csg

TOGETHER, YOU WIN.

TOP 5 CHALLENGES FOR MONETIZING THE INTERNET OF THINGS

A WHITE PAPER

THIS PAPER DISCUSSES THE MECHANICS OF BILLING FROM THE PERSPECTIVE OF A CSP AT THE CENTER OF THE INTERNET OF THINGS.

Communications Service Providers (CSPs) are racing to define their role in the Internet of Things (IoT): on one hand they are making significant investments in this new business area, and on the other are faced with the challenges of maximizing the returns on that investment. Consumers and enterprises alike already benefit from the connectivity of things. Now it's time for CSPs to choose how they will benefit from the IoT, especially as they've made handsome investments in the underlying networks.

The focus of IoT development to date—we'll call this phase one—has been on technology: proving connectivity, remote sensing, data gathering, status monitoring, and interactivity and control. We are in the midst of the second phase today, where developers, industries, and governments are proving the use cases and assessing the value they deliver.

The third phase will soon be upon us, when the IoT players determine how to monetize these use cases. From the CSP's perspective, monetization has two attributes:

- **THE ECONOMICS OF PRICING:** what is the price point a consumer or business will pay for the value they derive (and how does that price point change in a competitive marketplace)?
- **THE MECHANICS OF BILLING:** what systems and operations are required to manage IoT costs and process the revenue stream for end users and partners alike?

INTRODUCTION

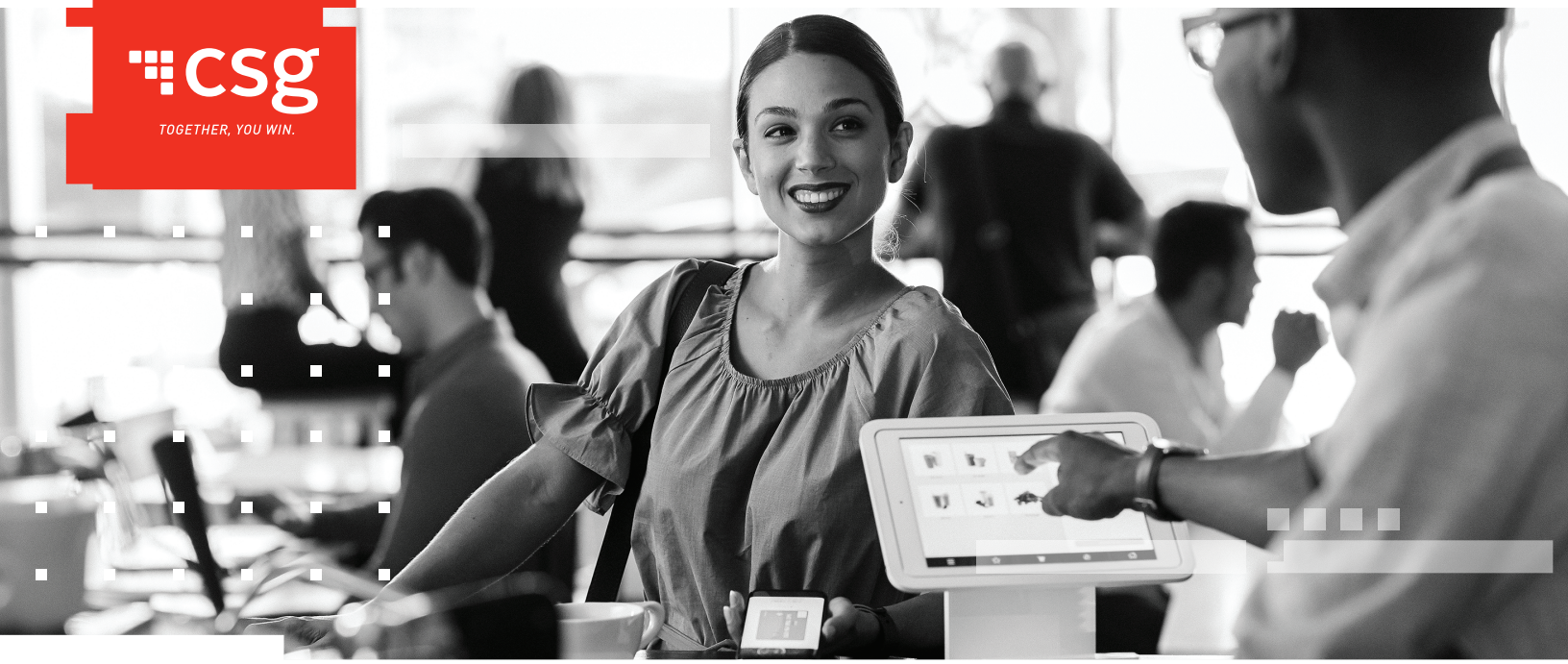
As the pace of service evolution has accelerated over the past 30 years or so, the typical CSP has invested significantly in billing capabilities. Billing systems have evolved from service-address centric to service-centric to customer-centric. The IoT will drive billing models into the next evolution to ecosystem-centricity. To manage the diversity of connected things and the volume and complexity of third party relationships supporting them, a billing platform must operate across networks, services, devices, data and partnerships in a unifed way. The IoT generates new dynamics in charging operations, billing process automation, customer management, provisioning and network management, and product lifecycle management.

IOT: NEW DYNAMICS IN BILLING

- **IoT Product Management:** Rapidly defining new offers is essential to make IoT profitable, incorporating aspects of connectivity, device management and provisioning, data processing, monitoring and intelligence
- **Charging More:** The number and complexity of partnerships requires the simultaneous application of multiple charging and billing models across several parties
- **Managing All Parties in the IoT Ecosystem:** Traditional definitions of "customer" evolve in the IoT realm into multi-persona businesses, partners, customers and devices
- **IoT Process Implications:** The number of devices and the volume of transactions demand automation and seamless integration
- **Many Things, Many Networks:** Numerous network technologies and touch-points will require OSS and BSS to concurrently integrate and orchestrate across them all

FOR 57% OF CSPS, FACILITATING IOT TRANSACTIONS WILL OFFER THE MOST SIGNIFICANT OPPORTUNITY FOR REVENUE GROWTH OVER THE NEXT 3 YEARS[0].

[0]CSG Internatonal 2015 survey of global CSPs on business transformation priorites



1. CHARGING MORE

To monetize IoT, CSPs will have to charge more – more transactions, more parties, more complexity. While monetization has been a low priority in the first phase, it will be critical to assess and manage the value between parties in the IoT. The previously dominant billing methods of usage-based charging and subscription-based charging alone will be insufficient. The value of each individual network transaction will be nominal if not zero. And subscription billing on a recurring basis lacks the flexibility and complexity needed to calculate and share value among many parties in the IoT.

FOR THE CSP'S IOT CHARGING OPERATIONS, YOU WILL NEED:

- Real-time charging for every billing entity, be it a device, a user, a business or a partner/contributor to the IoT service
- Ability to assess billing and revenue share impacts to every network transaction in an efficient, scalable manner to manage the volume of IoT transactions being collected and processed for the "bill pool"
- Be service, network and device agnostic
- Support partner settlements between carriers, enterprises and content partners

70% OF THE VALUE CAPTURED FROM THE IOT WILL COME FROM BUSINESS-TO-BUSINESS APPLICATIONS RATHER THAN FROM CONSUMER USES — MCKINSEY[1]

[1]http://www.mckinsey.com/insights/business_technology/the_internet_of_things_the_value_of_digitizing_the_physical_world June 2015

2. MANAGING ALL PARTIES IN THE IOT ECOSYSTEM

An often-repeated piece of industry advice to CSPs has been "Your business model must change." This advice may prove sound as the IoT brings a growing number of third parties into the CSP's ecosystem, and the nature of those B2B2X relationships spans resellers, distributors, enablers, and service providers in other geographies or with different network technologies. At the same time, the definition of "customer" is changing, and in extreme cases an entity can be both a partner and customer at the same time.

TO OPTIMIZE THESE CUSTOMER AND PARTNER EXPERIENCES, IOT CUSTOMER MANAGEMENT REQUIRES:

- Customer/partner self-care including real-time status and updates of their accounts
- Multi-tenant environment supporting many definitions of customer and partner with segregated and secure access to data for self-management
- Large and diverse "account" hierarchies
- Flexibility to control service consumption based upon throughput or costs
- Real-time accounting and display of account / service / device utilization and cost
- Real-time modifications to services and products

THE IOT WILL HAVE A MASSIVE INFLUENCE ON CONSUMER AND ENTERPRISE BUSINESS MODELS AND ON HUMAN BEHAVIOR PATTERNS, SUPPORTING A MOVE AWAY FROM OWNING TO RENTING ASSETS ON THE CONSUMER SIDE, AND FOR BUSINESS TO MOVE FROM SELLING PRODUCTS TO OFFERING SERVICES[2].

[2]VanillaPlus Dec'15/Jan'16 issue, CSG article. http://issuu.com/vanillaplus/docs/vanillaplus-magazine-dec_15-jan_16/51?e=2076085/32037402

3. IOT PROCESS IMPLICATIONS

While the IoT is expected to deliver significant value in business-to-business scenarios through, among other things, automating manual processes across industries, that same degree of automation will deliver benefits to the billing operations of CSPs at the center of the IoT.

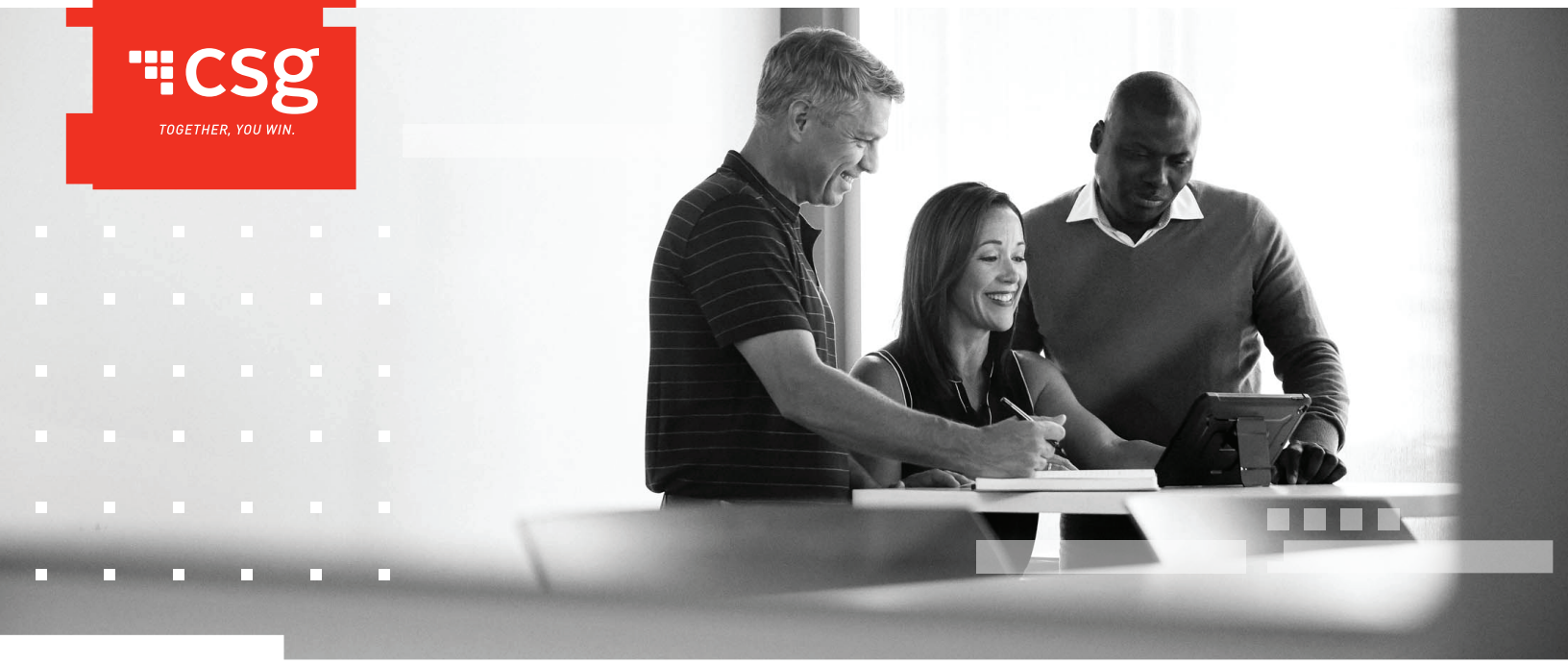
Because there is such a large volume of events and devices, each of which have a relatively low value, and because the number of devices, accounts and partners will increase and their inter-relationships become more complex, CSPs need coordinated workflow and automation, and seamless service provisioning.

IOT PROCESS OPERATIONS WILL REQUIRE:

- Industry standard workflow that is interoperable across diverse systems and processes
- Significant automation to reduce human task/manual handoffs to maximize efficiency and accuracy
- Massive scalability to manage the volume of IoT transactions and associated operations and tasks

INTEROPERABILITY BETWEEN IOT SYSTEMS IS REQUIRED FOR NEARLY 60% OF THE TOTAL POTENTIAL VALUE OF THE IOT[3]

[3]http://www.mckinsey.com/insights/business_technology/the_internet_of_things_the_value_of_digitizing_the_physical_world



4. MANY THINGS, MANY NETWORKS

With myriad network technologies coexisting, the IoT network ecosystem is likely to become more complicated rather than more straightforward for the CSP. In this diverse environment, the challenge of managing services, accounts and billing "convergence" across network types persists. Some IoT services will be specific to one network technology while others may span network types and geographies, and all of this will be seamless to the consumer or business customer.

NETWORK AND PROVISIONING OPERATIONS IN THIS MULTI-NETWORK WORLD REQUIRE:

- Support for multiple network provisioning touchpoints with automated and manual input for the growing number of devices, networks, and "things"
- Orchestration of complex, inter-dependent provisioning activity across delivery channels
- Management and reporting of activity progress and status
- Enabling remote service activation and de-activation at large scale

AS ANALYSYS MASON PREDICTS, IOT CUSTOMERS MAY NO LONGER NEED A "ONE SIZE FITS ALL" NETWORK BUT WILL RELY UPON MULTIPLE NETWORKS, EACH OPTIMIZED FOR A DIFFERENT USE CASE (DATA THROUGHPUT, LATENCY, REACH)[4].

[4]Analysys Mason "For IoT, CSPs May Need Multiple Networks, Each Optimised for a Different Use Case." April 2015

5. IOT PRODUCT MANAGEMENT

In the pursuit of IoT services that deliver demonstrable value to consumers and businesses alike, IoT providers must rapidly evolve their offers as the supporting technology and use cases advance. And these offers will increasingly encompass more than a device and connectivity, but also the impact and presence of third parties who either contribute a service or harvest the information from that service. From a billing perspective, this isn't your grandfather's "bundle" – the bundle isn't defined solely from the end user's perspective (home security monitoring packaged with broadband connectivity, for example). Instead, the bundle is turned inside out: it is a bundle from the CSP's perspective and must be managed accordingly.

FOR BUNDLED OFFERS, THE CSP'S IOT PRODUCT LIFECYCLE OPERATIONS ARE FACILITATED BY:

- A single, comprehensive product and service catalogue
- Supporting the creation of internal, partner and third party services individually or in bundles
- Associating and automatically applying the CSP's rules for revenue sharing and revenue recognition
- Being under-pinned by a multi-tenancy environment that allows partners to view and manage their specific offers and customer data securely

THE GREATEST ISSUE IS THAT PRODUCTS WITHIN THE INTERNET OF THINGS TEND TO APPEAL TO A NICHE MARKET AND GENERATE RELATIVELY LOW SALES VOLUMES. WITH INDIVIDUAL PRODUCTS DELIVERING A RELATIVELY LOW RETURN ON INVESTMENT[5].

[5]http://www.mckinsey.com/insights/innovation/internet_of_things_opportunities_and_challenges_for semiconductor_companies (Oct 2015)

CONCLUSION

The IoT is rapidly reaching the stage where monetization of use cases will become a top priority, if for nothing else to demonstrate a return on the massive development investment that has been made. And perhaps more importantly, to enable the CSP at the center of the IoT to associate the correct value to the customer's service and to share that return among all of the players in the ecosystem.

The value and the long-term sustainability of IoT services will vary dramatically. Do we need a connected fork that monitors the mechanics of our eating habits? Hard to say. But there is immense value in hospital bed monitors that create an alert when a patient attempts to rise or needs to be moved, reducing the incidence of falls and bed sores which will shorten hospital stays. IoT services will deliver significant effciency improvements to the health care industry, not to mention improve the quality of life for the patient.[6] The CSP who leads the IoT industry will have solutions that manage the charging, the processes, the customers, the networks and the product lifecycles in an end-to-end fashion.

ABOUT CSG

For more than 35 years, CSG has simplified the complexity of business, delivering innovative customer engagement solutions that help companies acquire, monetize, engage and retain customers. Operating across more than 120 countries worldwide, CSG manages billions of critical customer interactions annually, and its award-winning suite of software and services allow companies across dozens of industries to tackle their biggest business challenges and thrive in an ever-changing marketplace. CSG is the trusted partner for driving digital innovation for hundreds of leading global brands, including AT&T, Charter Communications, Comcast, DISH, Eastlink, Formula One, Maximus, MTN and Telstra.

To learn more, visit our website at csgi.com and connect with us on LinkedIn and Twitter.

[6]http://bamlabs.com/wp-content/uploads/BAMLABS-m-Infographics1.pdf