

Think!CRM

Technical System Overview



Introduction

Think!CRM is a set of software components supporting customer relationship management (CRM) business functions and processes of service providers. Because it is based on the standard TeleManagement Forum (TMF) Shared Information Data Model (SID), it is especially suitable for telecommunications service industry (i.e. fixed-line and wireless carriers, ISPs, MVNOs, and cable TV operators).

Think!CRM is comprised of 5 standard modules:

- **Think!Customer** is the central CRM module; its basic function is to manage all customer-related information (such as name, address, status, customer account etc.). Think!Customer integrates with all Think!CRM modules (presenting customer's orders, agreements, assigned products and services, incoming and outgoing contacts etc.) as well as with external (legacy) systems that deal with customer data. It can be understood as the central point where all customer data (available to the enterprise) can be obtained on a single screen.
- **Think!Service Inventory** contains all products and commercial product offerings that are offered to customers; it fully implements both – the commercial packaging of products into product offerings, and technical breakdown of products into services. Product offerings hold all information required for rating (rates, tariff plans) and billing (one time charges, recurring charges). On the other hand, as products are broken into underlying services, this module easily integrates with an inventory application.
- **Think!Sales** comprise 2 sub modules:
 - **Customer requests** support initiation of fulfillment process. The application collects structured and detailed data on the customer request for a new product or for alteration of an existing product. Customer requests are independent of product/service type: the definition of requested product is given by Think!Service Inventory. Customer requests join a customer from Think!Customer with a product from Think!Service Inventory adding parameter values required to fulfill the order.
 - **Agreements** enable service providers to manage contracts and agreements with customers. In the fulfillment process, Agreements obtain data from Customer requests and allow printing and managing documents.
- **Think!Contacts** manage data of all incoming and outgoing contacts with customers. Contacts can be requests, responses, notifications, or agreements. Think!Contacts support various communications channels, such as customer portal, e-mail, call center, snail mail (integration with a document management), fax etc.
- **Think!WorkOrders** is a complementary module for integrating CRM functions with service management & operations and resource management & operations functions. Think!WorkOrders extend customer requests with technical design (obtained from an inventory) and field force management.

Think!CRM integrates with back-office business support systems (BSS) and operation support systems (OSS) using SOA-based infrastructure. Think!CRM offers business web services (defined in compliance with the TMF eTOM) to form a common communication service bus. Fulfillment process is taken out of Think!CRM application code and is implemented using BPM engine (such as BEA WebLogic Integration or AquaLogic BPM).

Think!CRM is an operational CRM system. However, it can be upgraded with analytical CRM functionality (for instance: data warehouse for ad-hoc analytical queries) in order to support, for example, retention & loyalty processes.

Think!CRM

1.1 Business Context

The TeleManagement Forum enhanced Telecom Operations Map (TMF eTOM) can be used to describe the business context of Think!CRM. eTOM is an ongoing TMF initiative to provide a business process framework for use by service providers and others within the telecommunications industry. It describes all the enterprise processes required by a service provider and analyzes them to different levels of detail according to their significance and priority for the business. For telecommunications service providers, eTOM serves as the blueprint for process direction and provides a neutral reference point for internal process reengineering needs, partnerships, alliances, and general working agreements with other enterprises.

On the highest level, eTOM decomposes the enterprise to 3 groups of processes: Enterprise Management, Strategy, Infrastructure & Product, and Operations (see Figure 1). Operations are further broken into 4 vertical end-to-end processes (operations support & readiness, fulfillment, assurance, billing) and 4 horizontal process groupings (customer relationship management, service management & operations, resource management & operations, and supplier/partner relationship management).

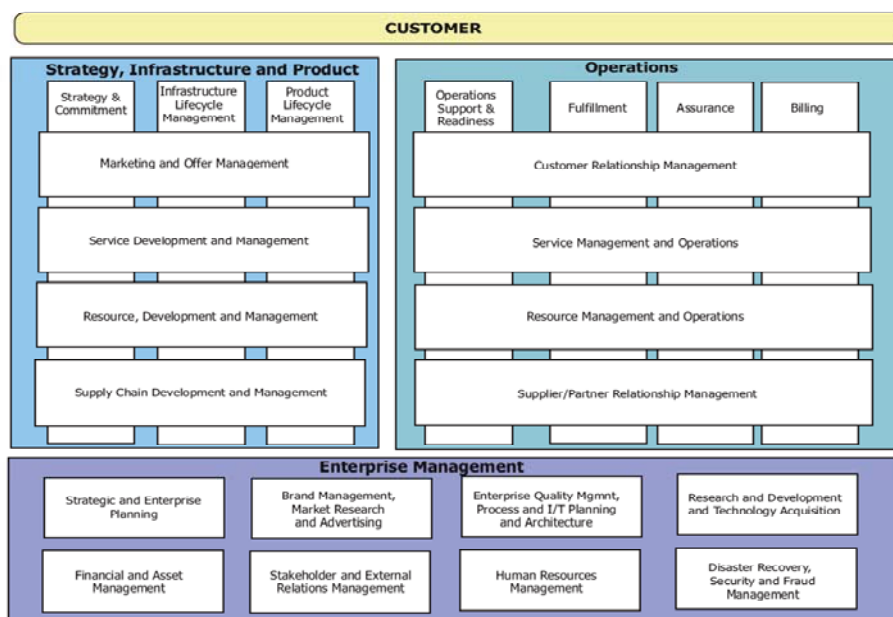


Figure 1: enhanced Telekom Operations Map

eTOM defines business framework for Think!CRM. Think!CRM modules support business functions & processes that eTOM places into Operations space. For detailed view, see Figure 2.

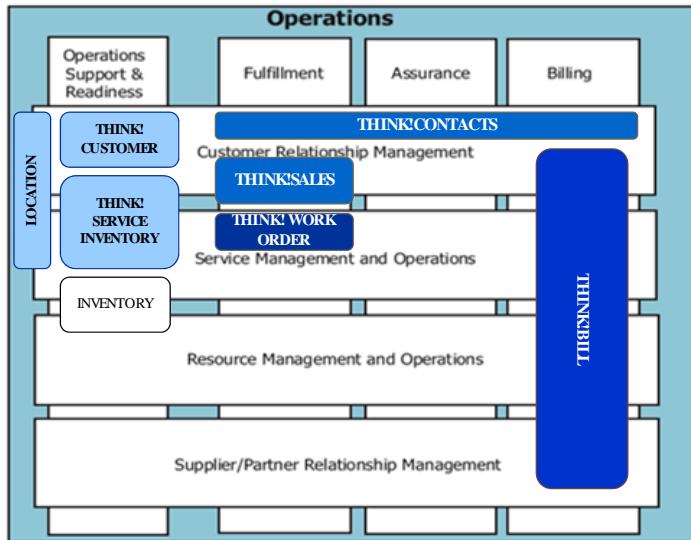


Figure 2: Think!CRM modules covering eTOM processes

1.2 System Architecture

Think!CRM is comprised of 5 main application modules: Think!Customer, Think!ServiceInventory, Think!Sales, Think!Contacts, and Think!WorkOrders. In addition, to integrate with a process engine outside the core of data manipulation components (Think!CRM modules), Think!CRM adds the Taskbox. Taskbox can be understood as a mailbox where users receive tasks related to order fulfillments. Each task is linked with an appropriate Think!CRM module and serves as user's presentation of the process and as a communication between data manipulation modules and process. Figure 3 shows high-level system architecture.

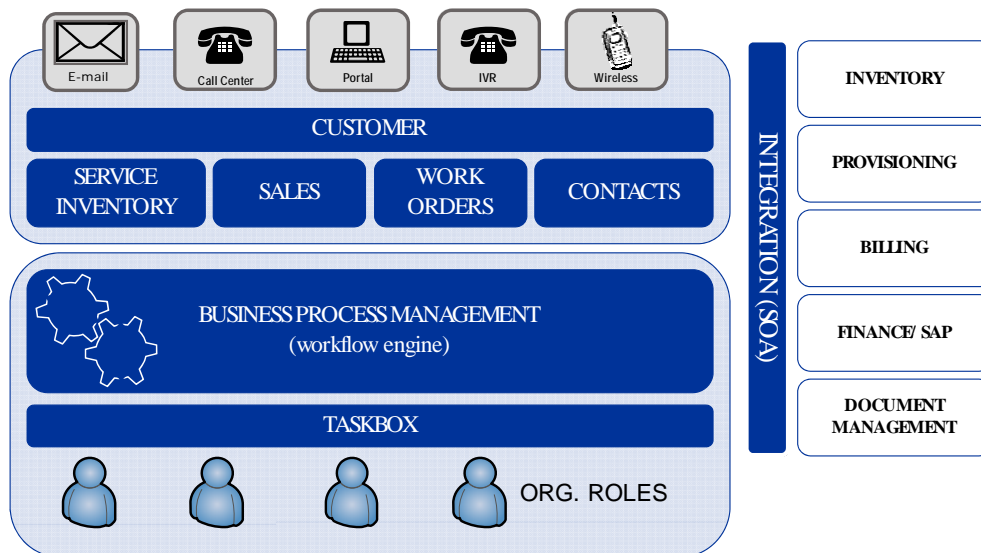


Figure 3: Think!CRM system architecture

Figure 3 shows the role of Think!Customer as the central CRM module as well. Think!Customer is integrated with the whole Think!CRM in terms of ability to present all customer-related data in a single application. Even more – Think!CRM does not only offer its unified view to all customer data, available to the carrier, to its Web-based thin client application (typically used by carrier's back-office employees), but provides data to all supported communication channels (customer portal, call center, front office etc.).

1.3 Process Automation Utilizing BPM and SOA-based Integration

Fulfillment and other CRM-related end-to-end business processes are defined in a business process management (BPM) tool rather than within Think!CRM modules. Think!CRM modules are limited to data manipulation and execution of single-person activities that are implemented as application wizards. In the eTOM terminology, these wizards can be understood as level 5 (or below) processes. What is above level 5, is a subject of definition within the BPM.

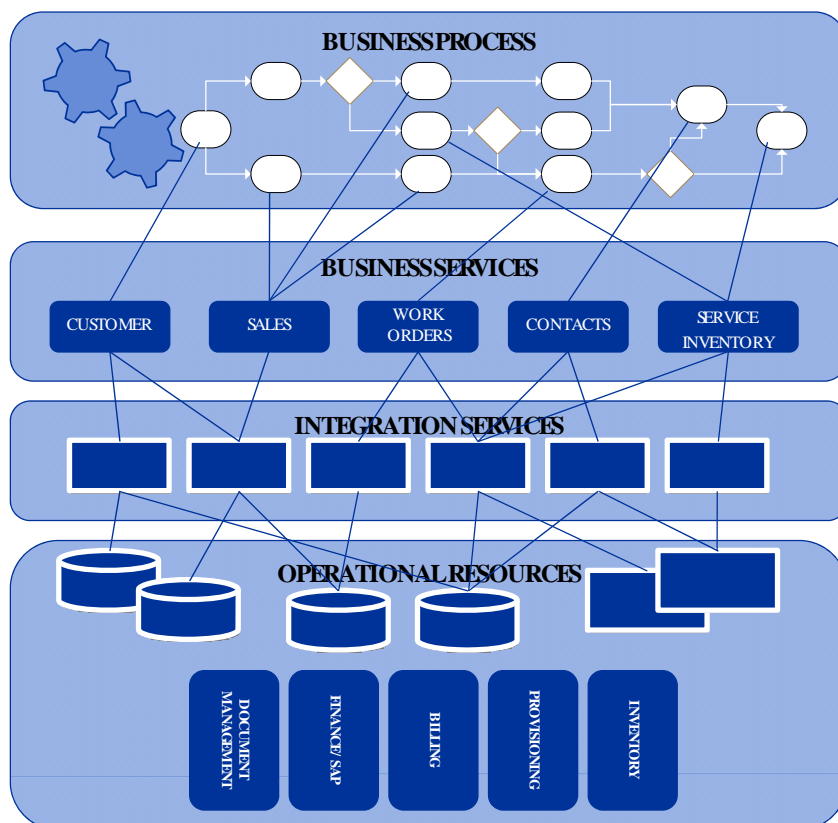


Figure 4: BPM working with loosely coupled SOA architecture

Think!CRM modules offer business-aware web services that enable process orchestration within the BPM tool. Business context of these web services is defined using the eTOM terminology. Each business service provides loose coupling by encapsulating all internal technical logic and integration with required integration web services. Business services expose interfaces, so called agreements, and can be used not only by a process engine to implement single steps (activities), but also by external applications that need access to CRM entities.

1.3.1 Think!Customer

Think!Customer is the central CRM module; its basic function is to manage all customer-related information. Think!Customer integrates with all Think!CRM modules (presenting customer's orders, agreements, assigned products and services, incoming and outgoing contacts etc.) as well as with external (legacy) systems that deal with customer data. It can be understood as the central point where all customer data (available to the enterprise) can be obtained on a single screen.

Think!Customer offers the following functionality:

- central database for prospect and existing customers (subscribers) for all business processes within the enterprise
- data entry controls assure consistent and clean data
- integration basis for customer data outside Think!Customer and outside Think!CRM
- wizard supported data entry
- single-screen customer data display

1.3.2 Think!Service Inventory

Think!Service Inventory contains all products and commercial product offerings that are offered to customers; it fully implements both – the commercial packaging of products into product offerings, and technical breakdown of products into services. Product offerings hold all information required for rating (rates, tariff plans) and billing (one time charges, recurring charges). On the other hand, as products are broken into underlying services, this module easily integrates with an inventory application.

Think!Service Inventory offers the following functionality:

- central database of products and product offerings that are offered by the service provider to its customers
- technical services can be mapped into various products and product offerings
- categorization to simplify reporting
- multi-level product structure
- product parameterization

Think!Service Inventory unifies product- and service-data in different systems (rating, billing, inventory, ERP etc.). It enables enterprise to manage a unified inventory of services, products, product offerings, pricelists, and tariff plans.

1.3.3 Think!Sales

Think!Sales supports selling processes (order entry, process initiation, closing agreements etc.). The module can be logically decomposed into 2 sub modules:

- Customer requests support initiation of fulfillment process. The application collects structured and detailed data on the customer request for a new product or for alteration of an existing product. Customer requests are independent of product/service type: the definition of requested product is given by Think!Service Inventory. Customer requests join a customer from Think!Customer with a product from Think!Service Inventory adding parameter values required to fulfill the order.
- Agreements enable service providers to manage contracts and agreements with customers. In the fulfillment process, Agreements obtain data from Customer requests and allow printing and managing documents.

When a customer orders a new service or a change of existing service, a customer order is issued. Customer order associates data from Think!Customer (detailed customer data) and Think!Service Inventory (product specification) and defines service parameter values. There are 3 types of customer requests: new service requests, service-based requests and customer-based requests. Each of these 3 request types has subtypes in order to trigger the correct BPM process once the order is initiated.

Customer orders support the following functionality:

- enter new service request, service-based request or administrative (customer-based) request
- full request lifecycle management: from prospect (request proposal) to fulfilled
- basic and advanced services support
- generic process support
- various communication channels are supported (front office, customer portal etc.)

- enter parameter values (when creating a product instance according to a product specification, parameter values have to be defined)
- requests can be referenced to other requests
- direct access to requests & access through Think!Customer
- search engine
- order tracking (BPM integration)
- printing & archive capabilities

Agreements support the following functionality:

- create an agreement based on a customer request
- direct access from customer requests
- one-time charge alteration (discounts)
- link with customer account & fast customer account creation
- template-based reporting system
- manual agreement updates (for instance using a word processor)
- user-defined dynamic agreement number generation (format & sequencing)
- direct access to agreements & access through Think!Customer
- search engine
- printing & archive capabilities

1.3.4 Think!Contacts

Think!Contacts manage data of all incoming and outgoing contacts with customers. Contacts can be requests, responses, notifications, or agreements. Think!Contacts support various communications channels, such as customer portal, e-mail, call center, snail mail (integration with a document management), fax etc.

This module supports saving each contact between customer and the enterprise. Using contact categorization, it simplifies analytical statistic reports (e.g. how many customers complained about the service level, what is the percentage of successful selling contacts etc.). Think!Contacts support data entry and integration with specialized solutions for call centers (CTI), document management, web (portal), e-mail, and front office.

Contact can initiate actions in associated Think!CRM modules (for instance, Customer requests).

1.3.5 Think!WorkOrders

Think!WorkOrders is a complementary module for integrating CRM functions with service management & operations and resource management & operations functions. Think!WorkOrders extend customer requests with technical design (obtained from an inventory) and field force management.

Think!WorkOrders support the following functionality:

- customer request extension with technical service design (typically from an inventory application)
- create work orders of different types (telephone exchange, MDF, CPE etc.)
- assign work orders to employees
- a work order may have several tasks: tasks can be referenced to a task list, defined by an inventory application (for instance, a technical service design) or manually entered on the work order
- work order confirmation (serves as input for billing, assurance, and customer account update)
- drives process workflows (control nodes may obtain information automatically from work orders)
- printing capabilities

About Marand

Marand is a customer-centric company providing flexible, standard-based solutions for service providers worldwide, while establishing a global network of partnerships with leading international system integrators and technical consultants, as well as providers of complementary hardware and software products.

Based on the success of its project teams, long-term engineering agreements have been formed with several international companies. The software engineering and system integration capabilities of Marand are based on ISO 9000-3 standards.

Marand is a corporate member of TeleManagement Forum (www.tmforum.org).

“Marand has made one of the most significant contributions to the SID – a complete Billing model, including the:

Customer Bill,
Applied Billing Rates,
Product Price, and
Product/Service/Resource Usage,

basically completing the part of the SID model used by the eTOM Billing end-to-end horizontal process.

Very few other companies have made this type of contribution. The Marand individuals worked closely with the SID team leads to make this possible.”

- John Reilly, Team Leader, TMForum



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