

Eliminate the swivel chair with universal service activation

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Incognito Software Systems Inc.

Phone: +1 604.688.4332

Fax: +1 604.688.4339

Toll free (US/Canada): 1.800.877.1856

Email: info@incognito.com

Web: www.incognito.com



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Introduction

Among all of the strategic challenges competing for communication service providers' (CSPs) attention, nothing is more crucial to success in the day-to-day battle for market supremacy than finding a way to accelerate activation of new services and promotions.



Big, resource-consuming initiatives such as OSS consolidation, network migration, fixed/mobile convergence, and advanced advertising are often necessary. But, what operations, marketing, customer service and management personnel responsible for sustaining growth need most is a service activation solution that eliminates the speed bumps impeding vital money-making strategies. Without a better mode of service activation, operators risk leaving the dollars on the table that are essential to underwriting big-ticket growth initiatives.

Incognito Service Activation Center provides CSPs with a solution that allows them to centrally manage the activation of all services and service offers from a single interface. This applies to:

- Provisioning of high-speed data, digital voice, digital TV, video on demand, WiFi, and any other conceivable service
- Implementation of new services and variations on existing services
- Activation over new types of networks, such as FTTx and mobile
- Setting up multiple post- and pre-paid billing models suited to each type of service
- Customer service representative (CSR) access to information confirming that services are activated as ordered
- Marketing department flexibility to quickly implement and terminate special trial offers, usage incentives for one service tied to free sampling of another service, and any other promotions
- Accommodating new business models tied to consumer purchases of preprovisioned devices
- Support for service activation, content management, and troubleshooting through end user self-service modules

The urgent need for a universal service activation platform

Network operators, including fiber, cable, direct broadcast satellite and telecom providers, face unprecedented competition from new entrants in the market as well as an increasing number of over-the-top (OTT) content providers who use existing broadband connections to deliver bundled and à la carte web-based content to the home.

Compounding this challenge is the fact that a growing number of users are choosing to access entertainment directly from the Internet. The Cisco Visual Networking Index Services Adoption Forecast 2016 states that global IP traffic will increase threefold from 2016 to 2021, with video traffic representing 81% of that traffic. Worldwide, over-the-top (OTT) video revenue is also steadily increasing, with Research and Markets forecasting global market revenue to reach \$64.78 billion by 2021.

CSPs are taking action to address these challenges, but invariably, big technology-based initiatives can take years to complete. Meanwhile, every provider has a set of immediate challenges that can be met aggressively by imaginative use of the resources at hand.



Activation of new services

First and foremost, CSPs need to be able to launch new services quickly, without adding layers of operational complexity to the workloads of back office system managers, customer service representatives, network operations managers, and marketing personnel.

Operators are responding to competitive challenges with major service innovations that promise to differentiate their offerings and increase their appeal to subscribers. Most prominently, these initiatives include the rollout of high-speed broadband, data storage, IPTV, VoIP services, and a wide range of time-shifted programming options to complement an expanding portfolio of video on demand (VOD) movies and programs.

Operators must be able to launch and promote these services quickly and smoothly with a level of automation that prevents manual labor costs from undermining the bottom-line potential. They must be able to define services without worrying about all the different details of implementation at every level of network and back-office component integration. And they must be able to bundle services together and define what actions need to be taken as subscribers react to new offers.

Moreover, operators should be able to adjust to changing market conditions by allowing consumers who purchase operator-compliant set tops, modems, and other devices from retail outlets to sign up for services automatically through network recognition of those pre-provisioned devices. This means the service activation platform will have to recognize that device connectivity has been established and ensure that all the back-office and network components react not only to the service choices consumers make, but also to other choices, such as bandwidth desired, post- or pre-payment, duration of usage, etc.

And, of course, as retail purchases become the dominant mode of equipping subscribers with service access devices, the ability to activate services on pre-provisioned devices will produce substantial savings in device storage and inventory management costs.

Today, most operators are ill-equipped to meet all these requirements. Even after a service is set up, typically the activation system built around that service is largely dependent on pre-existing activation systems. These systems operate independently of each other, resulting in yet another interface and set of procedures that a customer service representative (CSR) must go through to activate a service for a customer.

The CSR may have no way of verifying whether a customer actually receives the service at the intended performance levels. It's possible that more costs will be incurred if the service is not properly provisioned, with follow-up calls from the complaining customer and truck rolls required to track down the problem.

Clearly, service activation processes where operators have to manually touch four or five operations and back-office systems must give way to the ability to put all of the processes essential for service activation in play through one point of contact. There may not be enough time or resources to replace all the silos with the consolidated operations support systems (OSS) that CSPs have long dreamt of, but operators can take immediate steps to put in place an order-to-payment service mediation layer that comprehensively addresses all the service activation points for all services through one interface.

Facilitating marketing initiatives



Beyond the need to streamline the activation of new services, providers also need to free their marketing departments to take full advantage of the functionalities built into existing network and back-office components and to tap into data resources that are available to track the performance of new pricing models and incentive offers. Marketing departments must be able to activate new tiers, usage-based pricing and packaging models, free trial and reduced-price incentives, and value-add applications that are essential for building average revenue per user (ARPU) and retaining and adding subscribers.

If, for example, a marketing department wants to offer a free week of 50 megabit-per-second high-speed data service to anyone who buys three VOD movies in one week, the complexities tied to coordinating all the moving parts on such an offer should not get in the way. And if that offer turns out not to produce the results the department is looking for, there needs to be a way to see those results and take immediate steps to adjust or take down the offer.

Or, to take another example, operators may want to set up pre-paid options which, for subscribers, include the added usage on the next bill and, for non-subscribers, bill directly through credit card or smart card payment gateways. Regardless of what examples one might choose, the bottom line is there should be no limit on marketers' flexibility to create incentive offers and set payment options.

Today, marketing departments are highly restricted in their ability to act aggressively to keep competitors off balance and users focused on service options with a steady flow of new promotions due to the multitude of touch points that must be manually configured to support any new services. If they could implement such offers through their own interface without having to engage and coordinate labor-intensive actions across other departments, marketing personnel would be able to put the full power of their knowhow behind their company's growth objectives.

Streamlining customer service

Another major impediment to maximizing revenues, cutting costs, and improving customer experience is the manually intensive customer service workload that grows with every new service, pricing, or special offer initiative. When it comes to taking new service orders, CSRs must have a single interface to access all the provisioning and billing triggers associated with all services and special offers, and he or she must also be able to confirm the service is activated as required once the order is taken. When it comes to fielding service complaints, CSRs must have a full-service view of the subscriber's package together with visibility into all service and special offer options to facilitate up-selling. And, of course, the CSR must be able to view status and performance metrics on that subscriber's service.

Today, many customer service departments are a long way from having these automated capabilities at their fingertips. Even at the basic level of activating multiple services, CSRs frequently have to touch multiple provisioning and billing systems to get a two-service order such as high-speed data and digital voice up and running. And it gets worse when other services are added to the new order. Such conditions add costs to the ordering and activation process and the complexities of the multi-step activation process can also lead to provisioning errors that drive costs even higher.

For example, one MSO recently recorded a 2% order activation error rate after adding VoIP service to its offerings. This error led to more calls and truck rolls, cutting significantly into ROI on the new orders. This



provider decided to adopt an end-to-end service activation solution to enable it to prevent errors and reduce service rollout costs.

The extent to which universal service activation technology can be employed to facilitate customer self-service is another important contributor to cost savings and improved responsiveness to customer needs and market dynamics. Along with supporting online ordering without the intervention of CSRs, providers should be able to reduce the drain on maintenance and repair resources by allowing subscribers to participate in diagnostic tests while on the phone with CSRs before technicians are dispatched.

Accommodating CSP growth and operations consolidation

Another driver behind the need for universal service activation is the operational requirements for CSP growth and consolidation. Consolidation of operations at regional and national levels creates a pressing need for an integrated multi-service activation capability that allows marketing departments to launch new services and offers on a pan-system basis. Marketing departments also require the flexibility to tailor these services and offers to the requirements of each local market.

At the same time, many operators find themselves having to change their operational support systems (OSS) to keep up with subscriber growth, new service billing and provisioning requirements. Smaller CSPs are outgrowing outsourced approaches to service activation and larger providers are outgrowing the functional capabilities of homegrown OSS platforms.

Typically, the steps taken to address these needs fall short of what is needed to meet all the new service and marketing requirements discussed here. New OSS solutions deployed to address these situations largely preserve the silo-based framework, especially on the service activation side, owing to the heavy fork lifting that would be required to support a fully integrated operating environment across all network elements.

A comprehensive service activation solution

Service Activation Center from Incognito Software accommodates all the requirements laid out in the preceding section of this paper. Service Activation Center achieves operational cohesion through the consistent application of business logic to define service activation processes, resulting in the end-to-end integration of access network technologies, back-office support systems, and end-user devices.

Specifically, the solution manages the subscriber service activation flow through:

- CSR interfaces
- Billing integration and mediation
- Integration with device provisioning mechanisms
- Video headend integration
- Voice soft-switch integration
- Email and Web space integration

Service Activation Center eliminates the arduous manual procedures that are currently required to implement every new service and marketing strategy. It achieves this by tying into and orchestrating the tasks performed by all network and operation support components that are essential to implementing every service. And



because it is built on a highly modular architectural foundation, Service Activation Center can accommodate whatever new types of services and attendant business models operators may choose to introduce over time, avoiding time-consuming and costly revamping of existing back-office and other operational components.

The solution architecture

Service Activation Center is built on a modular architecture supporting virtually unlimited extensibility and scalability. See Figure 1 on the following page for an illustration of how Service Activation Center fits into the operator's network.

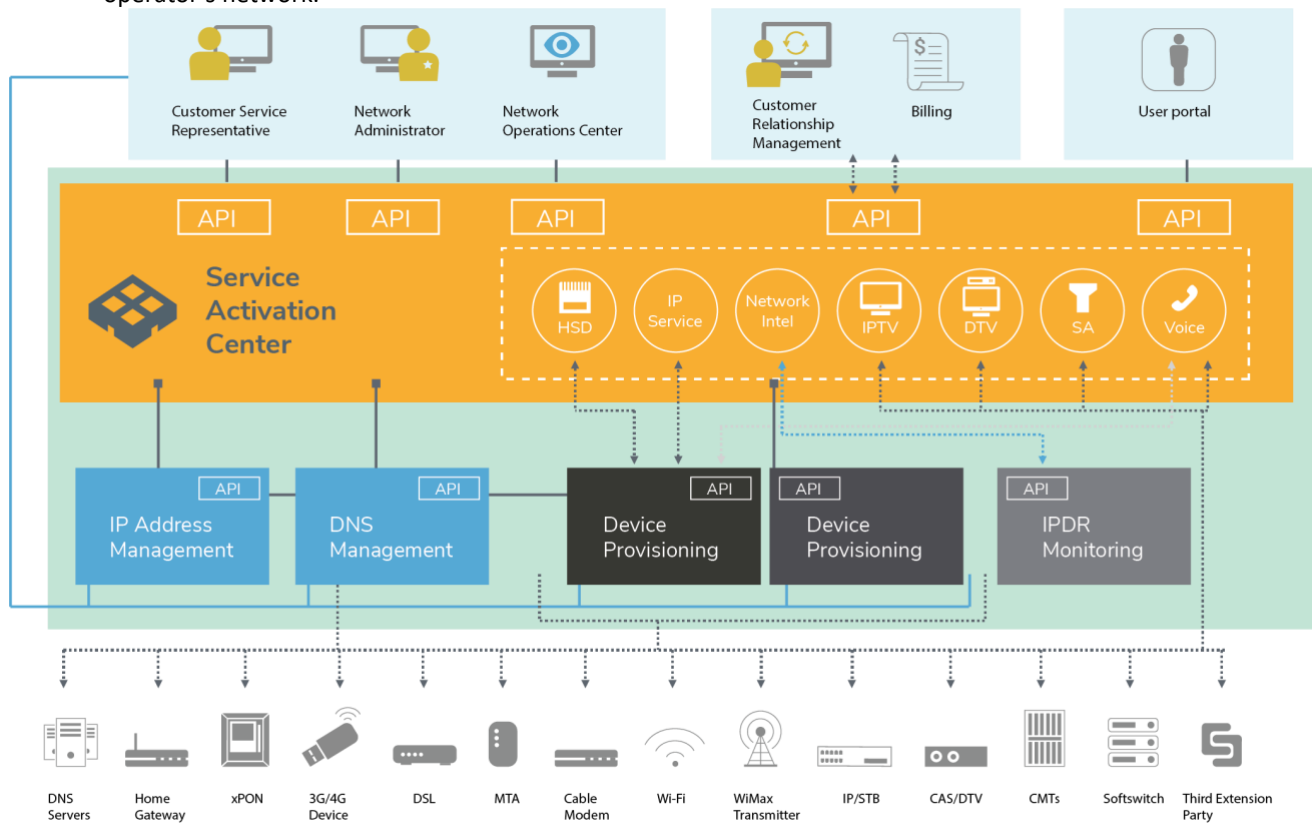


Figure 1: The modular architecture of Service Activation Center

Service Activation Center follows a distributed component-based architectural design. This consists of five layers:

- Platform: consisting of the management modules that provide systems services to other layers
- Applications: encapsulates business processes, rules, transactions, and workflow
- Interfaces: portals to other business applications and users, including graphical user interface (GUI) and SOAP API (Application Programming Interface)
- Business objects: exposes generic attributes and recurring entities and behaviors upon which applications can be quickly constructed
- Adapters: supports the integration of services with external hardware and software systems



Service Activation Center comes with many out-of-the box service adapters and management modules for service activation functions that are common to most CSP needs. These adapters have already been integrated with leading network and back-office system components from multiple vendors, ensuring that operators can quickly put Service Activation Center to work as a central activation interface for all departments.

At the same time, operators can request or, with the help of Incognito, design custom-made service adapters and management modules using simple coding instructions that can be integrated with specific vendor system components to support new types of services. This ongoing expandability and scalability rest on the fact that any service adapter connecting with the Service Activation Center core provisioning engine can interact with relevant management modules via messages delivered over the message bus.

The Northbound Interface (NBI) is a simplified single API that enables communications flexibility and is designed to accommodate all service-related applications. The NBI is a well-defined interface with generic definitions for services and devices that transforms requests from external systems into Service Activation Center-compliant messages and forwards them to the solution's server.

Incognito Service Activation Center can be used to manage the full lifecycle of service orders. Providers use Service Activation Center to launch new services, reduce data entry, manage service orders, enhance reporting, and improve the subscriber experience through more efficient processes and greater transparency. This solution plays a key role in the order-to-payment workflow including decomposition of the service order, service fulfilment, and completion of the order triggering the commencement of the billing cycle.

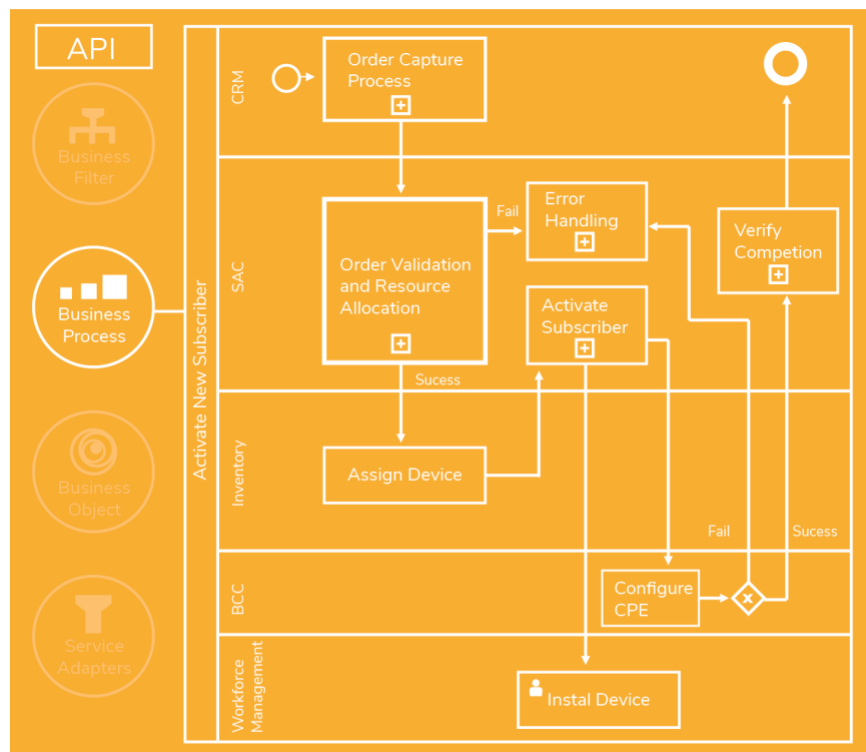


Figure 2: Service order lifecycle management with Service Activation Center using BPMN 2.0



Service Activation Center provides a view into the activation process through its workflow tracking feature. No matter how complicated the workflow, whether it is a straightforward single service activation, or a complex multi-step process that requires communication with multiple external servers, Service Activation Center gives operators insight into the status of the activation. Set up alerts through email, SMS, or SOAP request once an order has reached a certain stage, stalled, or has been completed.

The modular architecture allows Service Activation Center to support all the broadband technologies related to cable and other providers' services, including DOCSIS, TR-069, PacketCable MultiMedia, SIP, WiMax, and FTTH. It also provides the mechanisms by which Service Activation Center enforces the integrity of all transactions across these multiple platforms based on the operator's defined business process rules.

Service adapters

A key to transactional integrity is the fact that adapters come with built-in features that help track each adapter's participation in transactions to facilitate adaptation to transactional failures. Adapters also provide a consistent queuing mechanism for asynchronous non-transactional operations with external entities.

By hiding the integration details associated with specific external components, the adapter layer decouples applications from external systems, allowing similar types of adapters for other external systems to be plugged in or taken out with minimal changes to the Service Activation Center business layer. Thus, the architecture allows operators the flexibility to change out third-party components as technologies evolve without interfering with the service activation processes.

Service Activation Center in action

The versatility of Service Activation Center is clear when the number of subscribers using the platform is considered. Providers across the globe use Service Activation Center to manage approximately 10 million subscribers and about 100 million service subscriptions, such as data, video, and voice services, worldwide. These providers are continually extending the solution's capabilities to a broad range of new programs that vary greatly from one operator to the next. By leveraging the system's open application programming interfaces (APIs) and Incognito's extensive knowledge of the supplier ecosystem, operators are able to quickly design and add modular adapters that allow marketing and operations personnel to implement new offerings through Service Activation Center as quickly as existing services.

Service Activation Center customers include providers such as Digicel in Jamaica, Megacable in Mexico, Chongqing in China, ComClark in the Philippines, PlanetComm in Thailand, Setar in Aruba, and NBN in Australia. These providers use Service Activation Center for a range of service activation and promotion efforts, illustrating the versatility and game-changing nature of this platform.

These providers and many others are continually adding new adapters as they discover the impact that Service Activation Center can have on planning and time-to-market with new offers. For example, one large triple-play provider's marketing department discovered how free they were to create and introduce new offers after putting Service Activation Center to work to support a pay-as-you-go option for broadband customers. Service Activation Center is well integrated into business and operational support systems (B/OSS). The addition of new adapters has little or no affect to upstream systems due to the platform's abstraction layer.



In another instance, an MSO wanted to deliver triple-play consumer services over a Gigabit Passive Optical Network (GPON) with the flexibility to easily add new services and offers simultaneously over both its legacy network and the newer GPON network. This was achieved by extending Service Activation Center activation capabilities directly to GPON customers.

The solution's capabilities also apply to service applications for wholesale customers. This was illustrated with during a wireless carrier's recent implementation of Service Activation Center modules to serve the different Service Level Agreement (SLA) requirements of multiple resellers. These modules are now ensuring enforcement of the varying requirements for all the carrier's reseller customers.

The rollout of DOCSIS 3.1 is the latest challenge for cable operators. Even with DOCSIS 3.0, many cable operators found that their existing element management systems were not equipped to work smoothly with the upgrade. Service Activation Center is compatible with DOCSIS 3.0 and 3.1, enabling interoperability and service flexibility.

Conclusion

The momentum around Service Activation Center applications is building rapidly as service providers discover powerful new approaches to marketing and new service introduction that are within reach with this platform. Many operators use Service Activation Center with its out-of-the-box adapters and modules exactly as Incognito designed them, while others choose to use the solution to deliver configurable services to suit their specific environment and customer needs, for example: standalone prepaid service independent of any other B/OSS and self-service portals to configure devices from any location with parental controls, diagnostic information, and real-time or monitored usage data displayed. These customers are approaching Incognito for assistance in building new types of modules to capture new opportunities and improve quality of experience for subscribers.

Incognito can usually build these new modules very quickly without needing to send personnel on site. Incognito is continuously developing new modules and adapters to fit emerging market needs. In some cases, as with TV Everywhere, these modules are designed for subscriber-facing services, and in others, they are designed to meet internal operational needs or requirements tied to affiliations with outside partners, as is the case with implementations of interactive TV applications. Indeed, many existing Service Activation Center modules are designed for non-subscriber-facing requirements, such as monitoring of soft-switches and other network systems.

Service Activation Center has become the solution of choice for a growing number of network operators across the globe at a time when network operators have an unprecedented array of complex interactions to manage across network, back-office, and end-user components. Once in place, Service Activation Center gives operators an opportunity to step back and look at a wealth of opportunities to cut costs and increase revenues, often in ways they never thought possible.

There may be nothing more vital to network operators' competitive strength than the efficient orchestration of service activation, special offers and component operations across all networks and external interfaces. Service providers face a daunting list of challenges to provide a high quality



of experience to subscribers — but the ability to easily and quickly activate new services and special offerings should not be one of them.

About Incognito

Incognito Software Systems Inc. provides software and services solutions to help global service providers manage and monetize broadband services. Over 200 customers worldwide, including Cox, Claro, Globe, Foxtel, and SingTel, leverage Incognito solutions to fast-track the introduction of innovative broadband services over fiber, LTE, and cable technologies, while delivering a great customer experience. The company is a division of the Lumine Group, a portfolio of Constellation Software Inc., the largest independent software company in Canada.

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