start profiting sooner from your production. You don't want any surprises. If you are thorough it will pay off down the road yet you need to get it done quickly.

Thanks to the common engineering environment in Totally Integrated Automation, you can access all components of your automation system across all of your networks from one central point. Another example of how TIA speeds up start-ups is Component based Automation - our concept for modularizing plants. Complete sections of a plant can be developed in parallel and started up in advance. When the sections arrive on site, they have been fully tested and all that remains to be done is to optimize the interfaces. And shorter start-up time also means quicker time-to-market.

操作
Operation

作为运营经理，需要不断地改进生产效率。不仅是优化每个工艺过程，而且还需要协同多个生产过程以及业务流程之间的高效率。

采用全集成自动化，可以对工厂和生产流程进行建模。我们的 MES 应用程序提供有生产过程中所需的所有必要工具，例如归档、质量保证、生产数据定义以及物流管理。它们全部集成在一个框架中，并可在公司范围内和公司范围外快速、安全和有效地进行通讯。除此之外，不论你在何处，通过立即通告工厂的状态，可以显著减少停工时间。报警和故障报文可以自动地传送到可视化系统，由此不仅可以减少编程工作量，而且还可以显著改进操作的可视化。

As an operations manager, you need to improve productivity. Not only can you optimize individual processes, but to have a major impact on productivity you have to coordinate across not only multiple production processes but with business processes as well.

With Totally Integrated Automation, you can model plants and production processes. Our MES applications provide you with all the necessary tools in the production process such as archiving, quality assurance, product data definition and materials management. They are integrated into a framework and communicate quickly, securely and efficiently within the company and outside the company. In addition, they minimize downtimes by informing you immediately about the status of your plant no matter where you are. Alarms and fault messages are automatically routed to the visualization systems. Not only do you save programming effort, but also improve the visibility of your operations.

维护
Maintenance

一个维修和保养机构的管理是非常复杂的，任何过程的简化都会节约时间和金钱。这包括降低培训需求和备件库存，管理越来越少的维修呼叫，改进安全，减少停工时间。

采用全集成自动化，可以在整个运营过程中使用相同的控制器，显著降低维修人员的培训费用以及备件库存数量。故障安全型控制器可以为操作员和维护人员提供更为安全的系统。容错型控制器可以避免意想不到的系统缺陷。热插拔 I/O 系统模块允许在运行过程中进行维护和保养。通过网络，只需按动按钮，即可装载用户参数，而无需其它附加工作。

即使系统停机，也还提供有一个故障检测和排除工具。例如，通过电话或因特网可以对自动化系统进行远程诊断。在许多情况下，维修人员都不必亲赴现场排除故障。结果是: 增加工厂的可用性，同时节约时间和成本。

Managing a service and maintenance organization is complex, and any process simplification will save you time and money. This includes reducing training requirements, stocking fewer spare parts, managing fewer service calls, improving safety and reducing downtime.

With Totally Integrated Automation, you can use the same controllers throughout your operations, significantly reducing training for your service personnel and the number of spare parts required in inventory. Fail-safe versions of our controllers offer safer systems for operators and maintenance personnel. Fault-tolerant versions eliminate unplanned system outages. Hot-swappable I/O and system modules allow maintenance during operation. And user parameters can be loaded over the network at the press of a button, without additional overhead.

Even if the system does go down, there is a wealth of fault detection and trouble-shooting tools available to you. For example, you can perform remote diagnostics of

现代化和改进
Modernization and upgrade

您也许非常希望能够快速、更为灵活地响应市场的需求，或者只希望通过采用新技术，对现有操作进行改进。

采用全集成自动化，可使您扩展或改建工厂，而无需中断运行。分布式 I/O 设备可以用于集成新的驱动器、阀门、仪表或传感器，并可在线添加或拆除。由此在改装过程中即可充分利用先进的技术，这是因为全新的 TIA 产品都可非常容易地集成到现有系统中。我们的系统具有可靠的兼容性，可以保证继续使用所熟悉的工程工具和部件。

另外，采用基于部件的自动化，一种 SIMATIC 系列中的集成技术，可以简化面向对象的模块化设计，可以快速地将生产线针对新的产品进行现代化和调整。机器或生产区域可以进行热插拔。全新的机器都可以集成到现有工厂网络中，而无需更改控制程序，并且不会影响所有已测试的功能。

your automation system via telephone or Internet. In many cases, service personnel don't even have to be on site to eliminate faults. The result is an increase in your plant's availability, while you save time and money.

You want to respond faster and more flexibly to changing market requirements. Or you just want to get more out of your existing operations by taking advantage of new technology without starting all over.

Totally Integrated Automation enables you to expand or convert your plant without interrupting operation. Distributed I/O devices for integrating new drives, valves, instruments or sensors can be added or removed on the fly. This allows you to take advantage of our advances in technology during your retrofit, because new TIA product generations are integrated easily into existing systems. We are rigorous about system compatibility and ensure that you can continue to work with familiar engineering tools and components.

Also, with Component based Automation - a technology integrated within the SIMATIC family to simplify objectoriented modular design - you can modernize or adapt your production lines to new products particularly quickly. Machines or production areas can be replaced or added plug & play. New machines can be integrated into the existing plant networks extremely easily on site, without changing the control program and without affecting already tested functions.

设计工程
Design and Engineering

安装和调试
Installation and Commissioning

操作
Operation

维护
Maintenance

现代化和改进
Modernization and Upgrade