

WHITE PAPER



**ARE YOU READY
FOR THE PROJECT
ECONOMY?**

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Periodically throughout history, the world economy changes in drastic, revolutionary ways. These changes are driven by technology, the spread of new ideas and ways of thinking, cultural changes and the gradual accumulation of human experience. Examples of these economic sea changes include the transition from hunter-gatherer economies to agricultural economies, and then later to industrial economies. The industrial age has given way gradually to the information economy. But at this point, all economic sectors are feeling the rise of a new paradigm – the Project Economy.

The rise of the industrial economy allowed the mass-manufacture of mass-marketed products. The reduced cost of commodity goods allowed an unprecedented increase in consumption throughout the developed world. Over time, however, manufacturers have been subject to increasing pressures to lower cost and increase efficiency on a year-over-year basis. This has driven manufacturers to the developing world in search of lower-cost labor and facilities. To increase efficiency through automation and share data throughout the enterprise, manufacturers took advantage of the revolutionary technological capabilities delivered by the Information Age.

The dawn of the 21st Century, however, marks perhaps the end of this overlap between the Industrial Age and the Information Age. The shrinking of the world due to the Internet and affordable global travel, and the predominance of world media, has made the world smaller. The shrinking world has caused a corresponding consolidation and reduction in the number of large manufacturing companies, and this has created a buyer's market for manufactured components provided by mid-market companies. The multitude of messages and media in this interactive age contributes to a more fragmented market for consumer goods. No longer will a united universe crave identical products. We are now facing a situation not of one universe – but of a universe of one. Each customer company or individual is a unique entity – and expects to be treated that way. Shorter product lifecycles, product mass-customization and increasing complexity of the supply chain are all symptoms of this new Project Economy.

In the past, an original equipment manufacturer (OEM) might outsource of individual components, manufacture others themselves, assemble all the components and then market the product. Now the same OEMs might perform little or no manufacturing, choosing instead simply to market products under their brand name and perhaps sell aftermarket service and parts. A supplier to an OEM in the past may have contracted for the manufacture of specific component parts on a per-mil basis. Now that same supplier may be involved in engineering and design of component parts and actively manage inventories of parts for their OEM customers. Since each OEM will have different requirements and needs, the supplier needs to operate several parallel business systems.

As the Project Economy moves forward, those who rely on the business philosophies and business systems of the Industrial Age will experience difficulty. If a company's management processes or information systems are not up to the challenge, problems will manifest themselves in various ways depending on the individual company.

OEMs making heavy use of extended supply chains will miss critical deadlines for product launches or see costs spiral out of control. Old systems designed for in-house manufacturing will not include the advanced contract management and supply chain management tools required by the Project Economy. Companies supplying OEMs will find themselves less prepared to compete in a market where major manufacturers push more managerial burdens onto their suppliers.

Signs of the Arrival of the Project Economy

These are the harbingers of the Project Economy, many of which are certainly already affecting your business.

Disconnection between how and where a product is marketing and produced

Outsourcing of components has been a growing practice in manufacturing for a long time. However, more and more product marketers are completely outsourcing product manufacturing—and even product development and design—hanging onto marketing and sometimes value-added services such as maintenance and other aftermarket revenue sources.

Complex supply chains that extend into multiple countries

Business of any size must now be multilingual as well as accommodate multiple rules of measure and various accounting rules native to each nation and continent its operation touches. Moreover, as relationships between supplier and customer become more fluid – and suppliers are involved in more value-added work – business systems must allow for a free flow of data across organizational boundaries.

Shortening product lifecycles

Global media brings new product information to market more quickly, and manufacturers struggle to keep up. To adapt, manufacturers are “re-badging” the products of other manufacturers, taking advantage of others’ core competencies instead of trying to gear up for new products at the breakneck speed of 21st century business. Or a manufacturer might outsource product development, design and other core business functions. Other companies that operate in more of a project-centric environment – in manufacture-to-order or engineer-to-order environments – are turning literally into general contractors that self-perform little if any manufacturing work. This contractor business model allows a project-based business to leverage capabilities of a large number of suppliers – capabilities that the business could not develop on its own quickly enough to meet changing customer demands.

Government regulation driving rapid change

As businesses operate in multiple parts of the world, more numerous and more complex regulatory requirements are putting a heavy burden on business. After all, dealing with regulation in a single country is difficult enough, much less facing different regulatory and monitoring requirements in multiple countries. The growing need to track product content, environmental impacts and labor and wage figures will require businesses to employ flexible and easily reconfigurable business tools to stay ahead of the regulatory onslaught. Government contractors in particular are facing more and more scrutiny of the value they deliver to their public sector customers, and tools like Earned Value Management will become more important to those who deliver intangibles like research and development.

Impact on business systems

More than a trend, the Project Economy is a revolution. This revolution will affect every business in every industry – and software vendors like IFS need to offer new, broader and more flexible technology to help customers succeed.

Gone are the days that an applications vendor like IFS could expect their system to operate as an island unto itself. A company today may need to extend its business systems by opening portals or offering dynamic points of integration with its customers’ and suppliers’ systems. Not only must a business application offer rich functionality to the company that implements it, but it must also integrate easily with third-party systems that might be employed by businesses further up or down the supply chain.

Both within and without the enterprise, a project-centric business model places specific demands on an enterprise application. One of the most basic elements of project-specific enterprise applications functionality is the ability to track profit and

loss, labor hours and inventory by project. This functionality is key for aerospace and defense companies that must segregate government-owned inventory from other inventory.

Furthermore, in a traditional manufacturing organization, there is a functional wall between engineering, manufacturing and service management. A product is designed, and that design is passed on to manufacturing, without much dynamic interplay between the two departments. In a project-centric environment, changes to design tend to take place frequently, and unless an application accounts for a free flow of information between the design and manufacturing process, cost overruns and delays are hard to prevent. Changes to design affect cost and possible delivery date, and inadequate visibility of the entire supply chain – including design and engineering – can make it difficult to manage a customer's expectations for cost and delivery date.

Not only does the Project Economy require greater communication between engineering and manufacturing, but it will require engineering and project management time to be more closely tracked. As more companies sell not just an end product but intangibles including research and development and design of those products, earned value management functionality will become more important so customers can measure the return they receive on their investment with suppliers.

As manufacturers outsource work that takes place before the sale, they often derive more of their revenue from after-sale service and maintenance fees. This means that increasing the efficiency and effectiveness of service management and call center operations gains new importance. Just as data needs to flow easily between engineering and manufacturing, it must flow from manufacturing and engineering to service management and customer relationship management systems. Accurate information on the product as manufactured allows support and service staffs to accurately diagnose and resolve problems with entire product lines or specific one-off pieces of equipment. And data on recurrent problems and other issues contained in an aftermarket service management tool needs to be easily funneled back into the design and manufacturing systems.

Role of Service Oriented Architecture (SOA)

Because of the intensified communications requirement and increased rate of change inherent in this new Project Economy, applications are undergoing an evolution from the monolithic blocks of code that typified 20th Century software toward completely modular and flexible applications based on service-oriented architecture.

SOA essentially implies an application architecture made up of loosely coupled "services," such as the various software features used in creating and processing a

customer order), and service “consumers,” such as the other services that need to create customer orders. Most business software applications can, of course, create customer orders. But a business application made up of services makes it easier to rearrange the processes that create the need for a customer order and determine how that customer order is created. This process tends to be very rigid in non-SOA applications.

An SOA-based application architecture works in much the same way as your Web browser in that it accesses functionality through the Internet. Regardless of whether you are using Internet Explorer®, Netscape®, FireFox® or Opera, or what version of those browsers you are using, you can still access information and interact with systems on the Web. The relationship between your browser and Web sites, databases, Java™ applets, and other executable files on the Internet is loosely defined. Web site functionality may change without affecting the rest of the Web or your browser.

The loose coupling of services and service consumers in SOA facilitates change, allows disparate applications to talk to each other and allows customer and supplier portals to be opened up to virtually any portion of an application. But SOA obviously needs to be supported by a fine grain set of application functionality. Without this granularity of functionality, an application will offer only a small number of software services, and its ability to adapt to change – and reveal new services and connections within the application as needs change – will be limited. This is where the use of software components in application design becomes important.

In the early 1990s, while everyone else was offering monolithic, one-size-fits-all enterprise software, IFS pioneered enterprise software based on an object-oriented, or component-based, model. This allows for the building and deployment of applications on a very modular level.

SOA facilitates Project Economy business models in that it enables:

- **Many flexible points of integration.** A true SOA will offer the ability to open Web services – or points at which data and functionality can be made available through an Internet protocol (IP) address – throughout the application. This means it is easy to open the application up to companies up and down the supply chain through direct integration or Web portals.

- **Distributed systems.** In an SOA-based application, functionality can be spread across multiple geographic areas. The application consists of thousands of software components, each with their own IP address so they can be accessed through the Internet. Therefore, tying together processes undertaken in remote locations becomes easier.
- **Open systems.** Combined with open standards, SOA enables data and business processes to cross organizational boundaries. Standards exist already for some business and manufacturing processes, but in the meantime, some point-to-point integration is required to get data to flow in real time up and down the supply chain.
- **Constant change.** A single enterprise might run multiple projects for multiple customers, and those projects come and go. That means an enterprise application must now be quickly and easily reconfigurable, easily repurposed for changing needs on a continuous basis.

The arrival of the Project Economy must be recognized by successful business leaders, and the systems that support business must change to accommodate these new realities.

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Mitch Dwight is the Chief Financial Officer at IFS North America. Dwight has an in-depth understanding of the enterprise applications industry, having previously worked as a business solutions consultant for IFS as well as Cincom Systems in both the United States and the UK. Throughout her software career, Dwight has been involved with companies with heavily engineered products and has been on the front line of the Project Economy revolution. Dwight has also worked in corporate accounting for a UK accounting firm and graduated with honors with a degree in accounting and finance from the University of West England.

About IFS and IFS Applications

IFS (XSSE: IFS), the global enterprise applications company, provides ERP solutions which enable organizations to respond quickly to market changes. The solutions allow resources to be used in a more agile way to achieve better business performance and competitive advantage.

Founded in 1983, IFS has 2,600 employees worldwide. With IFS Applications™, now in its seventh generation, IFS has pioneered component-based ERP software. The component architecture provides solutions that are easier to implement, run and upgrade. IFS Applications is available in 54 countries in 20 languages.

IFS has over 500,000 users across seven key vertical sectors: aerospace & defense; automotive; high-tech; industrial manufacturing; process industries; construction, service & facilities management; and utilities & telecom. IFS Applications provides extended ERP functionality, including CRM, SCM, PLM, CPM, enterprise asset management, and MRO capabilities.

If you need further information, e-mail to info@ifsworld.com, contact your local IFS office or visit our web site:

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