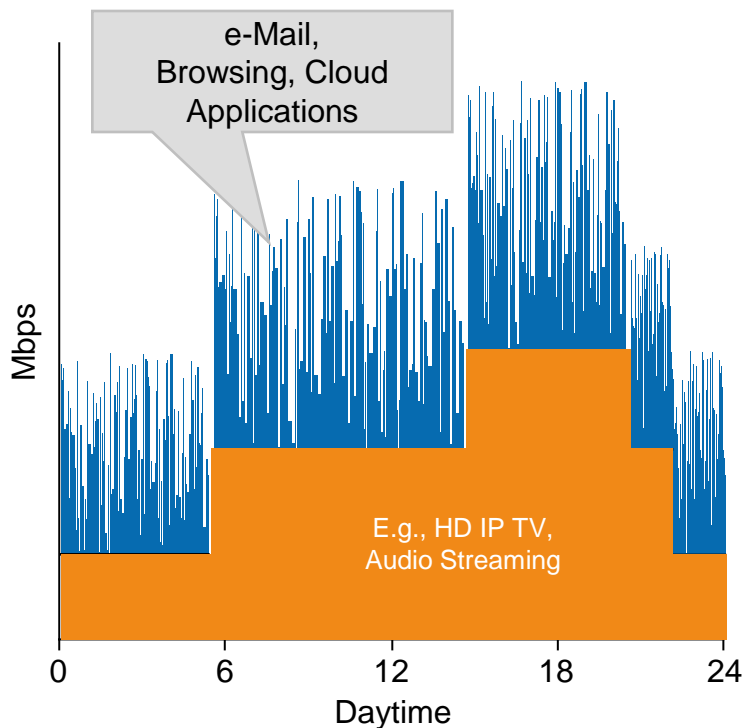
Source: Cisco

A true integration of fixed and mobile capabilities into a hybrid network proposition will be game changing

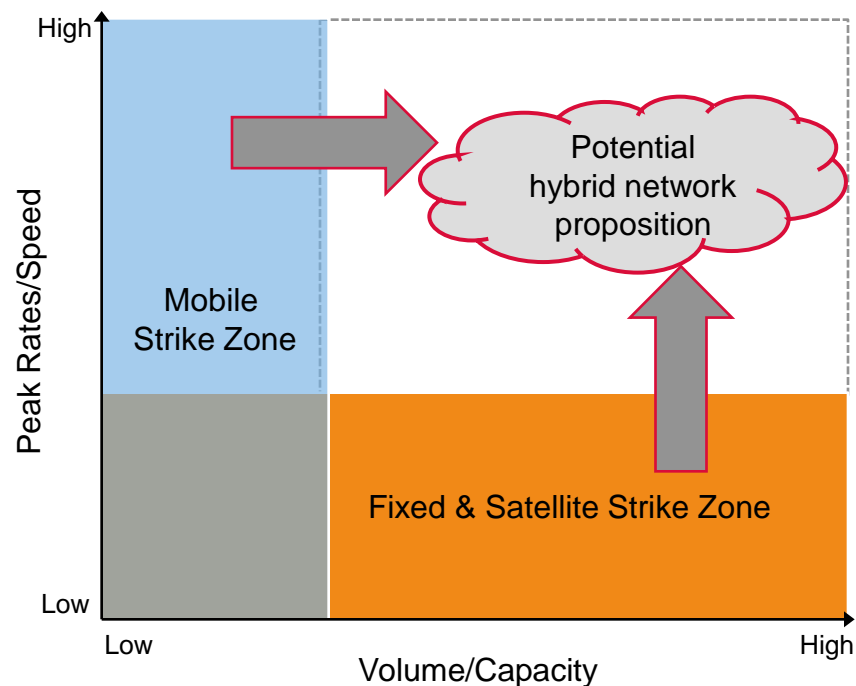
Optimization of Broadband Rollout by Combining Technologies

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Typical Daily Traffic Pattern
High End Residential



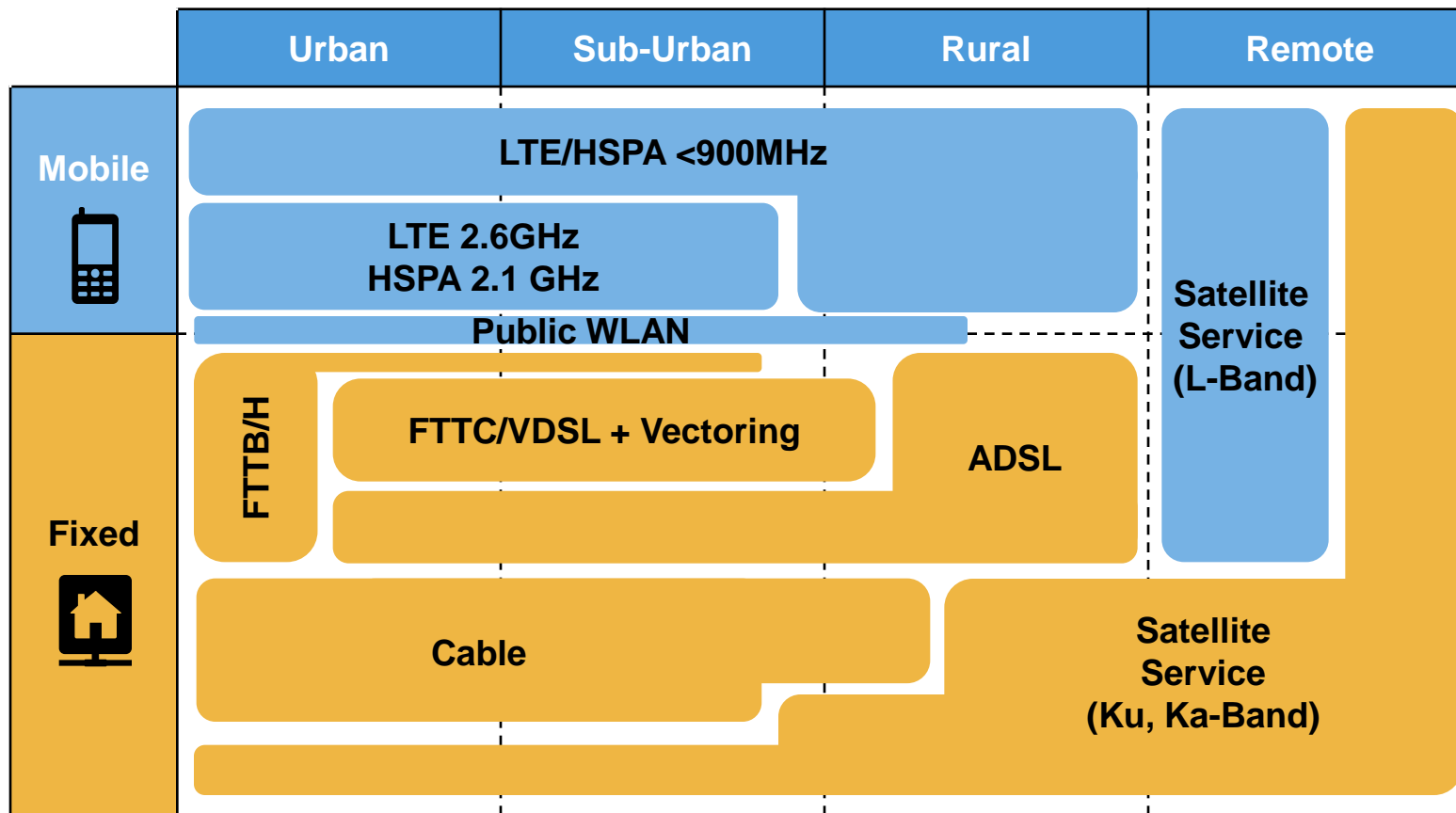
Comparison of Capabilities



Source: Booz & Company analysis

To limit required investments in infrastructure, an increasingly heterogeneous access portfolio will provide required bandwidths

Emerging Access Technology Portfolio



Source: Booz & Company analysis

Based on the summary of capabilities, several prerequisites were derived for European (and international) policy makers

Summary & Prerequisites

Summary of Report

- **Broadcast and multicast services are most efficient with satellites**
- **Satellite communications can speed up broadband roll-out in Europe and allow access for all already today**
- **Satellites offer irreplaceable capabilities e.g. for emergency communications, navigation and remote sensing**
- **Satellite industry contributes significantly to the European economy and is major exporter of services**

- **Secure orbital slots and spectrum for Europe**
- **Support hybrid solutions for next-gen networks via appropriate policies**
- **Consider supporting international market expansion for European companies**