CYIENT

ENABLING A CONNECTED INVENTORY SYSTEM FOR COMMUNICATION SERVICE PROVIDERS

An integrated model for effective and efficient inventory management and service fulfillment

CELEBRATING 25 YEARS

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Optimized service provisioning is an imperative for CSPs to manage the complexity of service fulfillment in today's rapidly changing ecosystem.

Executive Summary

In 2014, the number of global smartphone users stood at 1.75 billion, according to an estimate by eMarketer[1]. The use of smart devices is likely to continue to grow at a rapid pace surpassing 2.9 billion units in 2017, according to a report by Gartner, Inc.[2] This proliferation of smart phones and devices has changed the way customers consume telecommunication services today, resulting in a sharp decline in traditional voice revenues. Given the significant growth in mobile data usage and phone internet access, communication service providers (CSPs) are diversifying product offerings to monetize their network and drive growth.

While CSPs are trying to offer new services to gain market share, effective network monetization almost entirely depends on successful provisioning and activation of these services. 'First time right' provisioning of services requires an up to date and synchronized network inventory systems. However, the biggest hurdle that CSPs face today in offering next generation services is the lack of holistic visibility into end-to-end business processes due to distributed inventory systems, which in turn affects time-to-market and service fulfillment.

This white paper discusses the shortcomings of maintaining different inventory repositories for physical and the logical network resources. It highlights how integration of the physical inventory with the logical network inventory can help overcome the challenges, and deliver next generation communication services seamlessly.

Ensuring Effective Service Provisioning: The Challenge

With the increasing usage of mobile devices, CSPs are focusing on enhancing their networks and capacity to offer high-bandwidth services. Optimized service provisioning is an imperative for CSPs to manage the complexity of service fulfillment in today's rapidly changing ecosystem. However, CSPs are faced with several challenges in ensuring efficient service provisioning.

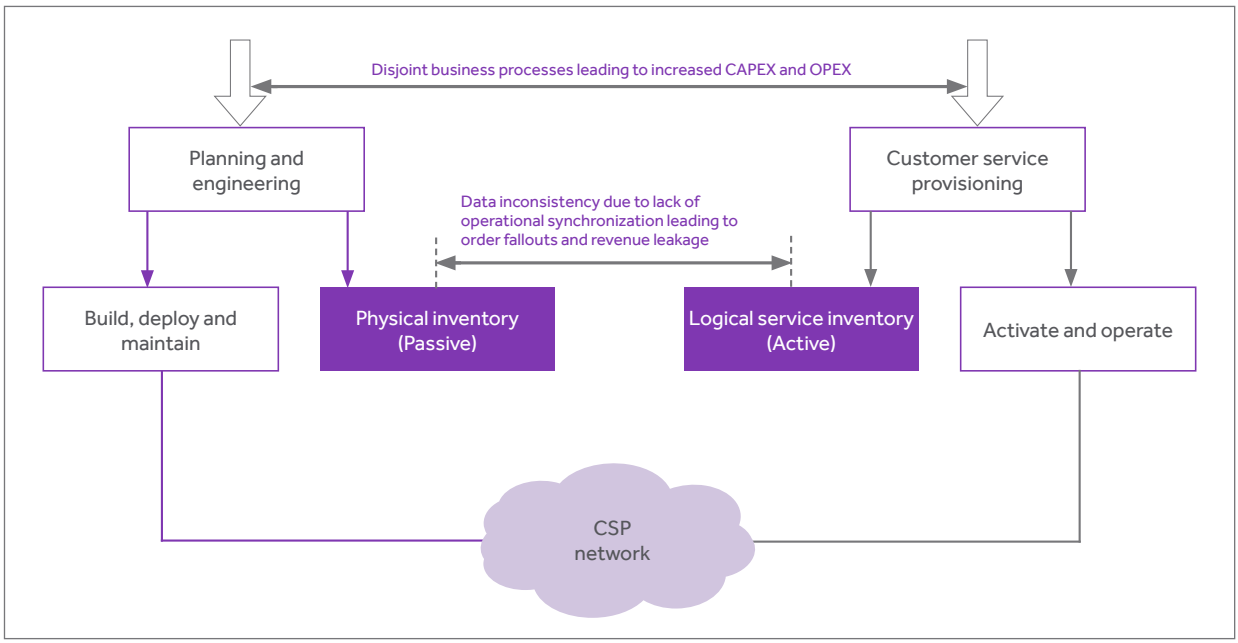


Fig. 1 | Unconnected inventory – business challenges

Connected Inventory is an integrated solution ecosystem that synchronizes the operational aspects of physical and logical inventory.

This is mainly due to the limitations of provisioning converged services on old technology stacks, which are either incompatible with or have limited capability to support next generation services. Lack of defined ownership and inventory dispersed over several systems result in poor data integrity. In addition, the lack of synchronization between physical and logical inventory systems leads to inconsistent and inaccurate data, as well as processes across these systems. This in turn results in delays in service provisioning, order fallouts, and revenue loss. A stovepipe approach to managing business processes combined with manual processes often leads to operational silos, and an inefficient plan, build and operate lifecycle.

Figure 1 illustrates how lack of synchronization across physical and logical inventories lead to inconsistent processes and data, resulting in long service provisioning lifecycle, or service provisioning failures.

Network inventory systems are at the heart of CSPs' operations. Efficient inventory management is therefore critical for service providers. Closer and more flexible linkages between inventories helps them better plan, deliver, and resolve network issues. It is therefore essential that the physical inventory that provides ready for service (RFS) state of the network, and the logical inventory that fulfills customer services are synchronized across data and business processes. This integration ensures effective and efficient service provisioning, maximizes operational support, and ensures cost-effective network management.

Synchronizing Inventories: The Cyient Solution

Connected Inventory is an integrated solution ecosystem that synchronizes the operational aspects of physical and logical inventory. At Cyient, we have developed fit-for-purpose inventory management data to facilitate critical business decision-making. The integrated solution helps streamline business processes and provide a seamless workflow of the service provisioning lifecycle across physical and logical inventories. Figure 2 illustrates our connected inventory approach.

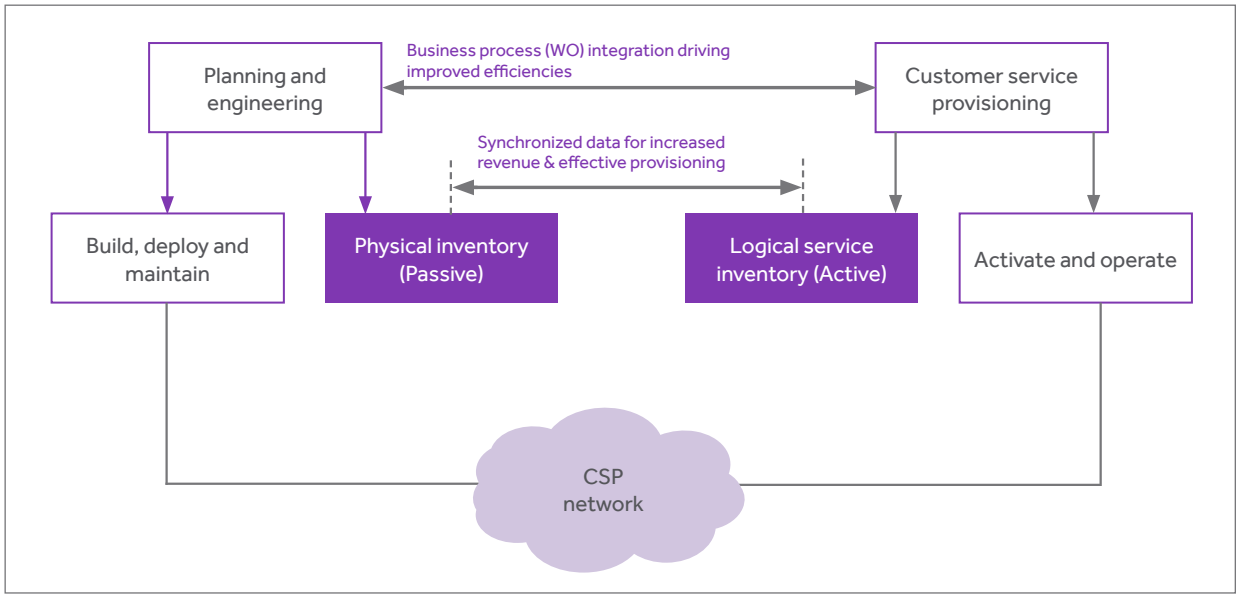
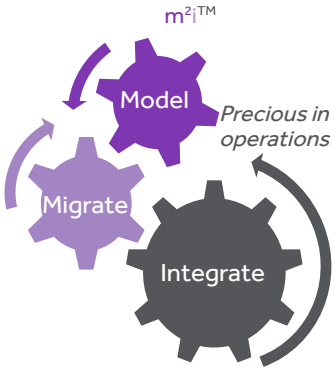


Fig. 2 | Connected inventory model

Our connected inventory solution is based on our trademarked framework m2i™ that addresses three critical areas for operationalizing a connected inventory solution—model, migrate, and integrate.



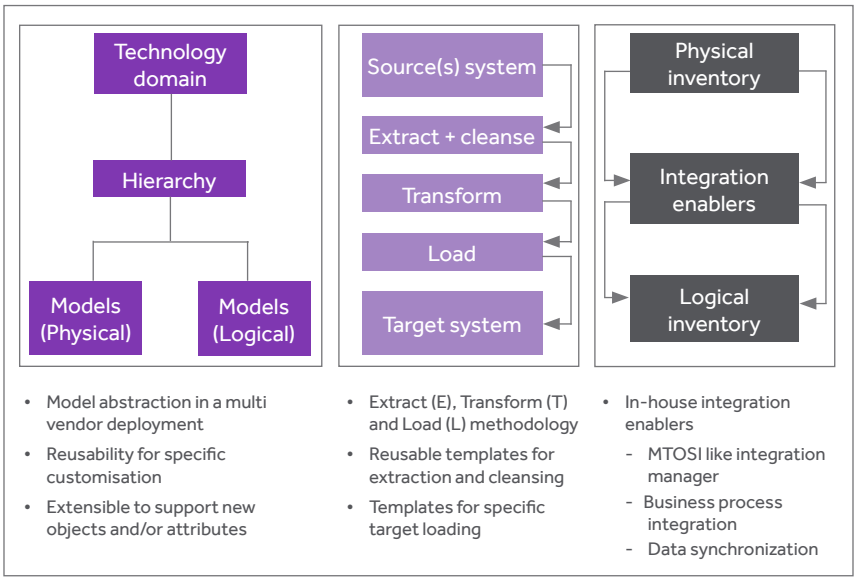


Fig. 3 | Cyient connected inventory solution

Using industry's best practices and latest methodologies we build and operate a connected inventory solution that includes:

- Modeling of the physical and logical resources
- A well-defined and comprehensive information model driven by underlying modeling best practices and templates
- Streamlining of business functions to facilitate network relationship, and develop and offer new services

Our connected inventory solution is based on our trademarked framework m2i™. This framework addresses three critical areas for operationalizing a connected inventory solution—model, migrate, and integrate.

Once the modeling is completed, our team performs migration activities to transform legacy data. Most of the data is migrated (excluding some data that might continue to reside in the legacy systems) into centralized connected inventory information model, without any loss of service provisioning data.

Finally, we integrate the physical and logical inventory systems with the help of up-to-date and reconciled network information. This integration helps orchestrate and synchronize data and business processes. Figure 3 illustrates our connected inventory solutions.

The salient features of our solution are:

- A framework that provides abstraction, reusability, and extensibility
- Well-defined templates across modeling , migration, and business process integration
- The data synchronization process and other framework components can be customized to suit deployment requirements
- Well-defined data quality checks and validation to achieve 98-100% data accuracy

Our trademarked framework has been developed leveraging our engagements with multiple CSPs across the globe. It provides an integrated solution ecosystem that synchronizes the operational aspects of physical and logical inventory, and provides the agility and flexibility to roll out customized solutions quickly and efficiently.

Our solution enables CSPs to drive the following business benefits:
- Accelerated time-to-market
- Improved service efficiency
- Optimized operational and total cost
- Increased revenues

Enabling Network Monetization: The Solution Benefits

Our connected inventory solution helps streamline the entire service fulfillment lifecycle—from plan to provision through order to activate business processes. Deploying our solution enables CSPs to drive following business benefits:

Accelerated time-to-market: 'First time right' service provisioning helps reduce provisioning cycle times and introduce new services to the market faster.

Improved service efficiency: Synchronized data sharing enables efficient design and work order flows, leading to better handling and orchestrations of orders.

Optimized operational and total cost: Optimization at every stage of the plan, build, and operate lifecycle of physical and logical resources helps enhance cost-effectiveness, increase returns, and improve service efficiency. The solution further lowers total cost by leveraging in-house enablers such as pre-built modeling and migration templates, as well as integration and data synchronization tools.

Increased revenues: The solution minimizes revenue leakage and enhances revenue assurance through inventory consolidation, data consistency, and integrated work flows.

Building Future-ready Fulfillment Capabilities: The Way Forward

Rapid commoditization of conventional services and unprecedented demand for mobile data services are compelling CSPs to look for innovative ways to increase revenues and reduce operational expenditure (OPEX), while attracting and retaining subscribers. The service provider market is characterized by evolving customer as well as market expectations, and CSPs who fail to keep pace with these changes will struggle to stay relevant. Therefore, it is imperative that service providers offer differentiated services, improve operational efficiency, and facilitate efficient end user self-provisioning. Our connected inventory solution helps build efficient, flexible, customizable, and scalable service fulfillment systems to successfully meet present and future market demands and maintain a competitive edge.

Author

Harish Lalapeth has over 23 years of experience in IT and telecom. He is currently working as a Senior Principal Consultant with Cyient and heads the solutions group for communication technologies and operations. As a thought leader, he is actively involved in proposing operational best practices to CSPs globally to improve their operational efficiency through in-house developed solution frameworks. Harish Lalapeth has spoken at multiple forums such as CommunicAsia 2008, ET-ICT Vision, 2009 and Communications 2009. Harish Lalapeth holds a masters degree in Electrical Engineering.

References

[1] http://www.emarketer.com/Article/Smartphone-Users-Worldwide-Will-Total-175-Billion-2014/1010536

[2] http://www.gartner.com/newsroom/id/2408515

About Cyient

Cyient is a global provider of engineering, manufacturing, data analytics, networks and operations solutions. We collaborate with our clients to achieve more and shape a better tomorrow.

With decades of experience, Cyient is well positioned to solve problems. Our solutions include product development and life cycle support, process and network engineering, and data transformation and analytics. We provide expertise in the aerospace, consumer, energy, medical, oil and gas, mining, heavy equipment, semiconductor, rail transportation, telecom and utilities industries.

Strong capabilities combined with a network of more than 13,100 associates across 38 global locations enable us to deliver measurable and substantial benefits to major organizations worldwide.

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