The Complex Enterprise

There are two types of complexity in any organization. Use one to your advantage, and completely eradicate the other.

WHITE PAPER

Cincom In-depth Analysis and Review

SIMPLIFICATION THROUGH INNOVATION®

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Executive Summary

Do you consider your organization to be "complex?" You may be surprised to find that what you may perceive as routine, others may consider to be quite complex. In fact, complexity has two sides to it. While some may judge it to be "bad" at all times, complexity actually has a beneficial side—if you know how to use it to your advantage.

This white paper defines complexity (good and bad) and includes a checklist of seven "Ps" to help you identify whether or not your organization is considered to be a complex enterprise. It discusses the top strategic challenges of enterprise customers and what actions you should be taking to address complexity in your organization.

Complexity—It's a Beautiful Thing

Before we define and discuss the Complex Enterprise, let's define the term "complexity." Complexity is really the fusion of three things:

1. The number and variety of components, systems and people within a company and across its entire value chain
2. The interrelationships among all of them
3. The pace at which 1 and 2 are changing

Thus, overall complexity continues to increase exponentially as we add more components, systems and people to the mix.

Complexity is also a relative concept, and what may be complex to an individual, team or company may be perceived as routine by others.

People generally have the perception that any kind of complexity is bad, and they should do whatever it takes to eradicate it. Like two sides of the coin, there are also two sides to complexity, i.e., good complexity and bad complexity. Good complexity, in fact, improves business performance and contributes to your sustainable competitive advantage (making it hard for competitors to replicate your success). Bad complexity, on the other hand, increases costs, destroys value and compromises your customer experience. Thus, complexity (at least the good type) is a beautiful thing—otherwise we would all be making minimum wage! Of course, good complexity over time may turn into bad; therefore, complexity should be monitored and managed on a proactive basis.

How can you distinguish between good complexity and bad complexity? The answer lies in customer value creation. Ask yourself the question, "Does this complexity add to customer value or subtract from it?"

Simplicity Partnership performed the first-ever scientific study of complexity within the Fortune Global 200. Their research concluded that the 200 biggest companies in the world are losing an estimated 10.2% of their profit (EBITDA) as a result of the bad (value-destructive) form of complexity. That is, $1.2B of lost profits on average per firm and over $237B across all 200 firms.

According to Bain & Company's research on 110 companies in 17 industries ranging from cosmetics to aerospace and medical equipment to mutual funds, companies with the lowest rate of bad complexity grew 30 percent to 50 percent faster than their average competitors. According to McKinsey, the best companies (those with a complexity management focus) are two times as likely to be a top service performer and two-and-a-half times as likely to be a top inventory performer. The best companies additionally manage to keep the cost of this additional flexibility under control.

Figure 1. Source: Simplicity Partnership (used with permission)

According to Simplicity Partnership, the following are the top 10 drivers of internal complexity prioritized from low to high based on the Complexity Impact Score.

The 10 Biggest Drivers of Internal Complexity

Complexity Impact Score = level of complexity caused by this driver multiplied by the impact it has on performance

Figure 2. Source: Simplicity Partnership

The Seven "Ps" of the Complex Enterprise

Now that we understand what complexity is, let's define the Complex Enterprise. A Complex Enterprise is any company that is grappling with a very high level of complexity in the following seven areas:

1. **Periphery** – The external drivers such as government regulation, economic turbulence, globalization, hyper-competition, war, terrorism or things that are simply beyond the company's control
2. **Planning** – The complexity of strategic choices and decision-making in terms of:
   - Who (resources)
   - What (to do)
   - When (to deliver)
   - Why (it matters)
   - Where (to focus) and
   - How (to win) in the dynamic marketplace
3. **People** – Complex behaviors and relationships among people (i.e., customers, suppliers, employees) due to a highly iterative and collaborative engagement model
4. **Processes** – High complexity of the underlying business processes, manufacturing operations and regulations spanning the global supply chains
5. **Products** – The complexity resulting from the size of the product portfolio, diversity of customer demands and development of new products based on engineering styles of Configure-to-Order (CTO), Design-to-Order (DTO) and/or Engineer-to-Order (ETO)
6. **Projects** – High amount of engineering cost and effort in design, development and installation requiring selective project segregation of the entire value chain—from proposal and contract management through supply-chain and project performance monitoring
7. **Pricing** – High complexity due to multiple pricing models, pricing schedules and discount structures

Figure 3 demonstrates the interplay among the seven "Ps" thus capturing the essence of a Complex Enterprise. Each Complex Enterprise is different in terms of their top challenges and industry affiliations (e.g., Aerospace and Defense, Industrial Equipment and Machinery, Government Contracting, Engineering and Research Services, etc.). However, at the end of the day, their success is primarily driven by alignment of their business strategy with business processes (execution).

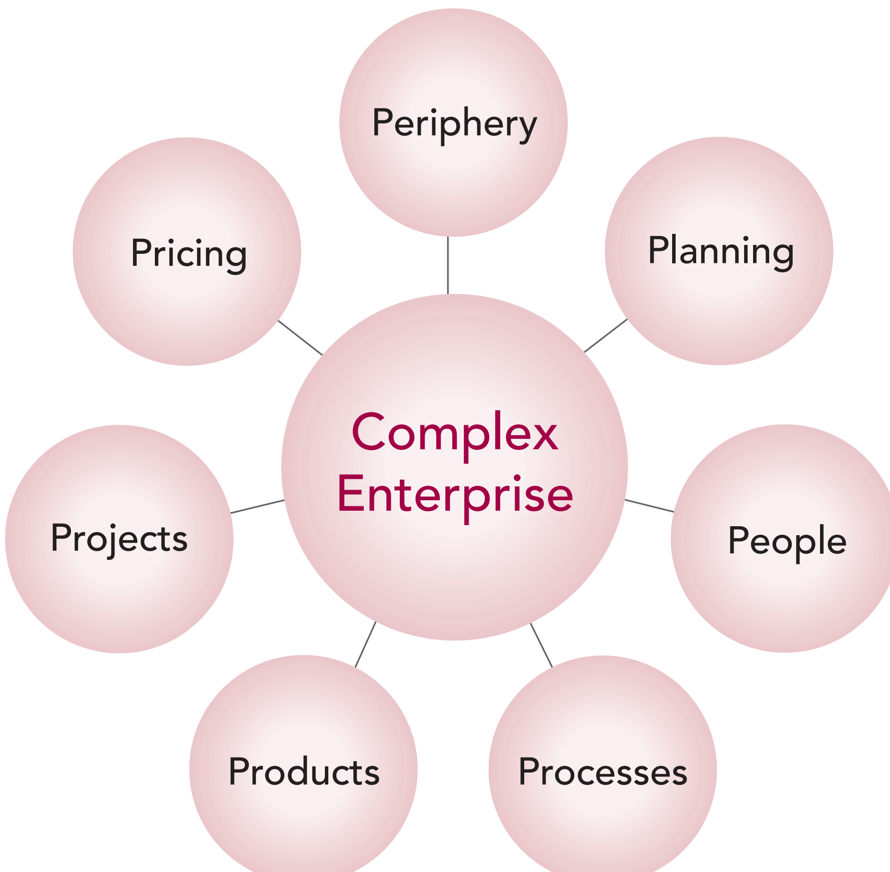

Figure 3. The Interplay among the Seven "Ps"

Six Strategic Challenges

Based on Cincom's deep domain expertise within the Complex Enterprise, we categorize the top six strategic challenges of enterprise customers into six primary areas. These six areas represent the enterprise pillars that cut across the entire value chain of a complex enterprise (as shown in Figure 4). Let's discuss the specific pain points within each of these pillars.

1. **Business Performance Management** – Enterprise-spanning information analysis, simulation, projection, roll up, reporting and actionable intelligence

   a. Decisions made with incomplete, contextually relevant information
   b. Business conducted based on unstructured information
   c. Data outside business is unstructured and defies categorization by company taxonomies or data structures

2. **Contract Lifecycle Management** – Proposal generation, cost estimating, configuration-to-order and contract administration

   a. Significant rework on configure-to-order, design-to-order and engineer-to-order proposals and contracts
   b. Direct impact on sales due to inaccurate and slowly developed proposals and contracts
   c. Proliferation of engineering change orders with sales customizing products for customer needs

3. **Product Lifecycle Management** – Product and process structure control from new product introduction through production, aftermarket service and disposal

   a. New product introductions are often delayed, losing up to 70% of the potential revenue that could be achieved
   b. Lack of coordination over product revisions leads to Engineering Change Orders (ECOs) and Engineering Change Notices (ECNs) becoming the only way to customize products
   c. Product lines lack consistency, compatibility and integration across generations due to the lack of defined parameters, date and unit effectivity and product revision control

4. **Program Management** – Project cost, schedule and risk management integrated with performing organization processes, data and metrics

    a. Unable to provide a seamless, one-stop-shop "information set" for all project performance information: budget, actual, EAC, earned value, billing, contract value, funding, revenue/cost of sales/margin, inventory and cash flow by contract/project (with drilldown to source transactions) across contract/project revisions
    b. Difficult to comply with complex regulations without cumbersome bolt-on systems for billing, funding, lot/serial trace, etc.
    c. Obscured cost/profit visibility by contract change and insufficient project change-approval control

5. **Project-Based Supply Chain** – Project-segregated production, supply chain, inventory integrated with project cost and performance control

    a. Difficult to maintain synchronization between project and production schedules and scopes of work resulting in cost delays and project overruns
    b. Inability to easily group or pool supply orders (manufacturing and purchase) to achieve economies of scale while ensuring accurate cost by project
    c. Unable to cleanly segregate production planning, execution, control and procurement activities by project and flow down to contract requirements

6. **Service Lifecycle Management** – Aftermarket maintenance, repair and refurbishment services for long-term, original equipment assets

    a. Inability to manage complexity of warranty management where units of measure vary (number of cycles, hours of service, take-offs/landings)
    b. Manual, error-prone, work-authorization process regarding repair tasks and skill-set requirements
    c. Inability to accurately plan replacement and spares coverage

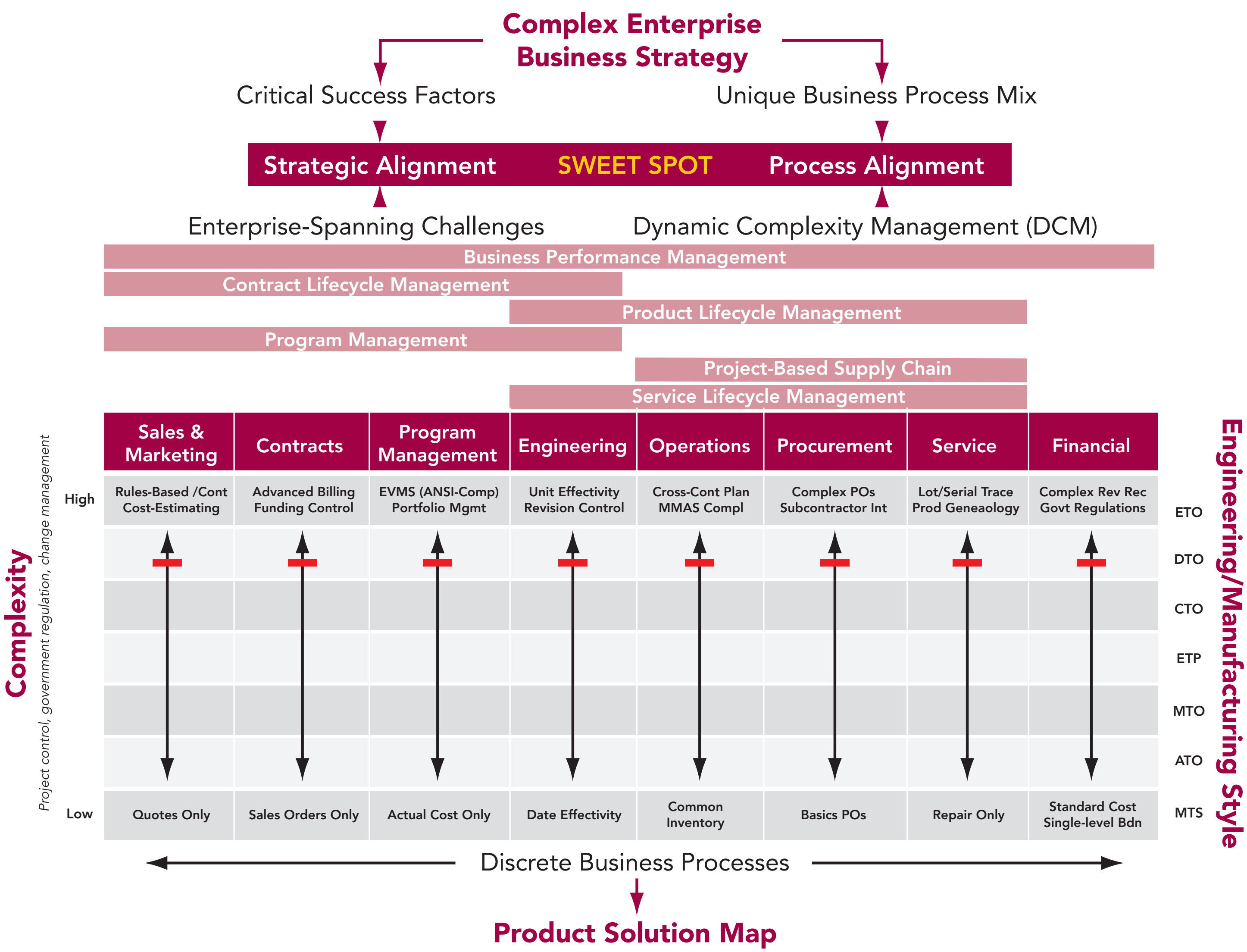

Figure 4. The Six Strategic Challenges of the Complex Enterprise

What You Can Do to Address Complexity in Your Organization

It is obvious that some Complex Enterprises are managing these challenges and complexities better than others. In order to provide a standardized framework, Simplicity Partnership defined the "Simplicity Matrix," which divides companies into four main typologies depending on their levels of complexity and their profit performance (EBITDA).

- **Performers** (top of the "good complexity" performance curve) – These companies are performing strongly without over-complicating their businesses. See Figure 5 for the key challenge for this type of company.
- **Simplifiers** (bottom of the "good complexity" performance curve) – These companies have very simple business models but are not delivering high profits. See Figure 5 for the key challenge for this type of company.
- **Complicators** (top of the "bad complexity" performance curve) – Some of these companies are performing well despite high complexity levels. However, all complicators are losing some profit due to bad complexity. See Figure 5 for the key challenge for this type of company.
- **Strugglers** (bottom of the "bad complexity" performance curve) – These companies are struggling to manage very high levels of complexity and are losing significant profit as a result. See Figure 5 for the key challenge for this type of company.

Although the model is based on data from the Fortune Global 200, any company can be added to the matrix. In doing this, you can understand where you are on the complexity curve and what actions you should be taking to address complexity in your organization.

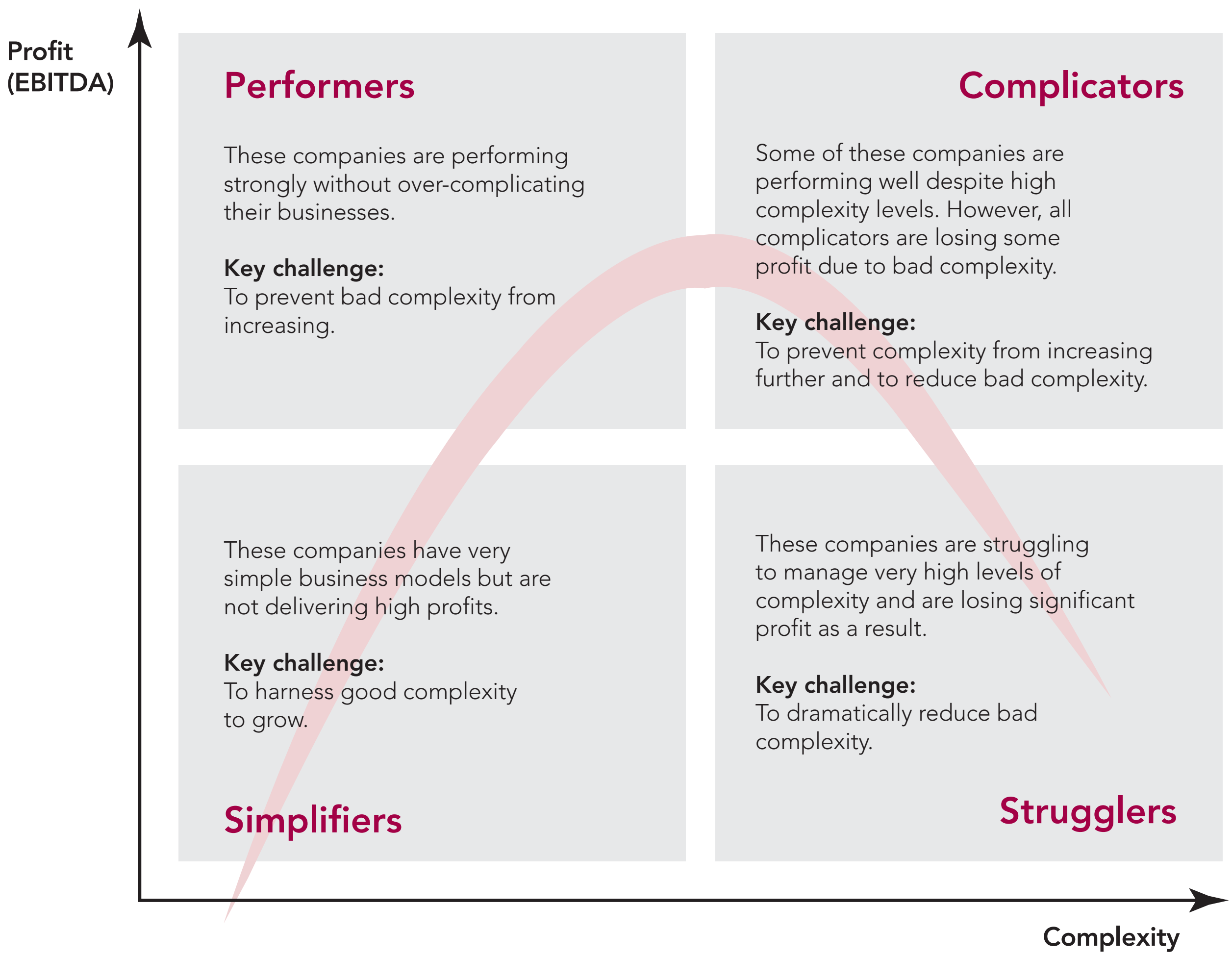

Figure 5. Source: Simplicity Partnership

Dynamic Complexity Management

At Cincom, we have built a stellar reputation of transforming complex enterprises into dynamic businesses. Dynamic businesses are new breeds of fearless organizations that are operating at the speed of thought; constantly anticipating and embracing change while seeking sustainable competitive advantage. For over 40 years, we have helped scores of companies manage and execute their complexity to perfection, thus making them top performers in their respective industries.

"Dynamic complexity is seen in situations where cause and effect are subtle and where the effects over time of interventions are not obvious. The real leverage in most management situations lies in understanding dynamic complexity."

– Peter Senge, author of "The Fifth Discipline"

To drive and thrive in today's global, hyper-competitive and turbulent markets, enterprises must embrace good complexity, which provides winning customer solutions and resilient operations. They must also eradicate bad complexity that leads to inefficiency and lower profitability. This flexible, fluid and flawless execution of complexity across your entire enterprise and the value chain is called Dynamic Complexity Management (DCM). DCM needs to be a critical component of your business strategy from the outset (see Figure 4) and not an afterthought. DCM will help you fix the biggest profit drains in your business and in the process, successfully transform your business.

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Bottom line

The dynamic orchestration of complexity, that is executing good complexity to perfection and eradicating bad complexity to extinction, will deliver quantum gains for your business.

About Cincom

Since 1968, Cincom's problem-solving software and services have helped thousands of companies worldwide grow and transform their businesses. Manufacturers who partner with Cincom have gained a 30:1 return on their investment and double-digit increases in profitability.

For more information about Cincom's products and services, contact us at 1-800-244-6266 (USA only), send an e-mail to: control@cincom.com or visit the company's product website at: **erp.cincom.com**.

Make sure to request a free consultation to learn how you can reduce risk, make your business processes more efficient and define a plan to move your enterprise securely into the future at: **erp.cincom.com/resources/consultation/**.