

Service Oriented Architecture (SOA) Steel Processing

Nowadays, an information system in a steel company consists of various applications mutually transferring data via various interfaces. Applications are executed for different purposes and play different roles on multiple abstraction levels. All applications together form the *Information System (IS)*. One of the main features of a modern IS is the high degree of data interchange among applications. The challenge is to choose optimal set applications suitable for your production and establish efficient and reliable real-time data interchange among them. The 6screens Framework brings you a unique combination of the most suitable applications connected through TIBCO's *Enterprise Service BUS (ESB)*. The ESB technology is the part of the 6screens framework because it brings maximum data interchange reliability, flexibility in configuration, and a "white canvas" approach to the world of real-time *Business*

Quick Glance:

The **6screens Framework** is a unique combination of TIBCO's cutting edge technology and PIKE's 20 year process automation experience in the steel industry. It provides actual, real-time production information from the process control level, over advanced planning and scheduling, business intelligence up to the holding level.

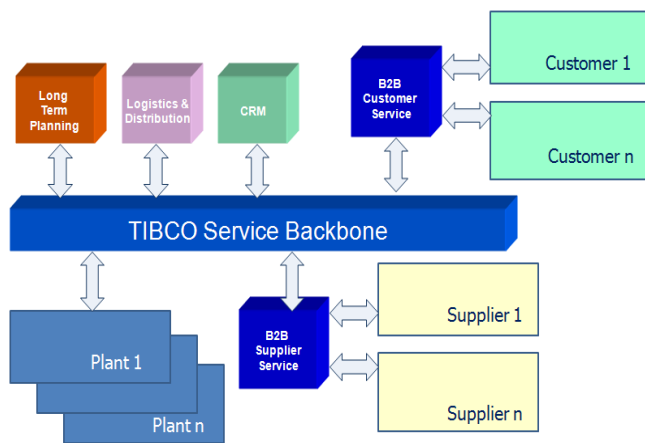


Figure 1 6screens Framework global architecture

Intelligence. Often the current decision-making process applied to today's ordinary environment is unscientific, untimely, reactionary and lacking in broader context and meaning. It is, however, this very same environment that constitutes the main cost saving and revenue generating opportunities of the business. It also represents the external character of the business to the marketplace, its customers and partners. Providing a decision-making capability that addresses tactical (scenario-specific) decisions, at specific inflection points (real-time) and with a level of context (event history, priority and circumstance) is the aim of *Complex Event Processing (CEP)*. Every managerial decision or corporate strategy should be based on the most up to date data, helping to increase the quality of inputs and impact for decisions.

6screens Framework is combination of cutting edge TIBCO technology and more than 20 years of PIKE's process automation experience in the steel industry. It's not your iron, steel, furnaces and mills that care about your business..... **IT'S YOU!** *PIKE's 6screens Framework maximizes the utility of your existing application infrastructure and seamlessly integrates added real-time technology applications. This ensures you reliable and fast data interchange in your IS, which is the basis for the real-time data you need to make relevant, competent and impactful decisions.*

Benefits

- **Global Overview:** Across the entire company, consortium or holding.
- **Deployment instead of development:** On average, 40% of time for transforming a new requirement from its functional to technical specifications is saved.
- **Decoupled applications: Today,** production control systems in the steel industry consist of various applications with a patchworky mixture of their interfaces. Using adapters to the TIBCO ESB, increases all applications availability and reliability.
- **Real-time BI:** Real-time information across all levels of control. Appropriate information available for each level of management.
- **Operation & Release Management:** Standard system operation and new deployments can be monitored and controlled very effectively.

Value of the 6screens Framework for steel process automation:

- Decreases cost of a new requirement implementation by 40%
- Maximizes the reliability of data delivery, which reduces 50% of issues during production by 50%
- Introduces the SOA concept to the steel industry. 6screens is an extensible framework that supports the configuration, deployment, and management of heterogeneous applications to achieve SOA
- Data interchange over the TIBCO ESB opens the door to world of Complex Event Processing (CEP) and Real-Time Business Intelligence

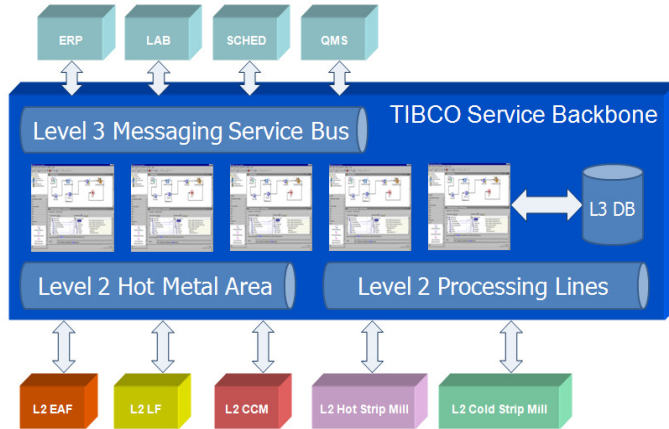


Figure 2 6screens Framework local architecture

The picture to the right presents the main components of PIKE's 6screens Framework in one Level 3 system. All applications are connected via adapters to the *ESB* based on TIBCO ActiveMatrix. On the bottom there are level 2 applications – each dedicated for certain production units (Electric Arc Furnace, Continuous Caster Machine, etc.). Similarly, ERP, Laboratory or Quality Management Systems (level 3) communicate with level 2 applications through the *ESB*.

Features

- Creates visibility into the neural system of your IT.
- New data is real-time and available for other systems at the moment of maximum business impact.
- Enables easy extension of your IS by a new application using adapter approach.
- Unifying data interchange allowing easy administration and value added application extension.
- **Decoupled** producers and consumers allows independency of the running applications.
- Applications provide and consume data via **adapters**. Adapters isolate applications from more complex actions. Message transformation and business process automation can be handled once the data is published to the ESB infrastructure.



6screens Framework components

- Technological process control applications for Blast Oxygen Furnace, Electric Arc Furnace, Secondary steel treatment, Continuous Caster machines, Hot Strip Mill, Cold Mill, Finishing Lines etc.
- TIBCO Messaging Bus
- TIBCO ActiveMatrix as Enterprise Service Bus
- Real-time business intelligence module TIBCO Enterprise RTView
- Material, customer order, and production order tracking
- Enterprise Resource Planning
- Production Scheduling
- Quality Evaluation
- Adapters for various applications, communication protocols, data formats and legacy systems

SUPPORTED ENVIRONMENTS:

- Microsoft Windows XP, Vista
- Unix
- Open VMS
- Solaris
- Linux
- MacOS

SUPPORTED ADAPTERS:

- TCP/IP
- CORBA, COM
- SQL, JDBC
- Flat file
- J2EE, .NET
- UML, WSFL, BPML
- SAP, Oracle EBS
- Mainframe