

Executive summary

Enterprise Application Integration (EAI) is a natural next step in corporate information technology (IT) development. Companies have over a number of years created a complex web of interconnected applications each with its own means of communicating with other systems. As new systems are introduced, they too must be interfaced with each of these legacy applications, making every step more difficult to perform and more costly. These point-to-point (P2P) solutions often lead to an inability to capture network events and create problems of untraceable revenue leakage and loss or inconsistency of data. This is a particular problem for today's wireless telecommunication industry.



EAI seamlessly joins business-to-business applications to allow systems to "talk" to one another without frontiers and without separate P2P interfaces

Players in this sector face innumerable challenges such as increased competition, entry of international carriers, investment in 2.5G and 3G products and services, and much more. These challenges result in revenue slowdown and increased costs. To overcome these, telecommunications firms must identify and eliminate unnecessary revenue loss inherent in their current operating systems.

A well-implemented EAI solution can achieve this. EAI seamlessly joins business-to-business applications to allow systems to "talk" to one another without frontiers and without separate P2P interfaces. For telecommunications firms that can mean creating end-to-end revenue stream stability that not only addresses revenue/cost leakage but also helps to recover money more quickly.

Using EAI tools and techniques a complete EAI solution tackles and improves:

- > inefficiency of disparate data sources
- > inflexibility of packaged solutions
- > complexity of modern IT infrastructure and architectures
- > high cost of developing and supporting P2P solutions

The potential business benefits of EAI are evident but many firms struggle to achieve these when EAI solutions are not implemented in a coherent manner or are hindered by other obstacles such as:

- > the desire to integrate all systems and applications at one time. This is an impossible feat and almost always results in a total failure of the EAI solution
- > lack of a true internal mentor for the project. The implementation of an EAI solution is a substantial undertaking both financially and in terms of time and effort. Success often hinges on the existence of an internal sponsor who understands EAI and the significant benefits it can bring



Atos Origin's unique approach to EAI ensures that every EAI solution implemented fits exactly with each organisation's individual requirements.

- > the issues involved in the complex world of governance. EAI touches on all systems and all parts of the organization making it an extremely sensitive operation and one difficult to get wide acceptance for. Again an internal sponsor alleviates these difficulties
- > an implementation partner who sticks to a standard template for the implementation of the EAI solution which rarely fits with the firm's existing systems and infrastructure or answers their needs

Atos Origin's unique approach to EAI ensures that every EAI solution implemented fits exactly with each organisation's individual requirements. There is no "one size fits all" template that can answer every firm's needs, that's why Atos Origin has never created one. However, we have developed a proven set of tools and a blueprint that allows us to compress implementation timescales, adding value early on in the business lifecycle.

Our reference architecture covers two major elements: Business Rules and EAI Workflow. Atos Origin is experienced in employing all major EAI/Middleware and Rules technology in building customer solutions. We also have extensive experience in the development and building of EAI adaptors and connector solutions. Based on this experience, we have created our Common Adaptor Toolkit (CAT). Atos Origin's approach is holistic and our full service team works not only on the technical side but covers all areas of integration including the strategic and business issues too. Atos Origin's proven approach brings flexibility, agility, efficiency and coherence to your business in a timescale that suits you. More fundamentally, EAI solutions deliver savings of development costs and can reduce operational in comparison to P2P solutions.

Our EAI solutions have already helped to increase data flow and manageability and decrease revenue loss for many firms. These include: Amena, bbned, Euronext, France Telecom, Interbrew, Levi Strauss, Orange, Philips Medical Systems, Telefonica, Telefonica del Peru, Vodafone, Wanadoo.

What is EAI?

EAI seamlessly joins business-to-business applications as well as internal systems such as CRM and ERP solutions. It allows systems to "talk" to one another without frontiers and without separate P2P interfaces. It provides real-time integration by connecting applications, web sites databases and other content sources. With straight-through processing, the flow of information and data can be automated, eliminating the need for manual intervention.

With P2P solutions, systems are dependent on one another; they must always be present in order for information to flow. With EAI, systems are decoupled and become independent. The EAI solution mediates communication between systems. As systems are no longer mutually dependable, not only are there fewer problems, but flow of information and data is also much more flexible and agile.

EAI goes much further than the benefits offered by ERP systems, covering integration opportunities that these applications cannot address. EAI is most appropriate for firms employing a best-of-breed approach to their IT systems. However, it can also successfully enhance existing ERP systems.

Atos Origin integration solutions encompass a number of different elements including:

- > **EAI Business Case Development:** Developing the business and financial case for EAI deployment, highlighting benefits to an organization
- > **EAI Readiness Assessment:** Identifying the quick wins available and any obstacles for a successful EAI deployment.

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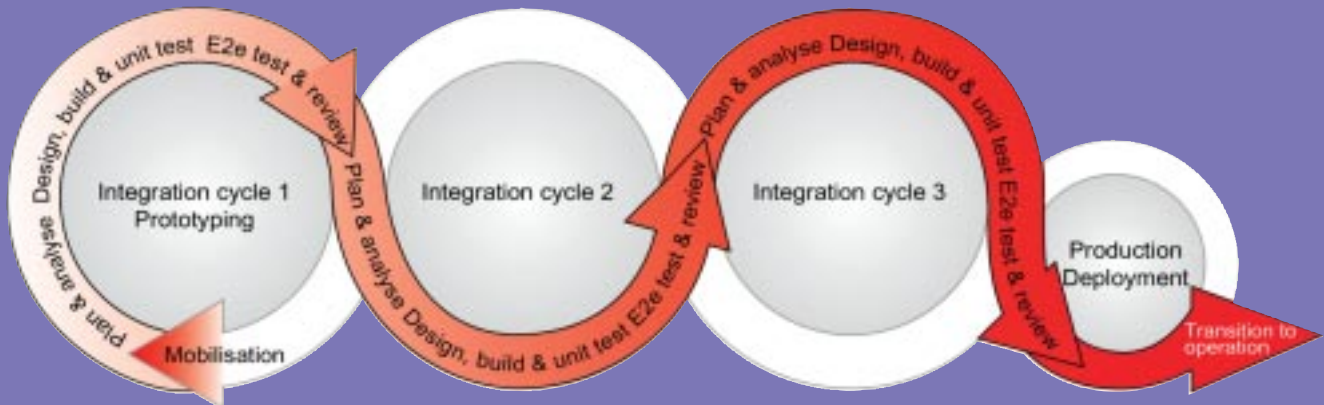
- > **Implementation health check:** Executing a rapid assessment of the state of an EAI deployment, and making appropriate recommendations. We also undertake project turn-around where projects are encountering delays and obstacles.
- > **Demand and supply side integration:** Rapid prototypes to full electronic papers-less trading between Sales and Supply side partner organisations.
- > **Straight through processing/client self care (order to cash):** Significantly reducing cost-per-transactions by implementing processes which have no-manual intervention.
- > **Services provisioning and fulfilment:** Traditional Telco/Broadcast Service Provisioning, Activation and fulfilment links BSS, OSS, NSS systems for automated processes.
- > **Business activity monitoring:** Implementing Service Quality and Transaction Monitoring solutions to manage and minimise Revenue Leakage in next generation Service Provider solutions.

What can EAI do for your business?

It is generally accepted that traditional mobile networks have revenue leakage between 0.5 and two percent. The problem occurs when in addition to delivering traditional consumer network services, operators offer a wide variety of high volume transaction based services. Many supplied by third party service providers. The arrival of EDGE, 2.5G and 3G services will make the risks associated with revenue leakage even higher. EAI enables monitoring of many different data sources, and correlation of disparate events into sets of transactions. That means monitoring revenue generating events, from third party systems, service delivery platforms and network events, to correlate discrete transactions from beginning to end. As a result complete, incomplete, rejected and failed transactions can all be identified.

Enterprise Application Integration (EAI)

Issues addressed	Focus on Integration issues: High cost of Point to Point Solutions for Development and Support. Using EAI techniques and technology allows businesses to address the inherent inefficiency, inflexibility, and complexity of modern IT infrastructure. Specific sub-solutions covering, Readiness Assessment, Business Case Development, Implementation Health check, Demand & Supply side integration
Objective	An Integration solution, which created a simpler and managed Systems Integration approach, consistent developer approaches and efficient operational deployment models. This is what we term Enterprise Application Integration (EAI).
Approach	We takes a holistic approach encompassing client's people, processes and partnerships. Our full-service team includes Strategy, Business and Technical consultants to cover all aspects of an Integration project. We are committed to meeting client's requirements rather than simply offering an "out of the box" solution. We have a proven set of tools and blueprint that enable us to compress implementation timescales, adding business value early in the project lifecycle. By using this proven EAI approach clients can bring flexibility, agility, efficiency and coherence to their business



Benefits	<ul style="list-style-type: none"> Reduced Development, Support and Operations costs Enabling different channels to market to increase sales Increased Efficiency through improved Sales, Fulfilment, and Customer Services Faster time to market with Business to Business (B2B) Integration solutions Improved Operational Effectiveness by integration of Business Process and Systems Integration Best of breed Integration partners including BEA, IBM, Tibco, and WebMethods
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Atos Origin takes a holistic approach encompassing people, processes and partnerships.

In this way EAI can move your business away from functional IT silos towards a more service-oriented architecture. With EAI, systems become loosely coupled and allow for the total flow of data across the organization. As such, flow of data finally becomes manageable.

By making the flow of data more manageable, the cost of necessary support declines significantly. In addition, the cost of development can also decrease over time. Indeed, once EAI has been implemented, the same team of people can develop new systems rather than always having to call on the original implementers. This can also make development significantly faster too. However, it is worth noting that the potential savings to be made with EAI will diminish if the EAI solution is not fully implemented immediately that the EAI purchase has been made. When finances are tight, some firms put their integration projects on hold assuming this is financially sensible. But in reality, once an EAI solution has been purchased, the cost of going ahead with deployment is far less than the cost of delaying implementation.

The EAI platform also improves the systems scalability by enabling technology upgrades and the integration of new appliances.

With costs reduced and systems working much more efficiently, you will find that you can significantly increase your speed to market with new products and services. You can also enable and take advantage of different channels to market.

With an EAI solution, you can improve fulfilment, sales and overall customer satisfaction. You can manage real-time flows and events in a heterogeneous environment. Using a transaction monitoring service, made possible through an implemented EAI solution, you can provide detailed customer transaction histories for use in the following ways:

- > Customer QOS records – to ratify requests for refunds
- > Customer Transaction data warehousing – to identify hot and cold spots and times
- > Service platform QOS within transaction contexts
- > Third Party Service QOS monitoring
- > Third Party Payment records for audit of Settlement and Revenue Share agreements
- > Ability to highlight systematic and repeated service failures

Overall EAI addresses and diminishes the inefficiencies caused by disparate data solutions, the inflexibility of packaged solutions, the complexity of modern IT infrastructure and architectures and the high costs of developing and supporting P2P solutions.

EAI allows you to track transactions that take place across the entire enterprise and discover and limit where information and therefore money is being lost. EAI ensures data consistency and secures and enhances the reliability of data exchange. In particular, it allows you to take full advantage of today's mobile multimedia opportunities such as after-sales service, customer loyalty cards and accounting and finance systems.

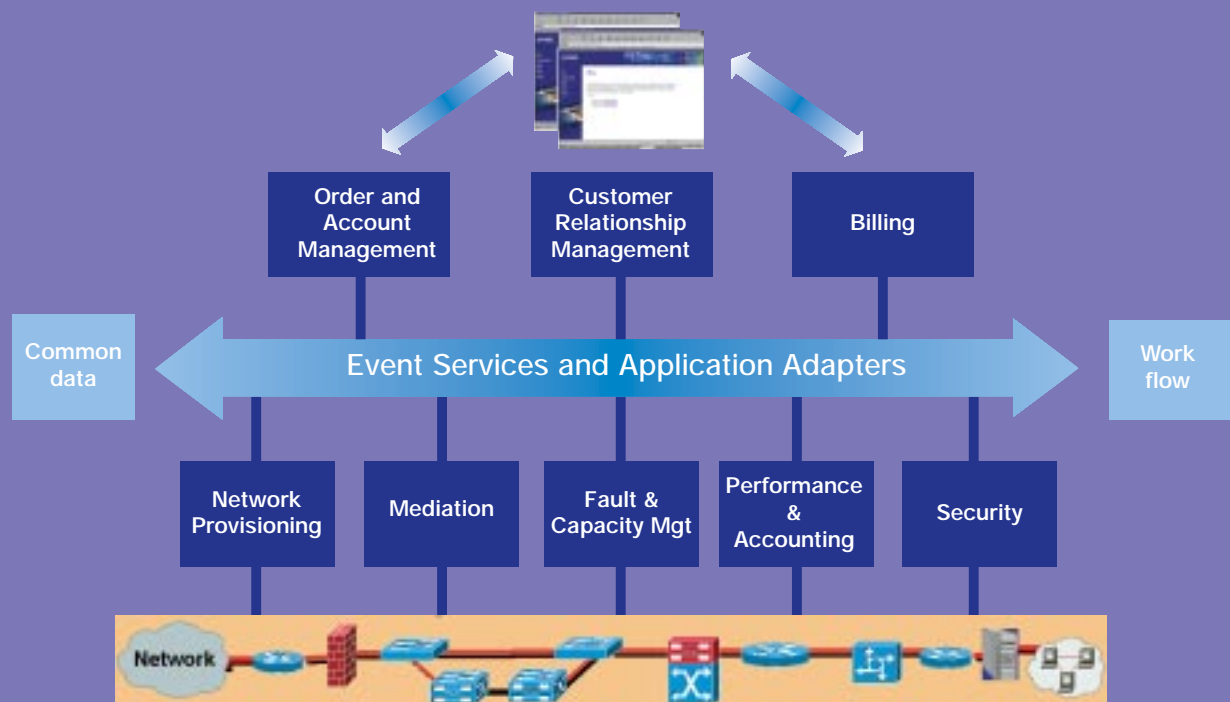
EAI has the potential to make your complex business systems and processes not only much more efficient but also much more cost-effective. It has been proven that EAI solutions can deliver savings of between 25 percent and 40 percent of development costs and can reduce operational costs by 30 percent to 74 percent in comparison to P2P solutions.

Issues in implementing EAI

EAI solutions touch on all systems within the organization making governance a hugely sensitive issue and an obstacle to acceptance.

EAI implementation is also often held up by a lack of understanding of EAI itself and the business benefits it can bring. This task can be made much easier by having a high

EAI – Reference Architecture



Atos Origin works with its customers to find the perfect solution to fit exactly with their business requirements.

level sponsor within the organization. By finding a mentor who understands EAI and its inherent advantages and who has the attention of senior management, the process of gaining acceptance for EAI implementation can be much smoother. To succeed, the entire organization must “buy in” to the EAI solution. It is a costly exercise both financially and in terms of time and effort. Usually, no project team or department can bear the cost alone. EAI is ultimately a strategic decision to be made by the management of the organization.

To gain company-wide acceptance, the value of integration needs to be proven. Best practice is to carry out a pilot project on one part of the infrastructure. Once the project has succeeded and the business benefits are clear, it is much easier to find agreement to continue a step-by-step approach to full integration. Indeed, firms often realize that they should have deployed EAI years ago. With so many P2P solutions, they often find that they have been carrying a huge and unnecessary overhead cost for support services. A step-to-step approach is key to success. It is impossible to integrate an entire corporate infrastructure at one time.

Successful EAI requires a targeted and coherent approach to integrate the key elements of the business. And it requires a significant amount of planning too. Experience has shown that EAI projects are most successful when adequate time and effort has been put into the planning and design stages of the deployment. Not only does this make the building stage much more efficient but creating a detailed plan at the front-end also saves significant time and resources later on. Indeed, the more planning and risk mitigation put into the initial stages of the EAI project, the more likely it is that the integration will be completed on time and under budget.

Atos Origin's approach to EAI

Atos Origin has been offering EAI solutions since the 1990s. Since that time we have built up thousands of man-hours in experience working on some of the biggest EAI deployments around the world. Atos Origin takes a holistic approach encompassing people, processes and partnerships. We have a full service team that includes not only technical consultants but strategic and business specialists too. Together they cover all aspects of the integration project, from the decision-making process thought



Our EAI solutions have already helped to increase data flow and manageability and decrease revenue loss for many firms globally.

to management of the new system. Atos Origin works with its customers to find the perfect solution to fit exactly with their business requirements. Atos Origin has produced a reference architecture for EAI, in particular comprising all details delivery of services. We have no standard template for deployment that is imposed in the implementation of EAI. We are committed to meeting your requirements rather than simply offering an out-of-the-box solution.

Our unique reference architecture allows us to provide solutions for the integration of Business Support Systems (BSS) such as ERP, CRM, billing, provisioning and mediation. Our reference architecture covers two major elements: Business Rules and EAI Workflow. Atos Origin is experienced in employing all major EAI/Middleware and Rules technology in building customer solutions.

Atos Origin's EAI solutions include the integration of Operational Support Systems (OSS) including provisioning, mediation, inventory, trouble ticketing and service delivery. We cover the integration of Network Support Systems (NSS) including SMSC, VAS, IP/VPN, DSLAM and HFC, and also offer BSS/OSS and NSS integrated solutions, as well as having an in-depth understanding in the implementation of these complex procedures.

Atos Origin has extensive experience in the development and building of EAI adaptors and connector solutions to fit exactly with your systems and requirements. Based on our experience, we have created our Common Adaptor Toolkit (CAT) that standardizes access to third party applications and manages application/EAI interaction.

CAT offers unique benefits to our customers including:

- > Allows rapid and consistent development of new adaptors
- > "Enhancements" to existing adaptors are often already handled by the toolkit without a recompile of code.
- > Control over the behaviour of the adapter via the configuration file.

- > Data formatting (e.g. Messages, XML, Files) configured through XML configuration file, rather than code.
- > Consistency of approach in adapter development.

CAT is available for Java and C++, on a variety of platforms including Solaris, Windows 2000/NT/XP, HP-UX and offers standardized handling of technology APIs (e.g. CORBA, DCOM/.NET, HTTP, J2EE, JMS, XML).

In addition, Atos Origin has a significant library of adaptor solutions available including:

- > Inventory Management
- > Network Management
- > CRM & ERP
- > Billing
- > WAP, MMSC, SMSC & OTA
- > Automated Call Distribution
- > Provisioning / Mediation
- > SIM and Number Management
- > Basic Technology Adaptors (Various File formats, Telnet, Shell/Command Line, SOAP, XML/HTTP)

Atos Origin works with best-of-breed integration partners and including BEA, IBM, Tibco and WebMethods.

Our EAI solutions have already helped to increase data flow and manageability and decrease revenue loss for many firms globally. These include: Amena, bbned, Euronext, France Telecom, Interbrew, Levi Strauss, Orange, Philips Medical Systems, Serono, Telefonica, Telefonica del Peru, Vodafone, Wanadoo.

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