

CRAMER[®]

changing the economics of telecom™



**Cramer6 OSS Suite:
are you ready?**

Introducing next-generation service fulfillment

For convergent service providers, Cramer6 OSS Suite is the first order to network service fulfillment solution to bring new services to market in “next-generation” time.

Cramer provides one COTS-based solution to rapidly originate and fulfill services, including all processes from order to network. This gives service providers the ability to design, deliver and assure new services at accelerated speeds, and radically simplifies the OSS environment.

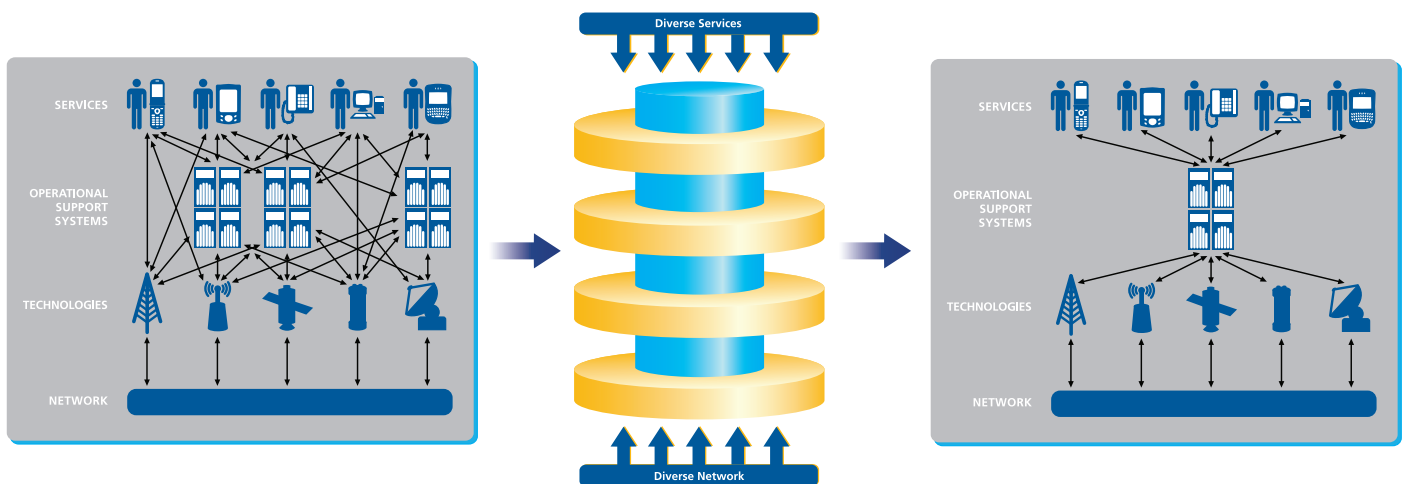
Cramer6 OSS Suite is the only operational support system (OSS) able to support next-generation transformation without creating further fragmentation of the OSS environment, because it can manage both legacy and new technologies from a single platform.

Only Cramer has been holistically designed on one common architecture, instead of being assembled from disparate products. It provides complete transparency of the logical, physical and service data in the network and their interdependencies. Encapsulating business and technical policies in templates enables it to support automated fulfillment on a whole new scale. With this comes the ability to plan, deliver and assure new services to the volumes required in a next-generation world.

Universal service-ready networks will be central to the success of all communications service providers going forward, regardless of their origin. Operational agility and efficiency demand a universal OSS — capable of capitalizing on the scale and flexibility of next-generation networks.

Cramer’s software is built on a solid foundation of universal knowledge of the network, regardless of the technologies, services or vendors deployed. Having this foundation makes full automation possible.

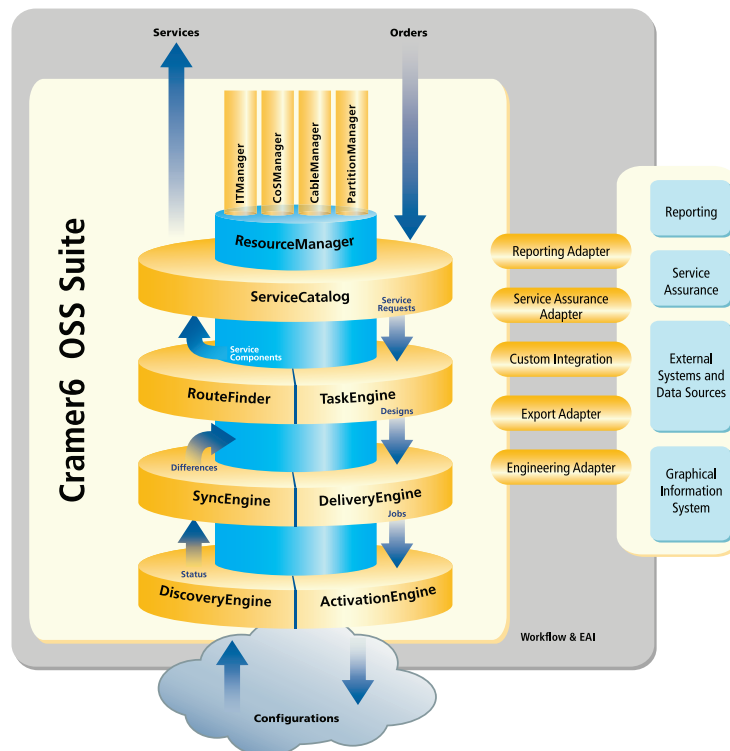
With Cramer6 OSS Suite, we are ready for the next-generation world.



Doing it differently, doing it better.

Other vendors are functionally focused. Their solutions tend to be constrained to a single vertical stack, or single process or function. This makes it difficult to expand or extend from supporting one service to multiple services, and from one technology to multiple technologies. The result is a series of “stovepipes” within which specialist tools further fragment operational processes, making it difficult if not impossible to do things simply and effectively.

Cramer is different. Cramer has created a single, abstracted model of the entire network that is intrinsically tied to the network, which means that it remains accurate and complete over time.



Cramer’s network resource model has been developed and deepened over the past decade, and proven in over 80 customer sites worldwide. It is this model that makes it possible to simplify OSS functions and thereby accelerate time to revenues while reducing cost and risk.

Cramer6 OSS Suite delivers functionality that uses the power of the model to solve the services management problem and the activation problem.

Cramer is uniquely able to deliver cost effective fulfillment of next generation services today, on a fundamentally extensible and scalable architecture that acts as a foundation for expansion tomorrow.

Service automation — one flow-through process.

Cramer6 OSS Suite provides functionality to automate the origination and fulfillment of services, from order to network. Cramer can take an order directly from business support systems, such as self-service and CRM, and perform all necessary back-office processes from decomposition, feasibility checks, allocation of resources and finally activation on the network. Fully automated.

Only Cramer can perform service automation for multiple types of services, technologies and vendors from one system. With Cramer6 OSS Suite, you can choose to start with fulfillment for one service, such as broadband, IP/VPN, VoIP or IPTV, secure in the knowledge that our product-based approach means you can be up and running quickly. Some of our customers have been operational in as little as three months.

At the same time, Cramer6 OSS Suite has been built for industrial scale deployment. Cramer6 OSS Suite has the carrier-class credentials to act as the platform for all of your services — and you can roll it out one service at a time. Cramer is the only vendor able to support both the immediate need for new services, and the parallel drive towards OSS rationalization in the back office — from one COTS-based platform.

Cramer6 OSS Suite next-generation fulfillment features

Solving the services management problem.

Multiple services, bundled services, content-based services. Where previously order management has been complex, new market imperatives require a radically different approach. Service providers need to manage orders for services both old and new. Plus, they need to handle the logistics of taking content from multiple sources to fulfill an order. And finally, they need to combine elements to produce new services. For example, one handset for both home and mobile, Video on Demand (VoD) and Voice over IP (VoIP).

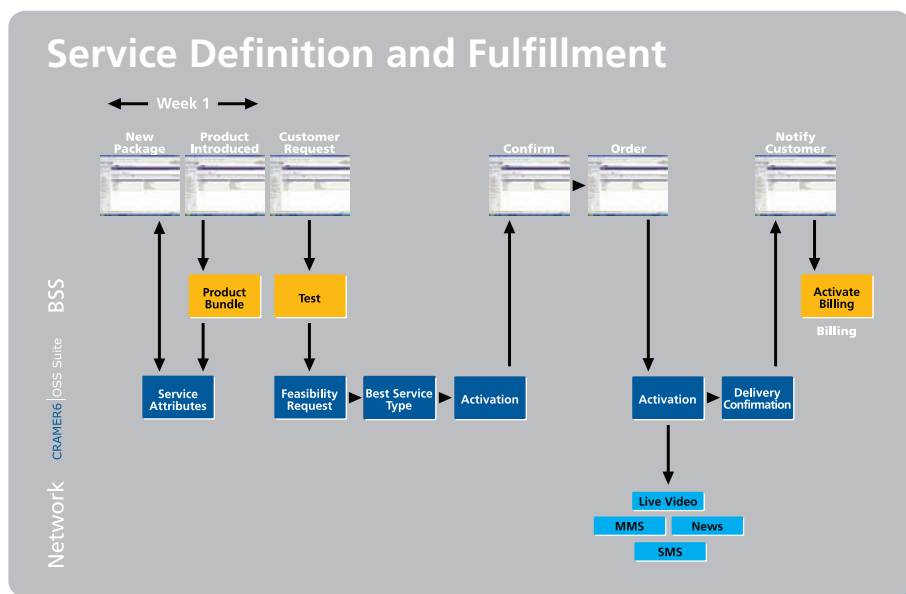
Order management has traditionally been problematic for service providers because business systems have needed to “dive down” into the network — and to an unacceptable level of complexity — for simple tasks like feasibility checking and capacity allocation. The complexity and volume of next-generation services will make this already cumbersome approach impossible.

Cramer6 OSS Suite solves the traditional problem of the interface between the business systems and the network. It does this uniquely by providing a clear and complete set of the possible combinations of services that can be sold on the one side, and by breaking all the components of a validated order into the necessary sub-tasks and instructions on the other — which it can then activate on the network. It provides a level of abstraction between the BSS and the OSS, enabling order management systems to manage the business of customer orders while Cramer6 OSS Suite takes care of the technical aspects.

Cramer6 OSS Suite answers the specific need to manage next generation, content-based services. Such services are comprised of different kinds of elements — content, IT and network — and these are typically managed under separate domains. Where they must be combined to deliver a specific service to a specific device, service providers need a holistic view of all elements in order to be able to design, fulfill and assure with maximum efficiency and minimum risk. With Cramer6 OSS Suite, you can maintain one holistic view of content-based services, from content-server to customer, including content, IT and network elements.

Deepening the network model to support next-generation services.

Class of Service management. Cramer6 OSS Suite provides powerful capabilities for Class of Service management to enable you to manage different levels of service and bandwidth in the core and access networks. Cramer’s ability to model and manage Class of Service at bandwidth level finally makes it possible to proactively manage IP capacity on a commercial basis.



Uniquely, Cramer6 OSS Suite enables Class of Service to be taken into account within the service fulfillment process. Capacity can be booked in advance and recognized as “taken” when further capacity requests are made. You can choose when and how much to overbook, with lower risk of SLA violation, resulting in a higher level of predictability in service quality and consequently greater customer satisfaction.

Capacity and cost — sweating assets. Only Cramer has a market leading heritage of providing a holistic view of the entire network over all technologies, vendors and processes, giving service providers a complete and accurate picture. This precise and consistent view of the network makes planning faster and more accurate. Network and service rollouts can be accomplished in record time. Uniquely, each network change, whether driven by network enhancement, service reconfiguration or customer fulfillment is reflected in Cramer as it occurs. This means processes are always executed against an accurate, up-to-date model of the network. While accuracy and completeness have been important before, the demands of a next-generation world make this requirement critical.

Example: How Cramer6 OSS Suite simplifies service definition and fulfillment.

Product definition process

Telco X Product Manager defines a product “Olympic Dreams” comprising multiple services — mobile alert messages when events happen, IPTV broadcast of events to home, video clips of “medal moments” to PDA, including the ability for consumers to define which country and events they are interested in monitoring.

The product is defined in Product Lifecycle Management (PLM) software, which seamlessly integrates with Cramer to determine if services are technically feasible and if suitable bandwidth will be available. Having received confirmation from Cramer, the PLM software completes definition and places the product in the catalog as available for sale.

Without Cramer, the PLM software would need to reach into a range of applications responsible for each product component, managing the interdependencies between each element, resolving substitutions and reallocating different technology elements where necessary.

Order and fulfillment process

- **Order:** Joe Smith orders “Olympic Dreams” through his personalized self-service portal. Joe specifies that he wants to keep track of how the Australian swimming team is performing. Joe does not already have IPTV service at home, so a feasibility request is passed to Cramer, which verifies that Joe’s existing broadband service supports IPTV. Order details are passed to Cramer via its standard gateway.
- **Fulfillment Step:** Cramer uses policy-based automation to identify and reserve appropriate bandwidth, together with all the service parameters needed to provide Joe’s service.
- **Activation Step:** Cramer configures all necessary equipment according to the service parameters it previously defined. Cramer communicates to the self-service portal that the service is now available.
- **Result:** Joe’s service is successfully provided, making optimum use of available resources.

Dave Jones, who lives in the same area as Joe, also orders an IPTV service. Cramer confirms feasibility and allocates resources as per above. In this instance, a site visit is required, during which the Field Engineer assigns Dave’s service to a different card to that specified in the work order.

- **Discovery Step:** Cramer has been configured to regularly run an automated discovery and synchronization process. This identifies that Joe’s service has been assigned to a different card to that originally specified. Cramer automatically updates its inventory according to a configured business policy.
- **Result:** Cramer has automatically maintained the accuracy of its service-network model. Subsequent assurance, capacity management or customer change processes complete successfully as a result.

Solving the activation problem.

In the next generation world, processes close to the network that have traditionally been viewed as engineering rather than business driven suddenly become key to strategic issues preoccupying the board. Without confidence in successful, accurate activation processes, new time critical services cannot be brought to market, and customers experience delays and faults that give rise to high churn. Equally, optimal usage of network assets is critical to keeping network costs down, and while activation has had no role here in the past, an innovative approach enables resource usage to be optimized to the maximum.

Right-First-Time Activation, in which fallout errors are kept very low, has always been important because of cost and customer satisfaction issues. It's now critically important due to the increased volumes and reduced "time to activation" requirements of on-demand activation. On-demand activation means delivering services in minutes not weeks, when the customer wants them. Relying on activation to gain a competitive edge requires well designed standard processes for build and activation of next-generation networks.

Cramer6 OSS Suite uses an inventory-centric approach to activation, eliminating duplication of data and functionality and reducing cost and error rates. More critically, the inventory-centric approach enables "Now and Next" planning, to enable complex changes without service disruption.

All on an industrial scale.

Cramer6 OSS Suite significantly extends delivery of Cramer's founding vision, towards providing a single point of management for the entire operations function of service providers. It introduces new products, but with Cramer, new functionality comes with peace of mind. Cramer has one core architecture that has been proven at over 80 customer sites worldwide, with three key features that make it the right platform for next-generation-ready service providers. These are:

Carrier-grade, enterprise-wide

- Scalability proven through deployment at Tier 1 service providers worldwide, and published benchmarks by BT, Oracle, IBM and Sun
- One configurable code base deployed at over 80 leading service provider sites globally
- Detailed and complete capacity and data model.

Extensibility

- Productized integrations
- SOA-based interfaces
- Standards-based — MTOSI, J2EE
- Partner ecosystem.

Flexibility

- Out-of-the-box technology models
- Codeless configuration
- Designed for upgrade
- Supports evolving business models.

Cramer6 OSS Suite is built to support the needs of truly industrial scale next-generation service providers. We're ready. Are you?

Example : How “Now and Next” approach ensures controlled reuse of service resources.

Customer Order: Joe Smith is changing apartments. He'll take his DSL router with him and wants to retain his IP address. Joe goes online and completes his “Change Address” notification on his personalized self-service portal.

Fulfillment Step: Cramer receives the change notification electronically via its standard gateway. Cramer validates that Joe's new and old apartments share the same DSLAM group and IP address range. It also identifies Joe's existing services and validates that bandwidth of a suitable class of service is available to support these.

Cramer responds via the self-service portal to Joe confirming that his request is being processed and he can retain his IP address. Cramer then uses configured business and technical policies to reserve a link to the new apartment. It also automatically allocates a suitable DSLAM port, assigns Joe's existing IP address to this port and reserves appropriate bandwidth.

Customer Order: Dave Jones is moving into Joe's old apartment building. He goes online and orders a new DSL service, requesting VoIP and IPTV services.

Fulfillment Step: Dave's order details are passed to Cramer, which validates feasibility to provide the service. Cramer identifies that Joe's DSLAM port will shortly become available, and uses “Now and Next” planning to safely reserve that port for Dave's new service. Cramer also identifies that a new IP address is required, and applies a policy-based approach to select and reserve a suitable address from the IP range it manages. Activation is scheduled to occur immediately after Joe's service has been successfully migrated to his new apartment.

Cramer also evaluates whether IPTV can be delivered to Dave and finds that the threshold number of IPTV services delivered over the copper cable bundle serving Dave's apartment has already been reached. It responds via the portal to Dave informing him that IPTV is not currently available.

Activation Step: Joe's moving date has arrived. Cramer activates his DSLAM port according to policy-based service parameters it defined during the Fulfillment step. Cramer initiates an end-to-end test of the service and then updates its inventory to mark Joe's service as “Active.” Cramer initiates an e-mail to Joe to confirm his service is up and running. Joe's previous DSLAM port is de-allocated pending activation of Dave's service.

Dave's moving date arrives and Cramer undertakes a similar activation process for his service, reusing Joe's old DSLAM port as above.

Result: Cramer has enabled the controlled reuse of network resources, while ensuring seamless delivery of services to both Joe and Dave. CapEx is optimized through intelligent reuse of network resources, OpEx is minimized through “Right-First-Time” end-to-end fulfillment.



www.cramer.com

Locations

EMEA

Cramer
3 Sheldon Square
London
W2 6HY
UK
Tel: +44 20 7266 8400
Fax: +44 20 7266 8401

Cramer Technology Centre
Cramer House
The Square
Lower Bristol Road
Bath, BA2 3BH
UK
Tel: +44 1225 471300
Fax: +44 1225 471301

Dubai
P.O. Box 54620
Dubai
United Arab Emirates
Tel: +971 (0)4 214 9845
Fax: +971 (0)4 214 9501

France
121 avenue des
Champs-Élysées,
75008 Paris
France
Tel: +33 1 72 71 85 04
Fax: +33 1 72 71 85 99

Germany
Mainzer Landstrasse 49
60329 Frankfurt am Main
Germany
Tel: +49 69 3085 5001
Fax: +49 60 3085 5185

Israel
Merkazim Building 2000
32 Maskit Street
Herzeliya 46733
Israel
Tel: +972 9 971 3100
Fax: +972 9 971 3133

The Netherlands
Hojel City Centre
Graadt van Roggenweg
328-334, Blok D
3531 AH Utrecht
Nederland
Tel: +31 30 2982270

Spain
Ribera del Loira, 46
Edificio 2
Campo de las Naciones
28042 Madrid
Spain
Tel: +34 91 503 0483
Fax: +34 91 503 0598

Sweden
Herserudsvägen 18
Box 1343
S-181 25 Lidingö
Sweden
Tel: +46 8 636 25 63
Fax: +46 8 636 25 99

North America

Atlanta
1201 Peachtree St., NE
400 Colony Square
Suite 200
Atlanta, GA 30361
USA
Tel: +1 404 870 9130
Fax: +1 404 870 9132

New Jersey
55 Madison Ave.
Suite 400
Morristown,
New Jersey 07960
USA
Tel: +1 973 285 3186
Fax: +1 973 285 3187

Plano
6900 N Dallas Pkwy
Suite 825
Plano, TX 75024
USA
Tel: +1 214 291 7000
Fax: +1 214 291 7001

Toronto
Canada Trust Tower
161 Bay Street, 27th Floor
PO Box 508
Toronto, M5J 2S1
Canada
Tel: +1 416 572 2013
Fax: +1 416 572 4106

Washington, DC
1593 Spring Hill Road
Suite 530
Vienna,
Virginia 22182
USA
Tel: +1 571 633 4440
Fax: +1 571 633 4441

South America

Argentina
Edificio Laminar Plaza
Ing. Butty 240
4º y 5º Piso
Buenos Aires C 1001AFB
Argentina
Tel: +54 (11) 4590 2467
Fax: +54 (11) 4590 2201

Brazil
Brigadeiro Faria Lima 3729
5º andar - sala 520
CEP 04538-905
São Paulo - SP
Brazil
Tel: +55 (11) 3443 6257
Fax: +55 (11) 3443 6201

Asia Pacific

Australia
Level 21, 201 Miller St.
North Sydney
NSW 2060
Australia
Tel: +61 2 9959 2286
Fax: +61 2 9959 2244

India
Level 2, Raheja Centre Point
294 CST Road
Santacruz (East)
Mumbai - 400 098
India
Tel: +91 22 5507 8727
Fax: +91 22 5507 8711

Japan
Otemachi First Square,
East Tower 4F
1-5-1 Otemachi, Chiyoda-ku
Tokyo
Japan 100-0004
Tel: +81 3 5219 1290
Fax: +81 3 5219 1201

© Cramer Systems Limited, 2006
Effective Date: March 2006

Cramer and the Cramer logo, whether or not appearing with the registered symbol, are registered trademarks of Cramer Systems Limited. Any third-party products or company names referred to may be trademarks of their respective owners. This document is valid from the "Effective Date" shown and supersedes any previous issue. It contains summarized information that will be subject to periodic change and customers are advised to check with Cramer Systems that they are using the current version. Cramer Systems has made all reasonable endeavors to ensure that the statements contained within this document are accurate at the time of publication but cannot guarantee that the document is free from errors.