

The image features a red square in the top left corner containing the CSG logo and tagline. The background is a black and white photograph of four people sitting at two round tables in an outdoor cafe setting, working on laptops and tablets. The ground is paved with bricks, and there are plants in the background.

CSG

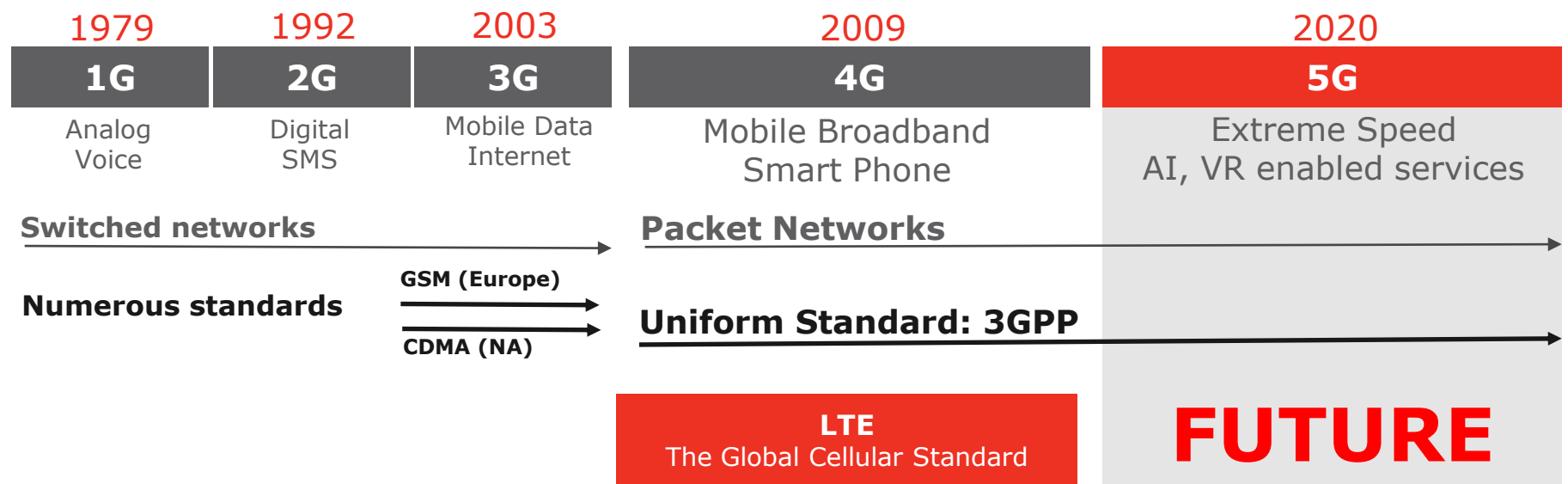
TOGETHER, YOU WIN.

Malcolm Crouch, Regional CTO

MONETISATION AND MOBILISATION FOR 5G AND IOT

MAY
2018

— THE WIRELESS EVOLUTION



WHAT COULD PROPEL 5G IN INDIA?

THREE AREAS OF USAGE AND APPLICATIONS DEFINED BY INTERNATIONAL TELECOMMUNICATION UNION'S RADIOCOMMUNICATION SECTOR (ITU-R):

ENHANCED MOBILE BROADBAND

Usage Scenarios:

- Widespread connectivity is needed as the demand for mobile broadband continues to grow
- Data rates, connection density, and mobility
- Human-centric use cases: access to multi-media content, such as 4k streaming on a mobile device or on-site live experiences

MASSIVE INTERNET OF THINGS (IOT)

Usage Scenarios:

- Connectivity is required for millions of devices
- Typically transmitting a low volume of non-delay-sensitive data (low bandwidth and not latency critical)
- Devices must be low cost with extremely long battery lives

CRITICAL IOT

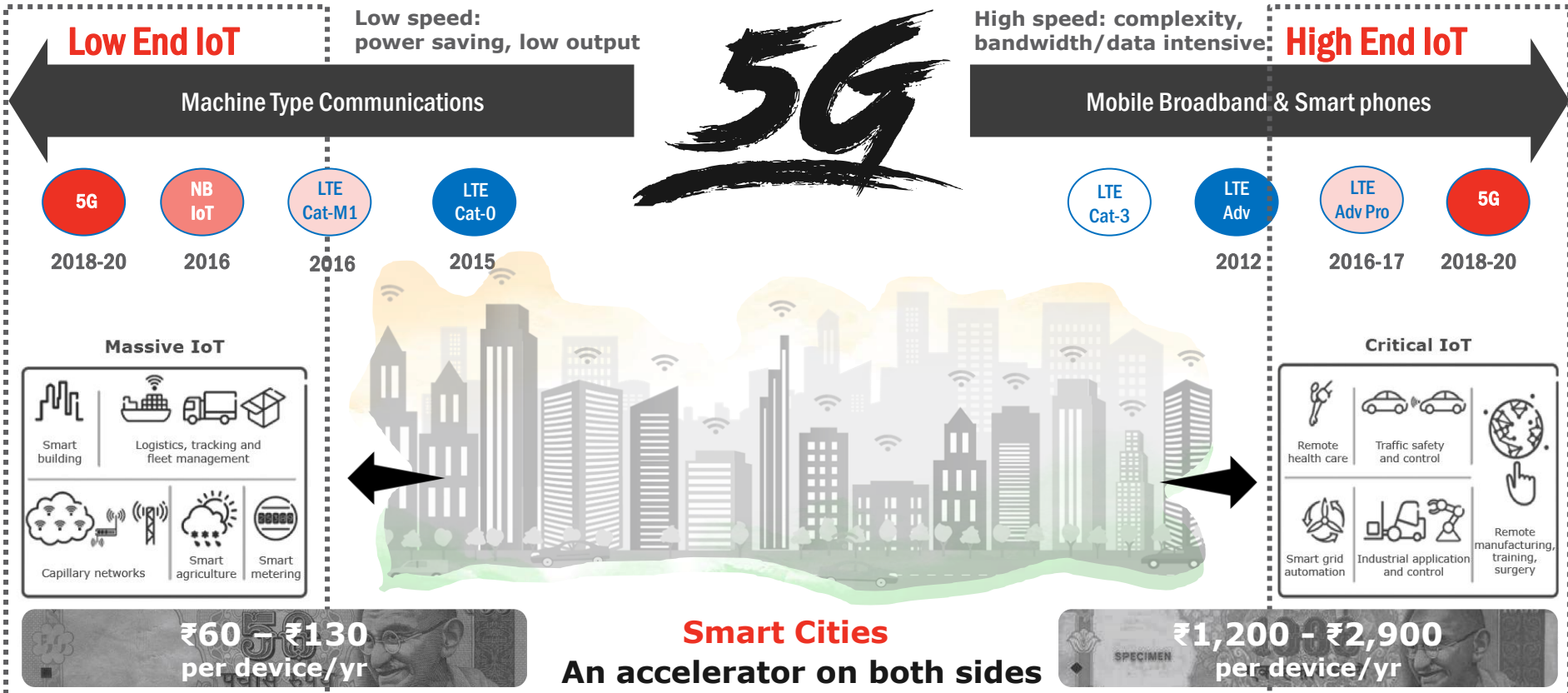
Usage Scenarios:

- Ultra-reliable, resilient and instantaneous connectivity
- Stringent requirements on availability, latency and throughput

Usage Cases:

Wireless control of industrial manufacturing and production processes, remote medical surgery, distribution and automation on a smart grid, and transportation safety.

— THE EVOLUTION FROM LTE TO IOT



— SMART CITIES DON'T BUILD AND RUN THEMSELVES

Logistics

- Service and solution roll-out

Delivery and Installation

- Enterprise solution delivery
- Residential install

Cost to Serve Optimization

- Service provider service maint.

Services Outcomes

- Empty full bins
- Pest controls



A New Breed of Workforce is Required!



“Field Techs” have re-invented themselves

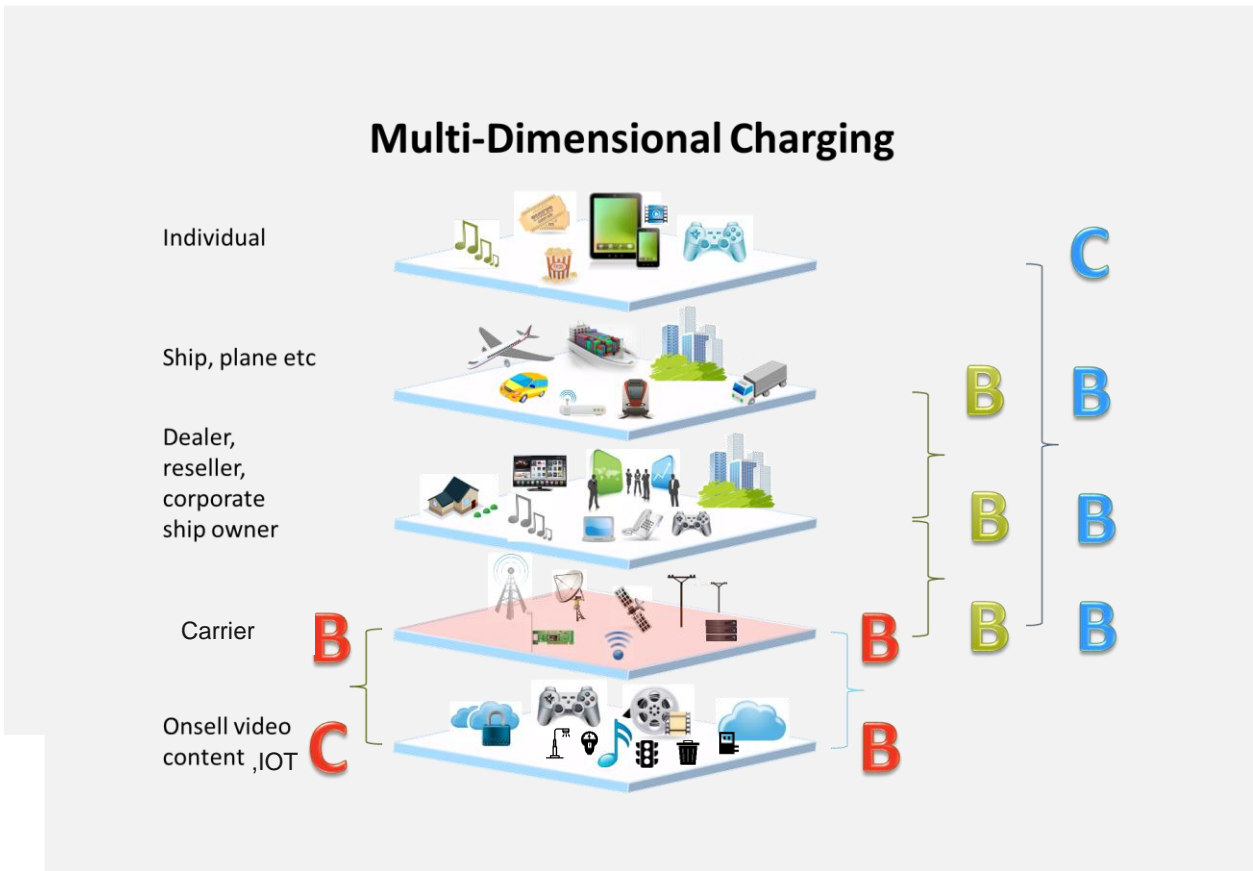
multi-skilled | agile | multi-location
multiple appointments | network of devices
customer focused | mobility matters
automated | serving the **NOW**

“A WELL-OILED FIELD SERVICE ORGANIZATION CAN POSITIVELY IMPACT THE BOTTOM LINE, FROM TWO DIRECTIONS: **DRAMATICALLY REDUCING OPERATIONAL EXPENSES; AND ACCESSING NEW REVENUE STREAMS FROM THE HYPER-CONNECTED WORLD OF THE INTERNET OF THINGS (IOT), SMART HOMES (BUILDINGS) AND GENERAL INTERCONNECTEDNESS”**

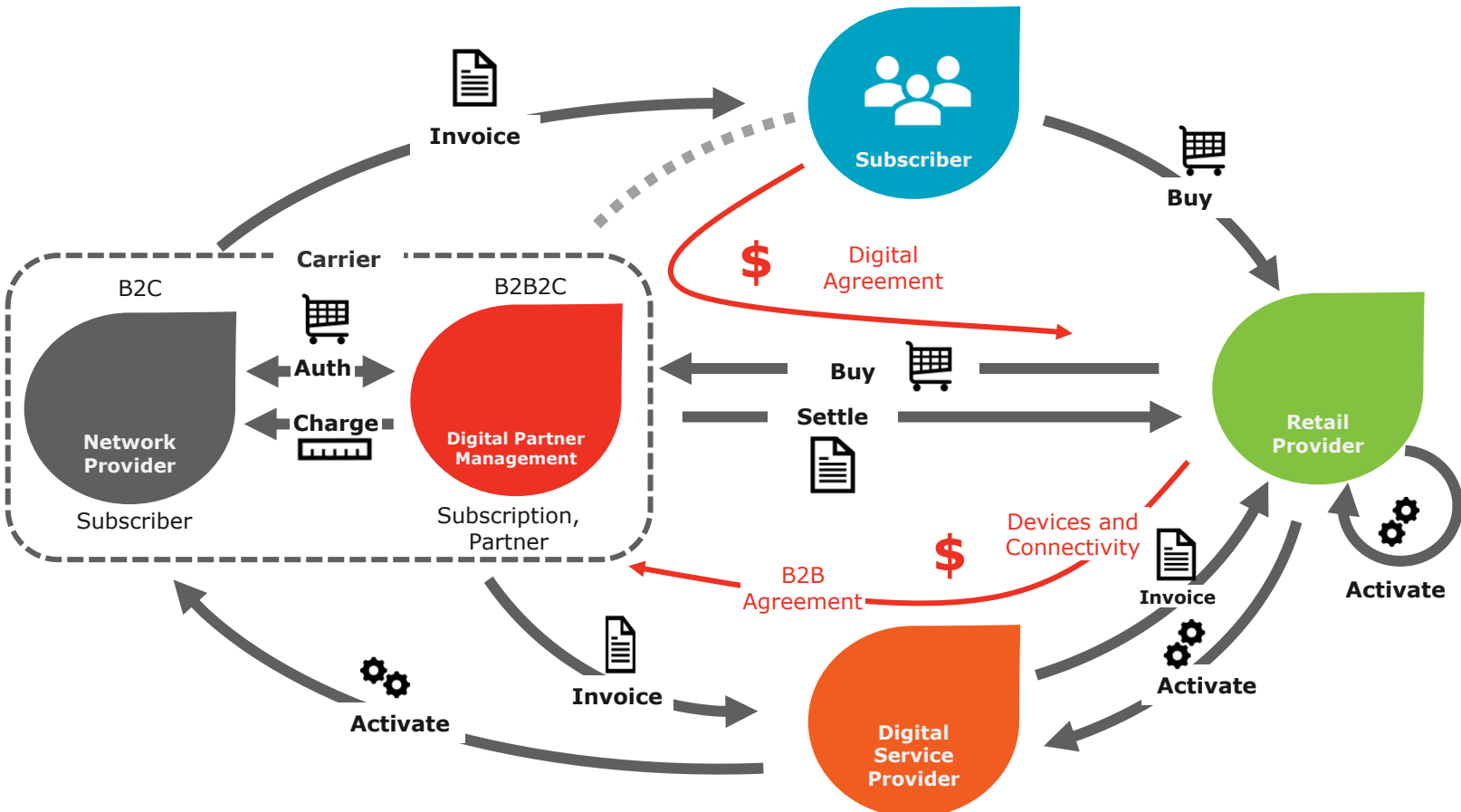
Stratecast 2017

DIGITAL PARTNER MANAGEMENT & MONETIZATION

Business and commercial models that revolve around an ecosystem will be key in the IoT market



DIGITAL PARTNER MANAGEMENT AND MONETIZATION



IOT Services

Digital Services

Enterprise Services

Smart City Services

THE ECONOMICS HAVE TO WORK

Successful operators will be those that make the economics work – by adopting 3 key revenue generating principles:

1

Move up the value chain beyond connectivity

2

Drive innovative, value-added services – companion services that drive lucrative, high margin, revenue streams

3

Experiment with multiple combinations of business and commercial models as IoT use cases continue to blur the boundaries between the retail and wholesale world; in many cases, a combination of B2B, B2C, and B2B2X business models in a single use case.



THANK YOU