IBM Growth Markets Software Industry Solutions Portfolio

IBM

Information Management	Lotus	Rational	Tivoli	WebSphere	IBM

IBM Software Group
Industry Framework Solutions
Reference Guide

		Telecomms
		Retail
		Banking
	Financial Markets	Insurance
	Government	Healthcare
	Energy and Utilities	Defence
	Aerospace and Defence	Electronics
Automotive	Chemicals and Petroleum	Industrial Products
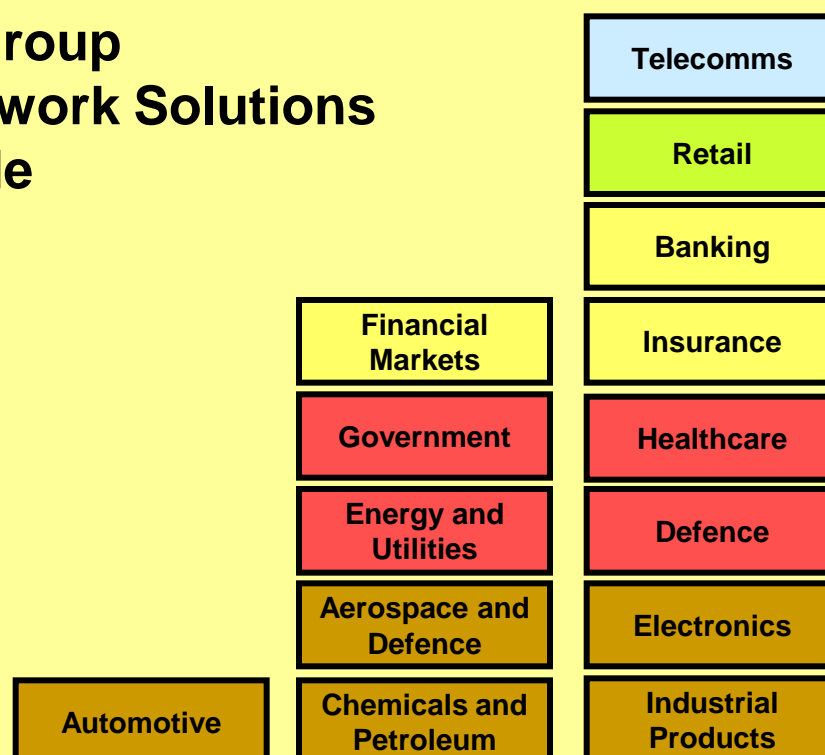
IBM has developed over fifty Industry Solutions based on flexible, customizable software combinations designed to solve real-world business problems.

Our solutions include Industry Frameworks made up of unique industry products, workflows, data-models, and assets harvested from 1000's of engagements.

IBM solutions for the banking industry

By the numbers
→ How do we transform our financial systems?
Make them smarter.
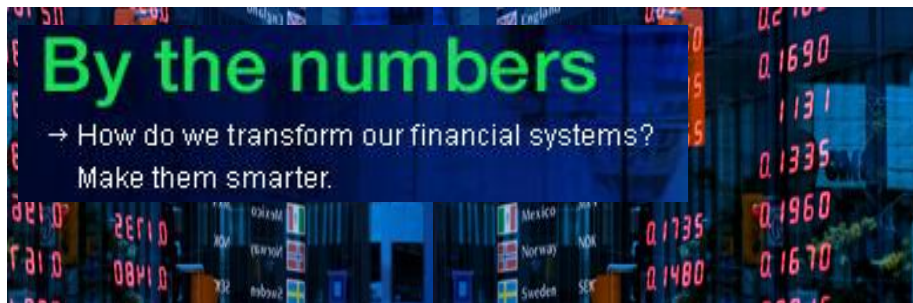
While financial services institutions must address the current economic situation and react to the far-reaching underlying changes to the banking ecosystem, they must also look beyond today's crisis and prepare for tomorrow through innovation and new business models.

Integrated risk management

Create and bundle services that are more targeted, focused, personalized, and modular. An integrated risk management strategy can create the transparency banks are looking for, while helping differentiate their competitive position. This approach makes it easier to understand, control and optimize financial risks and opportunities. It can also help to detect, prevent and remediate operational risks, while enabling regulatory compliance.

Core banking transformation

IBM offers proven solutions for reducing the complexity of core systems transformation through either progressive renovation or by replacing the entire system. We provide industry expertise and banking-specific assets and accelerators to help reduce project risk and accelerate time to value. The results? A more cost-effective and flexible infrastructure foundation that can enable faster transaction processing and improved integration of business processes.

Payments and securities

The global payments business is changing quickly, driven by market shifts, margin pressure, concentration, disintermediation, risk and fraud. Position your banking business for emerging opportunities with enhanced efficiency, comprehensive risk management and simplified compliance. Our proven, open and flexible offerings can help you successfully navigate the payments market, while freeing up capital and reducing expense..

Customer care and insight

Who are your customers? What are their expectations? Today's customer is hard to win and even harder to keep. As consumers seek products and services that fit their preferences and their mode of interaction, they also expect greater levels of personalization - of both the product and the experience they receive. Deliver consistent, informed services across more channels so customers can manage their banking when and how they want.

IBM Banking Industry Solutions Map

Strategic Drivers

Restore trust by demonstrating true customer insight

Craft products and services that are in clients' best interests

Respond to radically increased regulatory requirements

Achieve radically lower costs, reduce complexity; Accelerate mergers, acquisitions and divestitures

Enable responsible risk management and culture of transparency

Ensure capital adequacy

Industry Solutions

| Integrated Risk Management | Core Banking Transformation | Payments and Securities | Customer Care and Insight |

Solution Offerings

Financial Risk
- Ordered Data
- Risk Insight and Control
- Real time Risk Insight and Control
- Risk Optimization
- Risk modelling and scenario analysis

Financial Crimes

Governance and Compliance

Operational and IT Risk

IT Foundation
- Master Data Mgt
- Infrastructure Simplifi-cation / Scalability
- Development Efficiency and Agility

Process Agility
- Dynamic relationship pricing
- Bundled offerings
- Product Agility
- Core business process flexibility
- Performance Monitoring

App. Modernisation

SEPA Compliance

SwiftNet Modernications

Payments Process Efficiency

Retail Payments

Check & Digital Payments Conversion

Financial Supply Chain Management

Mobile Payments

Customer Information Optimization

Insight Optimization

Marketing Process Optimization

Sales Process Optimization

Service Process Optimization

Compliance Optimization

Multi-channel Transformation

BIF: Banking Industry Framework

Industry Framework

Integrated Risk Management
- BDW / IFW Process and Data Models
- Entity Analytics and Global Name Recognition
- Cognos Blueprints
- Service Management for IRM

Payments and Securities
- Banking Payments Content Pack
- Payment Director
- Information Framework Model for Finance
- Enterprise Payments Pack (EPP)
- WBI for Financial Networks
- WTX Industry Packs
- pureXML Payments Bundles
- Corporate Payments Scenario

Customer Care and Insight
- Data Integration Accelerators
- Performance Blueprints
- Customer Identification Solution
- Common Business Language Services
- Account Opening Scenario
- Multichannel Bank Transformation Toolkit

Core Banking Transformation
- Banking Transformation Workbench
- Banking Solution Accelerators
- Vocabulary, Data/Message Model
- Extensions for MDM Server
- Common Shared Services
- Services Components Building Blocks
- Solution Templates, Design Rules

IBM Software Foundation

Information Management	WebSphere software	Rational. software	Tivoli. software	Lotus. software
Data Warehouse Customer Center, Content Manager Cognos, Filenet Alphablox, BDW Industry Models	Business Services Fabric Business Modeler Business Events Message Broker DataPower CICS Gateway	Industry Models ClearCase ClearQuest Software Architect Developer for z	Federated Identity Manager Security Manager Access Manager	Portal Forms EveryPlace Mobile

IBM solutions for the insurance industry

Making Insurance Smarter
Build long-term customer relationships by focusing on what's really important to policy holders

IBM helps Insurance companies drive profitable growth, balance cost with agility, improve underwriting results, and tailor products and services to meet policyholder needs. Our deep industry experience in integrating hardware, software, and services help clients holistically bridge their business and IT strategies.

Core insurance: IBM supports solutions for dynamic business processes, and integration and automation and scalability of core processes such as underwriting, claims, policy administration and billing.

In addition, Insurers can automate the processing of inbound documents and service requests, to provide end to end processing of documents and service requests – thus eliminating delays due to physical limitations.

Also with IBM's straight through processing solution insurers may attract new agents, many of whom are increasingly placing "ease of doing business" as a top selection criterion.

Furthermore, policy administration can be enhanced to improve the customer experience while creating cost savings from fewer interactions with customer service representatives and agents.

Customer intelligence and service: IBM can help Insurers improve efficiency and effectiveness across all their channels and create a single, virtual seamless channel-spanning process for consumers and agents

Distribution: IBM can help simplify back-office processes that support relationships with producers, and so enable marketing resources to better align with distribution strategy, and overall business objectives.

Product management:. To keep pace with the competition, it is essential to innovate and to develop and release new financial products quickly. IBM solutions can help model and analyze insurance products in a structured way.

Business administration and infrastructure: IBM supports solutions for simplification of the IT infrastructure, increased responsiveness, and greater scalability and security. Legacy Modernization can reengineer or replace old systems. In addition IBM's approach to Business Driven development (BDD) can bring together the needs of different lines of businesses, channels and departments resulting in reduced redundancy in core systems, and elimination of overlapping, non-integrated data.

IBM Insurance Industry Solutions Map

Strategic Drivers

Leverage information and technology to capture market share.

Shift to increased transparency & risk control while managing increased complexities.

Innovate and simplify the business model .. For competitive advantage.

Transform core and IT processes with high level of automation … to create sustainable cost savings.

Industry Solutions

Core Insurance

Customer Intelligence and Service

Distribution

Product Management

Business Admin & Infrastructure

Solution Offerings

Insurance Operations of the Future (IOF) Solution

STP Underwriting Life & Annuity New Business Solution

Policy Administration Solution

IBM China Lab Policy Management

Claims Management Solution

ACORD Solutions

SEEC SOA Components BP

Innovation Group Policy Admin BP

FINEOS Claims and Payments BP

SSP Core Business Serv Components BP

Silvermoon Policy Admin. BP

CSC Policy and Claims BP

FIS ALIS Policy Administration BP

Profit SW SOA Components BP

IDIT Software Suite BP

Customer I & S

Customer Data Integ Consolidated View

Kana Single View BP

PBBI Address Verification BP

Earnix Price Optimization BP

Distribution

Insurance Self Service Solution

Collaboration for End-user

Thunderhead Multi-Channel Comm BP

Silanis eSignatures BP

Product Management

Product Management using IAA

Camilion Product Management BP

FJA Product Management BP

Business Admin & Infrastructure

Legacy Modernization

Business-Driven Development

Industry Framework

IPAF: Insurance Product Acceleration Framework

- Mapping and integration of IAA models with WebSphere Modeler and Rational Software Architect
- Accelerators for building services via the P&C Industry content pack
- Standards-compliant ACORD eForms
- WS Transformation Extender ACCORD pack

BIF: Banking Industry Framework (Customer Care and Insight elements)

Mapping and integration of InfoSphere MDM Server to IFW models

Cognos risk adjusted profitability blueprint

Extension of logical BDW models (physical to customer)

IBM Software Foundation

Information Management	WebSphere software	Rational. software	Tivoli. software	Lotus. software
Product Center	Process Server	Rational Software Architect	Netcool	Portal
Content Manager	Variety of Integration Products	Rational Application Developer	Identity, Access, Security Mgr	Mobile Connect
MDM Server				Forms
DataStage	ILOG business rules	Veriety of Architecture and Testing tools	Variety of IT services management tools	Expeditor
Optim	Business Modeler			SameTime
Cognos				Connections
SPSS				Quickr

IBM

IBM solutions for the financial markets industry

Understand the risks
Create value through effective risk assumptions and mitigation

If the financial markets industry is to deliver sustainable returns, it will have to embrace change. It will need to begin by working with regulators to build a financial system that is stable while still allowing for healthy innovation. Individual firms will also have to specialize and learn to fulfill their brand promises.

IBM has the expertise and tools to help financial market organisations build a platform to create value through effective risk assumption and mitigation.

Trade process transformation

In order to remain competitive in today's marketplace, your organization must speed up transaction handling while reducing costs and operational errors. Streamlining your operations and aspiring to new levels of straight-through processing (STP), continues to be a key business imperative across all financial market participants. But evolving instruments, globalization and increased regulations require increasingly sophisticated electronic post-trade processes and an infrastructure that nimbly addresses fluctuating business demands.

IBM has the assets, skills and proven track record that can help financial institutions become faster and more efficient throughout their trade lifecycle. From business process management to Six Sigma supply chains we offer solutions that help you optimize every aspect of trade processing.
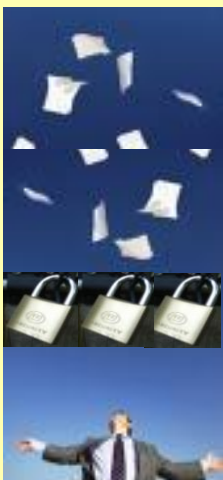
Risk and compliance

Generate value while meeting ever-changing regulatory needs

Accurate, consistent and transparent risk information across business units prevents unexpected losses, the need for higher capital requirements and civil or criminal penalties. Integrated risk management (IRM) enables proactive and holistic identification and management of emerging risks

IBM can help reduce the cost and complexity of your current risk and compliance infrastructure. IBM can help you develop a view of how data will be gathered, enhanced, stored, calculated and reported in a controlled and standardized manner across business lines. Our solutions can help you sense and respond to changes and threats intuitively, moving your business from reactive mode to proactive value creation. .

IBM Financial Markets Industry Solutions Map

Strategic Drivers

Rebalance financial stability with healthy financial innovation

Modernize & standardize legacy systems for cost containment & increased efficiency

Profit from risk by increasing integration, timeliness and analysis of risk information

Balance increased efficiency and volume around flow products with selective focus around exotic and structured products

Respond to radically increased regulatory requirements

Industry Solutions

Trade Process Transformation

Risk and Compliance

Other Business Solutions

Solution Offerings

Trade & Order Management

Transaction & Exception Mgmt

Front Office Insight

Payments

Exchange Transformation

Financial Markets

Data Mgmt

Post Execution Processing

Wealth Management

Financial Risk

Financial Crimes

Operations & IT Risk

Governance & Compliance

Strategy and Transformation
- Workforce & Talent Solutions
- Finance Transformation
- Finance Process and Technology Integration
- Risk & Compliance
- Business Strategy
- Technology Strategy

Business Analytics Optimisation
- Customer Analytics: COBRA
- Financial Analytics

Industry Framework

BIF: Banking Industry Framework: (Integrated Risk Management Domain)
- BDW / IFW Process and Data Models
- Entity Analytics and Global Name Recognition
- Cognos Blueprints
- Service Management for IRM

Information Management	WebSphere software	Rational software	Tivoli software	Lotus software
BDW / IFW Models	Business Events	ClearCase	Identity Manager	Portal
Information Server	Process Server	ClearQuest	Security Manager	Workplace Forms
DataStage	Message Broker/MQ	Software Architect	Access Manager	
Data Warehouse	Low Latency Messaging			
Cognos Family	Front Office for FM			
	Business Modeler			
	ILOG Business Rules			

IBM Software Foundation

IBM solutions for the telecommunications industry

Telecom service providers that are strong collaborators can outperform their competitors by generating innovative services that build loyalty among high-value customers.

Communication isn't just about people talking to people. It's about things talking to each other.

On a smarter planet, almost anything can become digitally aware, instrumented and interconnected. We have the connections, processors, analytics and capabilities powerful enough for trillions of devices to talk to each other and improve the way the world works.

Service delivery

Speed delivery of innovative new services

Create and bundle services that are more targeted, focused, personalized, and modular. Support new models across both legacy and next generation networks, and evolve your SDP to better address Web 2.0 and a broader system of partners for third-party content.
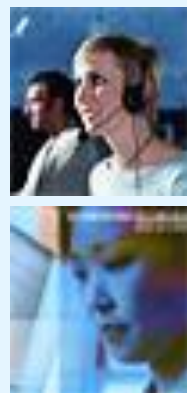
OSS and BSS transformation

Integrate back-office systems and processes

Streamline processes, capture customer information and transform it into business intelligence, get new services to market faster, and secure a method for storing, accessing and using large amounts of data strategically

Leverage network convergence to improve service delivery

IBM solutions can help you move forward to an IP network infrastructure while leveraging the assets you already have. Secure your network infrastructure while simplifying customer, partner and supplier interactions.
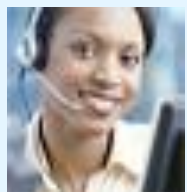
Analytics and autonomics
Utilize customer insight to improve loyalty and retention

Customer intelligence solutions integrated with sales, marketing and customer service, can deliver improved customer satisfaction and retention generating increased service provider revenue & profitability. .

IBM Telecommunication Industry Solutions Map

Strategic Drivers

Cost reduction and take-out, with increased business agility, process responsiveness, automation, and IT efficiency

Customer experience management - align value to channels and opportunity; reduce churn reduction, 360-degree customer view

Service Enablement to generate, re-develop, & retire services in real time

Industry Solutions

Service Delivery Platform	OSS Transformation	BSS Transformation	Analytics and Autonomics

Solution Offerings

Service Innovation and Creation	**Service Management (Service Assurance)**	**Dynamic Process Integration**	**Information Analysis**
▪ Ideation & Refinement of new services ▪ Service Creation	▪ Fault and Performance Management	▪ Order Mgt, Fulfilment & Integration of Service into Billing	▪ Customer Analysis
Service Execution and Exposure	▪ Service Quality Management	**Information Management**	▪ Churn and Loyalty Management
▪ Execution Environment for Converged Services	▪ Asset and Service Request Management	▪ IM Infrastructure ▪ Master Data Mgt - Customer, Product and Network:	▪ Campaign Management Optimization
▪ Real-time Information: Presence & XML Documents	▪ Storage and Content Management	▪ Data Warehouse and Archiving	▪ Fraud Identification and Prevention
▪ Service Enablers and Exposure	▪ Security Management ▪ Intelligent Cell Tower Operations	▪ Information Lifecycle ▪ Data Privacy	▪ Network Capacity Planning
▪ Web Applications / Mashups	▪ Network Management for LTE	**Customer Interaction**	
	Security Solutions	▪ Self Service Multi-channel Portal	
		▪ Multi-channel Commerce	
		▪ 3rd Party On-Boarding	
		▪ App Ecosystem	
		▪ Customer Experience	

Industry Framework

SPDE: Service Provider Development Environment

- Service Execution (SIP Server, IMS Connector, Presence Server, XDMS Server, Telecom Web Services Server, WESB Media Extensions)
- Service Integration (WBSF Telecom Operations Content Pack, eTOM Process Models)
- Solution Assets (Idea Factory, Telecom Widgets (Location, Messaging, etc), NGOSS Contracts, Web Service Interfaces, Triple Play Provisioning, Unified Service Creation, Telecom Web 2.0 / Mashups, Telco Data Warehouse)
- IMS extensions for Rational Developer, SIP extensions for Rational Tester
- Service Endpoint Definitions for ISVs (Oracle, Amdocs, Comverse, and others)
- IBM Telecom Data Warehouse, Data Models, and IM Assets- Snazzy, Tabi, Tailor

----

IBM Software Foundation

Information Management	WebSphere software	Rational software	Tivoli software	Lotus software
Analytics, Cognos	Telecomm-unications Server	Method Composer	Maximo EAM	Portal
Customer Profiling	Business Server	Unified Process for IMS	Netcool	WEMP
Master Data Management	Fabric,	ClearCase	Security Manager	Connections
Product Center	Process Server	ClearQuest	Access Manager	Mashup Maker
Customer Center	DataPower		Identity Manager	Expeditor

IBM solutions for government

Globalization, ecological issues, technological impact and other modern challenges are driving the need for streamlined government collaboration. Connect to protect and serve your citizens

Public safety and security: Enable collaboration to improve public safety.

improve crisis management. Extract intelligence through machine translation and advanced text analysis. Identify high risk passengers and cargos. Solve crimes quickly using a single, integrated and accurate source of crime information data. Locate personnel and equipment. IBM can help you achieve these outcomes.

Tax and revenue management: Leverage business intelligence to improve insight and elevate performance..

Work with IBM to proactively prevent fraud and other regulatory violations. Improve taxpayer compliance; enhance services effectiveness; integrate tax service providers. Simplify administrative procedures and automate functions to increase productivity

Social services and social security: Optimize citizen-centered experiences. Connect people to programs based on their needs

Gain visibility to integrated citizen information across the social services agency and beyond to improve service scope and quality. Provide the right service to the right individual at the right time. Expand service across all communication channels, including telephone, email, face-to-face, and the Web. Detect and prevent fraudulent activities.

Metropolitan transportation and roads: Cities around the world face common transport challenges – from increasing congestion, safety concerns and aging infrastructure to a lack of funding and increasing environmental impacts. "Smart solutions" are being used to address these challenges, and evolve transport systems from single modes to integrated operations, and so improving transport services and providing improved value to customers

Integrated Urban Infrastructure: Create sustainable cities with effective management of resources and carbon footprint.

Gain visibility to city operations and coordinate operations across departments and agencies. Improve local and regional efficiencies. Address environmental issues Create infrastructure to manage population and growth pressures

IBM Government Solutions Map

Strategic Drivers

> **Economic Prosperity via an efficient and smarter government taking responsibility through actions**
>
> **Smarter Cities**
>
> **Public safety, prevention corrections & emergency mgt**
>
> **Environmental Wellness and Dealing with Global Warming**

Industry Solutions

> **Social Services & Social Security**
>
> **Safety and Security**　　**Tax and Revenue Management**
>
> **Metropolitan Transport & Roads**
>
> **Integrated Urban Infrastructure**

Solution Offerings

Virtual Operations Center **Integrated Intelligence Solution** **Advanced Passenger Analysis** **Crime Information Warehouse** **Smart Surveillance System** **Government Trusted Identity System** **Location Awareness Solution** **Maximo for Port Administration** **RadioConnect**	**Customs Risk Management Solutions** **Excise management and Control System** **Customs Automated Processing System** **Declaration Management System** **Single View of Tax Payer** **Tax Audit & Compliance** **Case Management Solutions Intelligent Forms Processing** **Cognos Treasury Business Intelligence** **eGovernance**	**Single View of the Citizen** **Case Management** **Citizen Services Portal and Intelligent Forms** **Maximo for Government** **Road User Charging** **Integrated Fare Management** **Transportation Information Management** **Integrated Urban Infrastructure Command Center** **Green Cert - Carbon Management** **Smart Grid** **Smart Water** **Intelligent Buildings**

Industry Framework

GIF: Government Industry Framework

- Social Services/Security Assets - Trusted Identity – (Enrolment, Eligibility, Biometric Mgt), Social Industry Model, Social Data Model, Government Industry Toolbox
- Tax-Customs Assets - Tax Audit & Compliance, xBRL, Tax Data Model, Single View of Citizen Reference, SVOC POT, MDM/EAS adapter
- Intelligent Transport Assets - Info Architecture, Vehicle Identification, Rating Engine, Date Gateway, Business Process Models, Data Model, Roadside Equipment Interfaces, Performance Blueprints, Rational Architectur
- Smart City Assets - Carbon Trade-off Analyzer, Red Guide, RSM Green Sigma, Real-time Situational Awareness, Risk Estimation Toolkit, Command Center Architecture, CAP Connector
- Public Safety and Security Assets - Data Models (Information Exchange (NIEM), Public Safety and Justice Data, Cargo Industry, Registered Traveller), Process Models (Registered Traveler, Advanced Passenger Analysis)

IBM Software Foundation

| Information Management	WebSphere software	Rational. software	Tivoli. software	Lotus. software
DB2 Enterprise Server Edition Product Center Content Manager Information Integrator DataStage	Process Server Integration Developer WRS (includes ESB & DB2) ESB – CEP Feature Pack	Rational Software Architect Rational Application Developer	Federated Identity Manager Access Manager Business Service Management ITCAM for SOA Privacy Manager Maximo	Web 2.0 Portal Server Everyplace Access

IBM solutions for defence
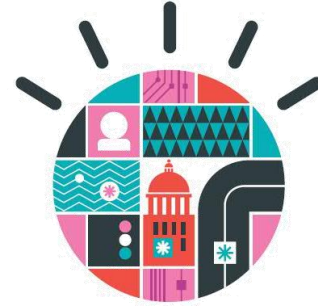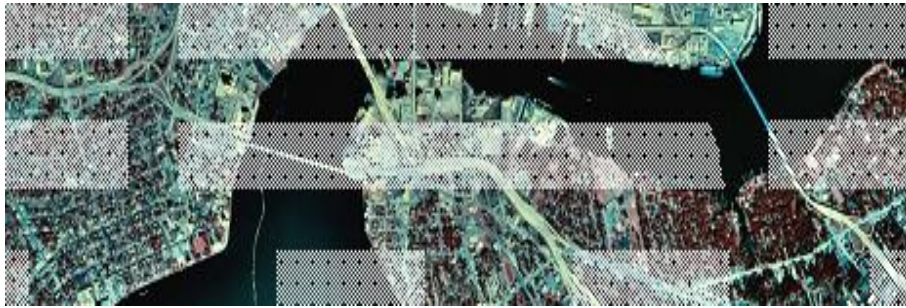
Defence organizations need to solve their most challenging business issues - achieving operational effectiveness, agility and speed of command in a complex, coalition environment.
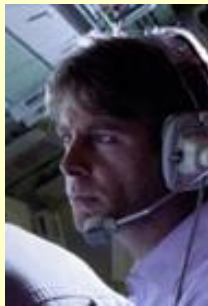
Network centric operations

### Information awareness. Decision superiority.

Ministries of defence face increasing uncertainty and dynamic changes. Geographically dispersed conflict. Asymmetrical threats. Political pressures. Complex lines of communication internally and with allies. IBM can help agencies increase combat power through network-centric operations. By connecting administrative systems, sensors, weapon systems, decision makers and troops, IBM can help clients achieve shared awareness, increased speed of command and improved success in the field.

Military intelligence

Transform data into intelligence

Defence organizations need to transform data into knowledge and actionable Intelligence They need to maintain a single version of the truth on persons of interest and personnel, and uncover non-obvious relationships to help in detecting fraud or non-obvious threats to military operations.
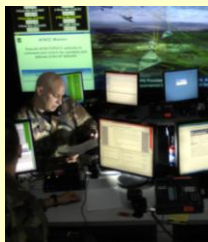
Command and control and tactical messaging

Improve collaboration across teams, departments & organizations

Defence organisations has a need to improve crisis management and planning across departments in stove-piped systems. They need to bridge multiple teams, departments and organizations, Achieve decision superiority with key information, and Synchronize resources and activities across the battle space

Logistics

Share information to facilitate logistics operations

There is a need to provides for a common platform across logistic systems in an enterprise, to share information and so facilitate a common operational picture. This lowers risk and therefore cost of implementation

IBM Defence Solutions Map

Strategic Drivers

Flat or declining near-term military budgets – focus and spend on information management & net-centric capabilities

Business process transformation increasingly seen as part of critical roadmap for operations optimization

Need to enable coalition operations, creating interoperability within and between country militaries

Struggle to overcome inflexibility of systems that rely on stove-piped, custom-built applications

- -

Applying the concept of operations known as Network-centric Operations

Industry Solutions

Military Intelligence	Command and Control And Tactical Messaging	Logistics

Solution Offerings

Integrated Intelligence Son.
- Data Transformation
- Scan Cue and Focus
- Advanced Text Analysis
- Machine Translation
- Cross-lingual IRetrieval
- Timely Alert Notifications
- Investigative Analysis Services

Single View
- Trusted Information
- Audit Compliance
- Data Mining

Virtual OPS Center
- Planning and Preparedness
- Incident and Disaster Management
- Directory Search and Collaboration
- Situational Awareness & GIS
- Messaging and Data Sharing

Decision Superiority Solution for Defence

Core Collaboration Enterprise Services

RadioConnect

Triton SOAF
- logistics enterprise common platform
- Information sharing
- Common operational picture
- Pre-integrated pre-tested environment

Industry Framework

NCO: Network Centric Operations Framework
- Tactical Messaging Interoperability Hub / Distributed Information Services Hub
- Core Collaboration Enterprise Services / Virtual Operations Center
- Extensions for: High Availability, Resilient Design Considerations, Assured Information Sharing. Federation of Multi Vendor SOA Environments, Use Case for Multi National SOA Environment, Security Hardening Procedures
- NATO NC3TA Mapping
- Joint Fires & Targeting Process Model
- Tactical Data Link Multilink Engine Schema
- Tactical HMI for Handhelds
- SOA Foundation Delivery Guides
- Data Mappings - TDLXML (Tactical Data Link XML), Common Message Format (Ultra), Universal Shipborne Automatic Identification System (NMEA AIS), USAF/MITRE Tactical Messaging Format

Information Management	WebSphere software	Rational. software	Tivoli. software	Lotus. software

IBM Software Foundation

Information Management	WebSphere	Rational	Tivoli	Lotus
Infosphere MDM Server Filenet and ECM Cognos Analytics Name Recognition	Process Server Integration Developer Message Broker MQ Integration DataPower	Rational Software Architect Rational Application Developer	ITCAM for SOA Netcool Monitoring Directory Server Access Manager Composite Application Mgr	Portal Server Sametime Workplace Forms

IBM solutions for the energy and utilities industry

Smarter Utilities
Network visibility and control
Process automation
Business collaboration

Energy and Utility Companies are being pressured to seek new approaches and business models by converging market forces. These forces are increasing the need for greater network reliability, efficiency, flexibility and "observability".

Asset, device and service monitoring

Collect device data and event messages from the utility network and intelligently route them for action, analysis and/or storage. Visualize infrastructure availability and performance through device, event and usage data, providing real-time control and analysis to speed time to resolution

Intelligent utility network

Informed Decision Making: Use data and information aggregated from business and operation systems to analyse events, develop insights, correlate reactions to change, to improve business flexibility and performance.

Business Process Automation: Model, manage, and optimize business processes resulting in faster time to market, increased customer satisfaction, and higher productivity.

Security: Comprehensively manage and prevent security risk across the business

Power generation, transmission and distribution

Regulatory, Risk & Compliance Management: Manage large quantities of utility documents and processes to comply with government mandated regulations

Asset Lifecycle Management: Track, document and make decisions about the procurement, deployment, operation, maintenance, and disposal of generation plant, transmission or distribution field assets.

Customer operations transformation

Improved Customer Experience: Deliver convenient, personalized customer experience, by enabling interactive communication and providing consumers more control of their of their energy sources and usage.

IBM Energy and Utilities Industry Solutions Map

Strategic Drivers

| Transform electric grid and gas & water infrastructures from rigid one way systems to a dynamic, automated and reliable network | Incorporate renewable energy, electric vehicles and meet stringent greenhouse gas emissions targets while maintaining reliable, cost-effective power supply | Empower consumers to manage their energy usage by providing them with near real-time, detailed usage information |

Industry Solutions

| Network and Device Domain | Intelligent Utility Network | Power Generation, Transmission and Distribution | Customer Operations Transformation |

Solution Offerings

| **Asset, Device and Service Monitoring**
▪ Service/Device management of AMI infrastructure
▪ Service Management of Grid Infrastructure
▪ Service Management of utility application environment
▪ Real Time visualization of Grid/Unit status | **Informed Decision Making**
▪ Workforce planning and Performance Management
▪ Grid analytics
▪ Predictive Maintenance
Business Process Automation
▪ Automate Meter to Cash Processes
▪ Integrate Renewables
Grid Security | **Regulatory, Risk and Compliance**
▪ Manage Regulatory Compliance
▪ Health, Safety & Environmental
▪ Emissions Management
▪ Rate Recovery
▪ Financial & Trading Risk Analysis
Asset and Lifecycle Management
▪ Work and Asset Management
▪ Document Management for Assets
▪ Automation of Field Service Processes | **Improved Customer Experience**
▪ Consumer Energy Management
▪ Portal to Technology
▪ Support Home Area Networks |

Industry Framework

SAFE: Solution Architecture for Energy and Utilities
- Software Configurations in support of the 7 capabilities
  - Asset, Device and Service Monitoring, Asset Lifecycle Management, Informed Decision Making, Improved Customer Experience, Business Process Automation, Regulatory, Risk and Compliance Management, and Security Solutions
- Data and Process Integration
- Maximo for Utilities for Enterprise Asset Management
- ECM/FileNet for asset operations and regulatory compliance solutions
- Maximo and FileNet Integration Adapter
- Gognos Analytics, WebSphere ortal Solution accelerators for E&U

IBM Software Foundation

Information Management	**WebSphere** software	**Rational** software	**Tivoli** software	**Lotus** software
CognosNow! FileNet Information Management Portfolio MDMServer OminFind DataWarehouse Quality Stage	DataPower ILOG Business Rules ILOG Supply Chain Business Events Modeler Process Server ESB/Message Broker	Software Architect System Architect	Netcool Maximo Asset Management Compliance Insight Manager Security Portfolio	Portal Connections Expeditor Mobile Connect

IBM solutions for the healthcare provider industry

Healthcare
Deploy smarter solutions for your organization. Advance excellence in quality, safety and operations

To build a smarter system, healthcare solutions need to be instrumented, interconnected and intelligent. The world's healthcare solutions need to change. Using tools like electronic medical records, wireless computing devices and health support networks, healthcare can be smarter.

Physicians need to spend more time with patients, not paperwork or looking up files. Information can be made accessible where and when it is needed.

Clinical business transformation

Creating the conditions necessary to help healthcare enterprises operate at optimum capability.

Use comprehensive and accurate information to support decision-making. Share data to eliminate redundancy. Locate equipment and patients and prevent theft of expensive materials. Remove patient service bottlenecks.

Clinical business integration

Business Intelligence:

Enabling clinicians and practitioners to put patient records and, therefore, care at the heart of everything they do

Doctors and patients are increasingly demanding greater access to information as they attempt manage care in real time. IBM's solutions can help provide consistent "content" no matter what the backend clinical system

Health Analytics:

IBM Data modelling and navigation fosters advanced analytical and drill-down capabilities. Formulate and run searches of databases without programming knowledge. Now, rather than searching through individual patient records to find effective treatments or the disease correlations, physicians and researchers can easily tap into the wealth of data by looking across patient populations

Healthcare interoperability

Facilitate improved Interoperability between systems.

Reduce costs incurred by duplicate tests. Reduce medical errors due to incomplete records. Improve patient outcome through more timely and accurate patient data such as allergies or drugs currently taken. Exchange data among providers, insurers and other stakeholders

IBM Healthcare Provider Industry Solutions Map

Strategic Drivers

Transform Core Clinical and Business Processes through Integrated Systems

Provide New work Flows and Information Views of Clinic and Processes

Empower individuals and their care teams with information & advice

Need to Integrate, Aggregate and Analyse Data at the Enterprise Level

Support Transformation Focus with IT Simplification and Consolidation

Allow public health professionals to rapidly disseminate and share information quickly about critical events and emergencies

Industry Solutions

Clinical Business Transformation

Clinical Business Integration

Healthcare Interoperability

Solution Offerings

Enterprise Health Analytics
Real Time Location Services
Device Integration to EMR Platform
Service Management for Hospitals

HIPAA Compliant Clinical User Access
- protecting EMRs and PHI

Enterprise Portals
- Consumer portal
- Patient portal
- Clinical and Physician portal
- Administration Portal

ESB for HL-7
- Transaction Integration Engine
- Common Information Model
- Interfaces to clinical and financial systems

Health Information Exchange,
- Can be organisational, regional, or national
- Can cover a community of interst such as Medical Homes

HIE - EMR and EHR Integration
- Hosted HIE services for interoperability between clinical information systems and EMRs

Industry Framework

HIF: Health Integration Framework
- Common Information Model, Adapters
- WebSphere Healthcare Industry Packs (HL7, NCPDP, HIPAA EDI)
- Provider Portlets, Lotus Healthcare Accelerator
- SCORE Policy Administration Architecture
- IBM IHE assets for interoperability – XDS registry and repository
- ATNA audit repository, document source adapter
- HL7 Enterprise Services Bus Content Pack
- Carefx Fusion Desktop, Web, Clinical Adapters and Portlets
- Clinical System Provisioning Adapters, 123E & Encode Assets
- IBM Tivoli Identity and Access Assurance for Healthcare
- InfoSphere Clinical Analytics, Clinical Data Warehouse

IBM Software Foundation

Information Management	WebSphere software	Rational software	Tivoli software	Lotus software
IAnalytics	Sensor Events	Application Development Tools Portfolio	ITCAM	Portal Server
Balanced Warehouse	Monitor and Device Integration	Data Architect	Business Server Manager	Portlet Factory
Cognos	Message Broker / MQ	Software Architect	Asset Manager	Active Insight
DataStage, Data Analyzer	Metadata Server		Identity and Access Assurance for Healthcare	Forms
Filenet	WTX			EveryPlace Access
Content Manager				Healthcare Accelerator

IBM solutions for the retail industry

Making Retail Smarter
Shop whenever, wherever, and however

The key to successful retailing is to cultivate consumer advocates. By providing a superior shopping experience, you can boost advocacy and improve your bottom line.

Turn your customers into advocates. IBM customer-centric solutions can help you deliver superior shopping experiences, while driving operational excellence throughout your retail organization

Deliver a smarter shopping experience

A superior shopping experience that personalizes the shopper interaction, enables a shopper to engage on their own terms and creates excitement and motivation for that shopper.

Retailers delivering a smarter shopping experience are:

- Enabling customers to shop seamlessly and easily across touch points and brands
- Making sure customer interactions are timely and relevant
- Helping customers to shape brand experiences in ways that reflect their interests and lifestyles
- Always delivering on a brand promise to continuously meet customers' expectations.

Develop smarter merchandising and supply chains

Retailers are focused on creating an efficient supply chains that allow them to deliver localized, relevant assortments, tailored offerings and optimized inventory investments
With smarter merchandising and supply chains, retailers and their suppliers:

- Are reducing order lead times from days to hours.
- Know exactly where their merchandise is as it moves from the manufacturer to the customer.
- Manufacture the right number of a trendy item to fulfill real-time customer demand.
- Dynamically allocate inventory based on real-time customer demand and inventory c constraints.

Build smarter operations

Retailers drive operational excellence through cost efficient management of people, processes and technology, while tightly managing performance and maintaining the ability to rapidly modify processes and infrastructure to capture opportunities.

Smart operations is about:

- Understanding sales trends in real time and adjusting inventory and promotions accordingly
- Reducing overall operating costs while deploying new customer services more quickly.
- Quickly consolidating new acquisitions into an existing brand as well as existing processes and systems.

IBM Retail Industry Solutions Map

Strategic Drivers

Deliver a Smarter Shopping Experience	Demand Driven Merchandising & Supply Chains	Drive Operational Excellence

Industry Solutions

Store and Channels	Supply Chain	IT Systems and Operations	Business & Finance Administration
Marketing & Customer Management		Merchandising & Product Management	

Solution Offerings

Store and Channels	Supply Chain	Merchandise / IT Systems	Business & Finance
Store and Channels Performance	Supply Chain Performance	Retail Data Warehouse	Financial Performance
Retail Store Integration	Supply Chain Optimization	Security & Compliance Management	Financial Analytics
POS and Self Service	Vendor Management	Merchandise Performance	Planning, Budgeting and Forecasting
Product Tracking	Trade Fund Management	Product Information Management	Financial Consolidation
Loss Prevention		New Product Introduction	Human Capital Management
Store Planning	Customer Insight	Merchandise Planning	Enterprise Asset Management
Multi-channel eCommerce	Single View of Customer	Market Basket Analysis	Energy Performance
Cross Channel Integration	Social Retailing	Promotion Planning & Execution	
PIM for eCommerce			

RIF: Retail Industry Framework

Store and Channels
- RTI Services Model
- TLOG Trickle Poll
- POS patterns
- POSBC/SI for 4690 (RSS)
- RIFD Project Assets
- GTS Surveillance, S3 Smart Surveillance
- Store Operations P&L Blueprint
- Store Dev. Planning Blueprint
- Channel Process &Services Model
- BODL loader
- RAPID for WS Commerce
- PIM for eCommerce tools

Marketing & Customer Mgt
- CDI Data and Services Model
- sMash adapter Pluck & Bazaarvoice

Merchandise, Product Mgt, Supply Chain
- MDM for PIM data model
- PI for PIM starter assets
- SAP MDM4PIM Integration
- Manhattan WMoS Accelerator

- NPI BPM Assets (BPEL flows, KPIs)
- Oracle Retail Accelerator
- Tradestone Accelerator
- BluePrints for Financial Merchandise Planning, Assortment Management, Promotions Planning, SCOR Metrics, Trade Promotions
- Data mining capabilities
- Retail Promotions Portal

Business & Finance
- Cognos Financial Performance
- Blueprints for Capital Planning, Strategic Planning, Expense Planning & Control, Initiative Planning, Group Consolidation & Corporate Reporting
- Maximo Integration Assets
- Cognos 8 Workforce Performance
- Connectors to SAP, Oracle &PeopleSoft

IT Systems & Operations
- Retail Data Warehouse Model
- PCI Enterprise Security Model
- PCI Reference Architecture

Industry Framework

IBM Software

Information Management	WebSphere software	Rational. software	Tivoli. software	Lotus software
Cognos	Business Monitor	Application Developer	Maximo	Portal
InfoSphere	ESB, MsgBroker	Software Architect	OMNIbus	Expeditor
MDM family	Process Server	Requisite Pro	Monitoring	Forms
FileNet	ILOG		Provisioning	Sametime
SPSS C&DS Modeler	eCommerce		Identity, Access & Security products	Connections
Traceability	Remote Server			
	Sensor Events			

IBM solutions for the automotive industry

Speed past the competition
*Manage change. Integrate globally.
Accelerate growth.*

Faced with unprecedented challenges in the current global economic environment, automotive leaders are cutting costs by improving efficiencies in product development, supply chain management, manufacturing and dealer collaboration. They are also making strategic investments for the future in new vehicle technologies and growth markets.

Product development

Portfolio, Product and Requirements Management : Understand market dynamics and needs. Identify portfolio coverage for existing and growth markets. Collect customer needs and product requirements, making them visible throughout the complete product lifecycle. Reduce scope creep and cycle time.

Software and Systems Engineering: Model overall systems requirements earlier in the development cycle. Reduce development cycle time and cost for development with optimized and integrated system design. Support traceability from requirements to systems and product artefacts, enabling reuse within systems. Automate documentation generation to satisfy regulatory requirements.

Design chain management

Enterprise Business Process Management: Optimize processes across the development cycle. Automate milestone event processes such as engineering change notification, design data sharing. Increase process capability to deliver differentiated innovative products. Continuously optimize product quality based on design criteria

Communication and Collaboration: Communicate effectively within and across teams. Collaborate early across the value chain, reaching common project objectives but protecting intellectual property. Speed decision making with multi-organizational buy in.

Product asset management

Product Information and Reuse: Find desired product-related information with correct status, regardless of originating system. Enable high performance, reliable and secure data management across multiple design partners. Preserve product information to optimize downstream processes, and meet regulatory requirements.

Product and IT Asset Management: Provide an integrated approach to service management to deliver smarter products and quality services. Achieve fast and reliable IT services needed across the product lifecycle. Incorporate service requirements and warranty/quality feedback into product requirements process

IBM Automotive Industry Solutions Map

Strategic Drivers

Globalization

Rapid Growth of Product Variations

Increased in-vehicle technology

Future Workforce Requirements

Government Influences

"Green" Influences

Convergence with Multi-industry Eco-systems

Industry Solutions

Product Development

Design Chain Management

Product Asset Management

Solution Offerings

Portfolio, Product and Requirements Management
- Product and Portfolio Management
- Requirements Engineering

Software and Systems Engineering
- Software Delivery for Systems
- Model Drive Systems Development
- Integrated Product Change Management

Process Improvement
- Enterprise Engineering Change BPM
- Mechanical

Design Communication and Collaboration
- New Product Introduction with Release to Manufacturing
- Mechanical Simulation and Analysis BPM
- Collaborative Engineering

Product Information and Reuse
- Product Information Management
- Long Term Data Preservation
- Business Intelligence

Product and IT Asset Management
- Enterprise Asset Management
- IT Asset Management

Industry Frameworks

PDIF : Product Development Integration Framework
- PLM semantic model for data exchange based on industry standards
- Industry specific Model Driven Systems Engineering (MDSE) methods and processes
- Connectors to support integration for SAP, PROSTEP, MSC and other applications
- Industry Content Pack for PDM Integration, ERP Synchronization, Simulation Management, Engineering Change Management, Supplier Collaboration, and Mechatronics

IIF : Integrated Information Framework
- Reference Semantic Model (RSM) based on industry standards
- IIF Workbench, Alarms & Event Management, Federated/Distributed online model
- Embedded complex event processing and notification including KPIs
- Connectivity for Maximo to SAP-PM
- Well Test, Manifold Exchange, Rotating Equipment Monitoring
- UML) for contextual relationships between the field, well and process equipment.
- Production Process Workbench, Event Action Manager
- Templates for Asset Management, WIP Tracking and Data Collection, Order Management/Line Sequencing

IBM Software Foundation

Information Management	WebSphere software	Rational software	Tivoli software	Lotus software
Information Server Family	Process Server	Telelogic Rhapsody	Maximo Asset Management	Web 2.0
DataStage	ILOG rules	ReqPro & Doors	Netcool Omnibus	Portal Server
Integration Server	Sensor Events	Rational Software Architect	Access Manager	Lotus Expeditor
Cognos analytics	ESB	Rational Application Developer	Business System Manager	Workplace Forms
Product Center	Customer Center			Mobile Suite of Products
	Business Monitor			
	Portal Extend			

IBM solutions for the electronics industry

In the dynamic, global electronics marketplace, companies with innovative approaches to product development and operations are finding success. Leaders are globalizing brands and operations, and developing truly differentiated offerings that advance end users' lives. All while striving to achieve sustainable growth.

Product development

Portfolio, Product and Requirements Management : Understand market dynamics and needs. Identify portfolio coverage for existing and growth markets. Collect customer needs and product requirements, making them visible throughout the complete product lifecycle. Reduce scope creep and cycle time.

Software and Systems Engineering: Model overall systems requirements earlier in the development cycle. Reduce development cycle time and cost for development with optimized and integrated system design. Support traceability from requirements to systems and product artefacts, enabling reuse within systems. Automate documentation generation to satisfy regulatory requirements.

Design chain management

Enterprise Business Process Management: Optimize processes across the development cycle. Automate milestone event processes such as engineering change notification, design data sharing. Increase process capability to deliver differentiated innovative products. Continuously optimize product quality based on design criteria

Communication and Collaboration: Communicate effectively within and across teams. Collaborate early across the value chain, reaching common project objectives but protecting intellectual property. Speed decision making with multi-organizational buy in.

Product asset management

Product Information and Reuse: Find desired product-related information with correct status, regardless of originating system. Enable high performance, reliable and secure data management across multiple design partners. Preserve product information to optimize downstream processes, and meet regulatory requirements.

Product and IT Asset Management: Provide an integrated approach to service management to deliver smarter products and quality services. Achieve fast and reliable IT services needed across the product lifecycle. Incorporate service requirements and warranty/quality feedback into product requirements process

IBM Electronics Industry Solutions Map

Strategic Drivers

Reduce Operating / Infrastructure Costs

Consumer Innovation /

Strategic selling and sales execution

Globalization and Merger Integration

Brand & Product Commoditization. / Pressure to Innovate

Tighter Integration and Partnering Industry Ecosystem

Industry Solutions

Product Development

Design Chain Management

Product Asset Management

Solution Offerings

Portfolio, Product and Requirements Management
- Product and Portfolio Management
- Requirements Engineering

Software and Systems Engineering
- Software Delivery for Systems
- Model Drive Systems Development
- Integrated Product Change Management

Process Improvement
- Enterprise Engineering Change BPM
- Mechanical

Design Communication and Collaboration
- New Product Introduction with Release to Manufacturing
- Mechanical Simulation and Analysis BPM
- Collaborative Engineering

Product Information and Reuse
- Product Information Management
- Long Term Data Preservation
- Business Intelligence

Product and IT Asset Management
- Enterprise Asset Management
- IT Asset Management

Industry Framework

PDIF : Product Development Integration Framework
- PLM semantic model for data exchange based on industry standards
- Industry specific Model Driven Systems Engineering (MDSE) methods and processes
- Connectors to support integration for SAP, PROSTEP, MSC and other applications
- Industry Content Pack for PDM Integration, ERP Synchronization, Simulation Management, Engineering Change Management, Supplier Collaboration, and Mechatronics

----

IBM Software

Information Management	WebSphere software	Rational. software	Tivoli. software	Lotus. software
Information Server Family	Product Center	Application Development Portfolio of Products	Maximo Asset, Change and Configuration Managers	Portal Server
DataStage Integration Server	Customer Center	Telelogic Rhapsody	Netcool Omnibus	Portal Extend
MDM Server for PIM	Business Monitor	ReqisitePro	Access Manager	Lotus Expeditor Workplace Forms
	PLM Content Pack	Telelogic Doors	Business System Manager	Sametime
		Clearcase	ITCAM	Mobile Suite of Products
		Clearquest		
		Teleogic for Embedded Systems		

IBM solutions for the aerospace & defence industry

**What does innovation sound like?
Listen to IBM**
*IBM strategic solutions enable
transformation for future success*

Labor, materials and fuel costs are on a constant ascent. Requirements, systems and orders are increasingly complex. To succeed, aerospace and defense organizations must incorporate new models into their flight plans for the design, build and aftermarket stages. Move toward global competitiveness and profitability. Develop a transformational plan for the long run.

Product development

Portfolio, Product and Requirements Management: Understand market dynamics and needs. Identify portfolio coverage for existing and growth markets. Collect customer needs and product requirements, making them visible throughout the complete product lifecycle. Reduce scope creep and cycle time.

Software and Systems Engineering: Model overall systems requirements earlier in the development cycle. Reduce development cycle time and cost for development with optimized and integrated system design. Support traceability from requirements to systems and product artefacts, enabling reuse within systems. Automate documentation generation to satisfy regulatory requirements.

Design chain management

Enterprise Business Process Management: Optimize processes across the development cycle. Automate milestone event processes such as engineering change notification, design data sharing. Increase process capability to deliver differentiated innovative products. Continuously optimize product quality based on design criteria

Communication and Collaboration: Communicate effectively within and across teams. Collaborate early across the value chain, reaching common project objectives but protecting intellectual property. Speed decision making with multi-organizational buy in.

Product asset management

Product Information and Reuse: Find desired product-related information with correct status, regardless of originating system. Enable high performance, reliable and secure data management across multiple design partners. Preserve product information to optimize downstream processes, and meet regulatory requirements.

Product and IT Asset Management: Provide an integrated approach to service management to deliver smarter products and quality services. Achieve fast and reliable IT services needed across the product lifecycle. Incorporate service requirements and warranty/quality feedback into product requirements process

IBM Aerospace and Defence Solutions Map

Strategic Drivers

Globalization of Sales and Operations

Improved execution and integration across the Product Lifecycle

Expansion beyond Products to Services

Improved management of talent & maximization of performance

Industry Solutions

Product Development

Design Chain Management

Product Asset Management

Solution Offerings

Portfolio, Product and Requirements Management
- Product and Portfolio Management
- Requirements Engineering

Software and Systems Engineering
- Software Delivery for Systems
- Model Drive Systems Development
- Integrated Product Change Management

Process Improvement
- Enterprise Engineering Change BPM
- Mechanical

Design Communication and Collaboration
- New Product Introduction with Release to Manufacturing
- Mechanical Simulation and Analysis BPM
- Collaborative Engineering

Product Information and Reuse
- Product Information Management
- Long Term Data Preservation
- Business Intelligence

Product and IT Asset Management
- Enterprise Asset Management
- IT Asset Management

Industry Framework

PDIF : Product Development Integration Framework
- PLM semantic model for data exchange based on industry standards
- Industry specific Model Driven Systems Engineering (MDSE) methods and processes
- Connectors to support integration for SAP, PROSTEP, MSC and other applications
- Industry Content Pack for PDM Integration, ERP Synchronization, Simulation Management, Engineering Change Management, Supplier Collaboration, and Mechatronics

---

IBM Software Foundation

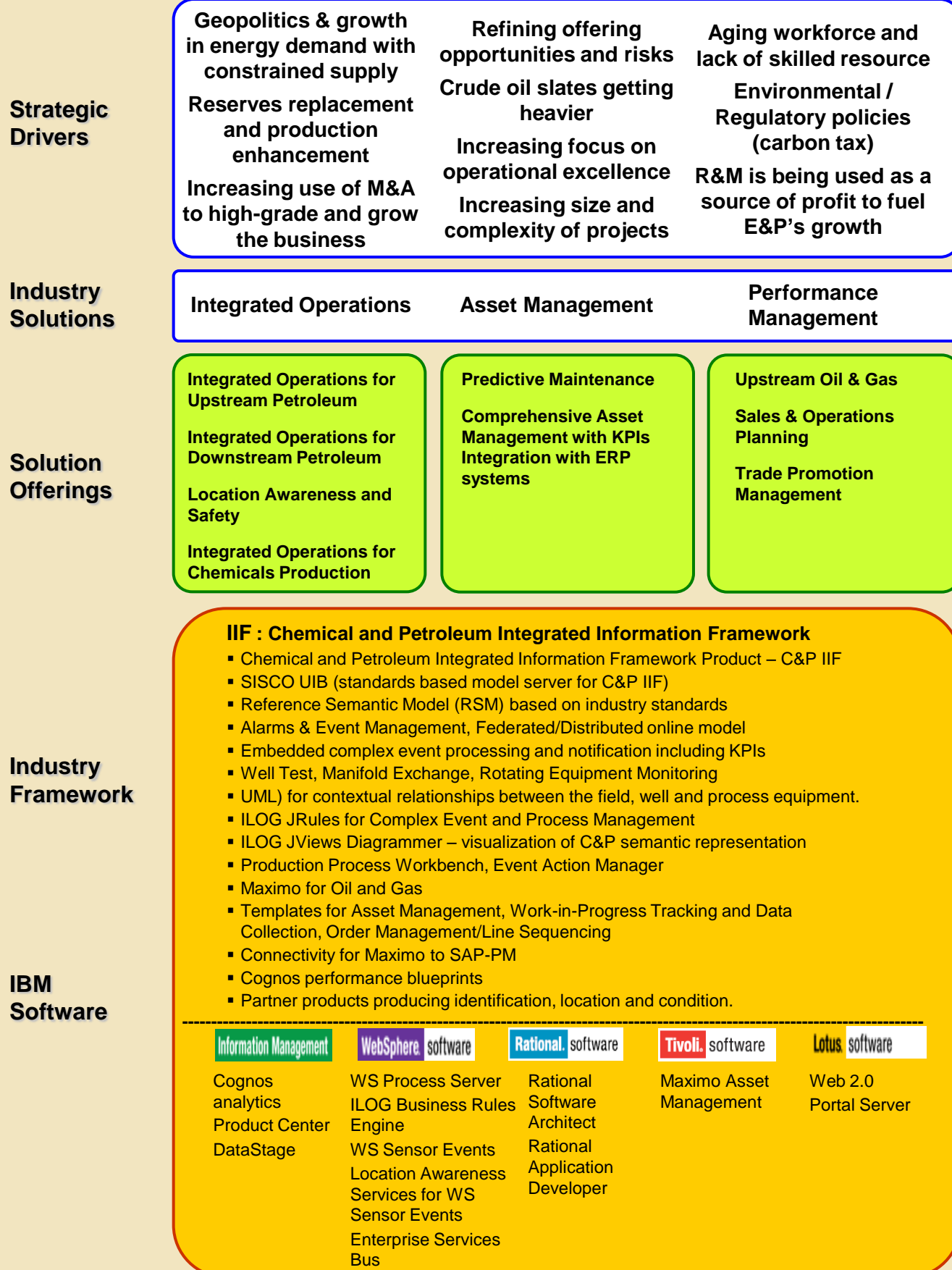| Information Management	WebSphere software	Rational. software	Tivoli. software	Lotus. software
Information Server Family	Product Center	Application Development Portfolio of Products	Maximo Asset, Change and Configuration Managers	Portal Server
DataStage Integration Server	Customer Center	Telelogic Rhapsody	Netcool Omnibus	Portal Extend
MDM Server for PIM	Business Monitor	ReqisitePro	Access Manager	Lotus Expeditor Workplace Forms
	PLM Content Pack	Telelogic Doors	Business System Manager	Sametime
		Clearcase	ITCAM	Mobile Suite of Products
		Clearquest		
		Teleogic for Embedded Systems		

IBM solutions for the chemicals & petroleum industry

To thrive in a globalized, competitive marketplace, leading chemical and petroleum firms are turning to innovative processes and business models to build operational efficiencies, bring quality, profitable products to market, and sync up supply and demand.

Integrated operations for upstream and downstream petroleum and chemicals production

Find oil faster

For drilling, IBM provides a comprehensive view across heterogeneous drilling formats for corporate analysis and easier handoff to production.

Lift oil more efficiently

For upstream oil and gas, IBM enables implementing integrated operations that can decrease production costs while increasing oil field recovery percentages.

Increase efficiency, and reduce costs of refining

For plants, IBM enables real-time operations feedback driving integrations that can decrease production costs and improve refinery safety.

Increase safety and compliance

Reduce accidents, provide real-time alerts and real-time tracking of resources location.

Provide skilled engineers and technicians with consolidated trends to proactively prevent production outages. Improve rescue teams' response time and safety. Maintain health, safety and environmental compliance and accountability

Asset management

Improve asset utilisation

IBM solutions can help you track, manage and optimize all your assets according to industry best practices and environmental, health and safety regulations Incident management from IBM

Performance management

Improve sales and operations planning processes. Coordinate operational and financial planning for improved forecasting and resource allocations . Streamline project implementation schedules with reduced risk. Close gap between strategic goals and tactical objectives. Consolidate plan, budget and forecast with visibility and communication of progress

IBM Chemicals and Petroleum Industry Solution Map

Strategic Drivers

Geopolitics & growth in energy demand with constrained supply

Reserves replacement and production enhancement

Increasing use of M&A to high-grade and grow the business

Refining offering opportunities and risks

Crude oil slates getting heavier

Increasing focus on operational excellence

Increasing size and complexity of projects

Aging workforce and lack of skilled resource

Environmental / Regulatory policies (carbon tax)

R&M is being used as a source of profit to fuel E&P's growth

Industry Solutions

Integrated Operations   **Asset Management**   **Performance Management**

Solution Offerings

Integrated Operations for Upstream Petroleum

Integrated Operations for Downstream Petroleum

Location Awareness and Safety

Integrated Operations for Chemicals Production

Predictive Maintenance

Comprehensive Asset Management with KPIs Integration with ERP systems

Upstream Oil & Gas

Sales & Operations Planning

Trade Promotion Management

Industry Framework

IBM Software

IIF : Chemical and Petroleum Integrated Information Framework
- Chemical and Petroleum Integrated Information Framework Product – C&P IIF
- SISCO UIB (standards based model server for C&P IIF)
- Reference Semantic Model (RSM) based on industry standards
- Alarms & Event Management, Federated/Distributed online model
- Embedded complex event processing and notification including KPIs
- Well Test, Manifold Exchange, Rotating Equipment Monitoring
- UML) for contextual relationships between the field, well and process equipment.
- ILOG JRules for Complex Event and Process Management
- ILOG JViews Diagrammer – visualization of C&P semantic representation
- Production Process Workbench, Event Action Manager
- Maximo for Oil and Gas
- Templates for Asset Management, Work-in-Progress Tracking and Data Collection, Order Management/Line Sequencing
- Connectivity for Maximo to SAP-PM
- Cognos performance blueprints
- Partner products producing identification, location and condition.

Information Management

Cognos analytics
Product Center
DataStage

WebSphere software

WS Process Server
ILOG Business Rules Engine
WS Sensor Events
Location Awareness Services for WS Sensor Events
Enterprise Services Bus

Rational. software

Rational Software Architect
Rational Application Developer

Tivoli. software

Maximo Asset Management

Lotus. software

Web 2.0
Portal Server

IBM solutions for the industrial products industry

Industrial Products is composed of six market segments - Textiles, Forest & Paper, Metals & Mining, Non-metals, Construction, Fabrication and Assembly.

Forest & Paper and Metals & Mining have common trends and characteristics:

• Primarily focused on base/crude materials
• Prone to boom/bust cycles
• High barrier of entry for new players
• Anchored where the natural resources are located (often far away from the market)
• Large increased demand in China/Asia

Supply chain management

Get on top of transportation, facilities, and inventory costs

Supply chain optimization, optimizing asset availability and use, is crucial to profitability for asset-intensive industries such as mining and forestry. By integrating your technology and manufacturing processes so that they cross traditional boundaries, you can help improve the responsiveness and agility of your manufacturing operations.

Enterprise resource planning

Gain deep insights into ERP and shop floor activity, and a total view of the extended enterprise

Move to an Integrated planning process – single set of business objectives and financial goals to eliminate plan discrepancies and organizational silos. Move from a "push-driven" (production schedule-driven) mode to a "demand-driven" mode based on customer buying

Manufacturing execution

Increase asset and resource effectiveness by providing a platform to support all types of asset classes and all types of work. Get multiple vendor solutions that are incompatible and inconsistent working together. Address growing compliance issues with security, reliability, emissions, regulations and new asset accounting requirement.

Decrease the complexity of managing the flow of information across your enterprise.

IBM Industrial Products Industry Solution Map

Strategic Drivers

Globalization is driving a need for global integration and visibility of the supply chain

Volatile raw material and transportation prices

Cash conservation and cost management is the order of the day for mining and metals.

Steelmakers have introduced a wave of production cuts and reduced their raw materials purchasing.

Environmental / Regulatory policies, carbon tax, carbon sequestration

Industry Solutions

Integrated Mill Planning and Tracking
– –

| Supply Chain Management | Enterprise Resource Planning | Manufacturing Execution | Other Business Solutions |

Solution Offerings

Planning monthly demand	**Managing customer orders**	**Executing Production**	**Business Analytics & Optimization**
Planning monthly sales & production	**Managing production orders**	**"Intelligent MES" using EPMS techniques**	▪ Production Design & Operations Scheduling (PDOS)
Planning weekly supply capacity	**Planning & receiving materials**		▪ Dynamic Inventory Optimization System (DIOS)
Planning Inbound Logistics	**Dispatching finished goods**		**Strategy & Transformation**
Planning weekly allocation	**Managing returns**		▪ Globally Integrated Enterprise
Scheduling Storage and Transport			▪ Smart Grid
			▪ Green Strategy & CSR

Industry Framework

IIF : Integrated Information Framework
- Reference Semantic Model (RSM) based on industry standards
- IIF Workbench, Alarms & Event Management, Federated/Distributed online model
- Embedded complex event processing and notification including KPIs
- Connectivity for Maximo to SAP-PM
- Well Test, Manifold Exchange, Rotating Equipment Monitoring
- UML) for contextual relationships between the field, well and process equipment.
- Production Process Workbench, Event Action Manager
- Templates for Asset Management, WIP Tracking and Data Collection, Order Management/Line Sequencing

----

Information Management	WebSphere software	Rational. software	Tivoli. software	Lotus. software
Cognos analytics	Process Server	Rational Software Architect	Maximo Asset Management	Web 2.0
Product Center	ILOG rules			Portal Server
DataStage	Sensor Events	Rational Application Developer		
	ESB			

IBM Software

IBM Growth Markets Software Industry Solutions Portfolio

Strategic Business Drivers
Client Requirements

100s of Business Solutions
IBM & Partner Intellectual Property

10 Industry Frameworks
Software Platform with Industry Extensions

Key Software Components

Technology Platform
Integration Middleware
User Collaboration & Interaction
Systems Management & Security
Development Tools

Contacts

China, Hong Kong, Taiwan	**Jason Chen**	jasonche@tw.ibm.com
India, Sri Lanka, Bangladesh	**Subrata Dasgupta**	subrata.dasgupta@in.ibm.com
Australia, New Zealand	**Andrew Gort**	agort@au1.ibm.com
ASEAN / South East Asia	**Poh-Wah Lee**	pohwah@au1.ibm.com
Korea	**Sungkwang Hong**	skhong@kr.ibm.com
Latin America	**Marco Bravo**	mbravo@br.ibm.com
CEEMEA	**Marilies Rumpold**	rumpoldm@at.ibm.com
Growth Market Industry Sales	**Fiona McMaster**	fionamc@au1.ibm.com

NOTES

This an IBM Software Group (SWG) document, so where possible I have used the software group "solution map" of Business Solutions and Solution Offerings. These are known internally as Domains and Projects and are defined in the Marketing Priorities Document (MPD) developed by WW SWG Industry Marketing. This document shows the domains and projects supported per framework plus a bill of materials of the assets available and the key SW products required.

I have used S&D definitions of industry drivers as shown in the S&D Solution Maps (S&DSM) document produced by Gaston Sandoval

Where information was incomplete in the MPD,

I have used S&DSM definition of the business solutions and offerings for that industry

I have used other SWG material for Framework asset descriptions, and key SW product lists

These deviations from the MPD are listed below by industry.

Banking: Framework assetss are incomplete in the MPD. 6-7 assets per domain are listed in the BIF launch enablement. I have used these asset names and merged with other asset names from the 2009 version of this document.

Insurance: I have used the S&DSM definition of framework support, namely IPAF and elements of the CCI domain of BIF

Financial Markets: Not in MPD so I have used the S&DSM definition of solutions and offerings. I also used the S&DSM definition of framework support, namely the Risk Management Domain of BIF

Telecommunications: I have used the input from Rita Jackson, "SPDE 2010 Capability mapping - with Project list updates.xls" as the source for Domain and Project names. The domains and projects in MPD are extremely high level, and are at slight variance with Rita's input.

Government: Government Industry Framework (GIF) assets are not listed extensively in the MPD, so I have used the assets as described in the document "Athena Assets and Extensions_20Aug09.xls" that was circulated at the time of the GIF announcement late 2009

Defence: No NCO framework assets shown in MPD. Have used asset list from 2009 version of this document

Energy and Utilities: Have used domain and project definitions from MPD, and added granularity to the projects with sub-project descriptions per spreadsheet sent by Rita Jackson. No framework assets other than SWG Product are listed in MPD so I have just listed the capabilities and some key products

Healthcare Provider: Expanded on Project Definitions as they were very granular and listed some of their key areas of focus or outcomes

Retail: per input from Greg Milwid

Automotive, Electronics, Aerospace and Defence: I have used the generic solutions / solution offerings as defined under Domains / Projects for PDIF in the MPD. The MPD does not list any assets for PDIF so I have retained the asset list from the 2009 version of this document.

Chemical and Petroleum: The has 4 Domains (Upstream, Downstream, Chemical Production, and Location Awareness and Safety) with identical Projects. These projects are not really business solutions, rather a description of the attributes of our offerings (e.g. Industry Standards compliant). As such I listed the above domains as offerings under a general solution category of "Integrated Operations". Also not all IIF assets were listed in the MPD so I merged the 2009 asset list with what is in the MPD

Industrial Products: Not in MPD so I have used S&DSM definition of solutions and offerings. I also used the S&DSM definition of framework support, namely IIF, and removed "Chemical and Petroleum" from the framework description to avoid confusion.