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ERP SYSTEMS AS CAPITAL EQUIPMENT

Following a recent SME (Society Manufacturing Engineering) plant tour, an executive for a high-technology company in the early stages of evaluating a different ERP system, asked, "What software package do you recommend?"

My response was the same given numerous times. "Your question addresses the solution; first you must define the problem."

It is easy to think about software when performing an ERP investigation, but the right solution for one company may be wrong for another, even if the two companies are outwardly similar.

The decision to purchase an ERP system is a major decision, and the process needs to be elevated to the appropriate level. It is a capital investment, and requires all the due diligence

afforded to the purchase of an expensive multi-axis milling machine. It is strategic, requiring advanced knowledge of the business direction.

Our book, [ERP Lessons Learned-Structured Process](#), written because I was tired of watching American businesses make the same mistakes with ERP, presents a top-down methodology starting with business assessment and strategic planning. Even today, fifty years after the introduction of ERP, Panorama Consulting reports that based on their survey, 21% of systems installations are failures, while 31% of enterprises admit they selected the wrong solution. <http://panorama-consulting.com/key-findings-from-the-2015-erp-report/>.

As a former manufacturing manager working for a large company in a mature industry, and accustomed to well-researched and well-managed capital projects, I started this newsletter assuming most enterprises followed the same pattern. The subsequent research proved this true in some ways, but wrong in others. One discovery was that other capital projects might actually suffer higher project failure rates than ERP. <http://ww2.cfo.com/risk-management/2014/06/why-big-projects-go-bad/>.

It is an interesting paradox. When an organization, e.g. manufacturing, experiences throughput, cost, or quality constraints, and decides to invest in capital improvement or equipment, they look at more than functionality. Additionally, unlike most ERP projects, they analyze the over-all effect on business strategy and the marketplace impact. The second significant difference is the greater focus on Return on Investment (ROI).

Enterprises often take a different approach when acquiring an ERP system, treating it more like an expense than a capital investment. Perhaps the reason is that equipment is hard, real, and visual, while information processing is intangible. In either event, companies seldom acquire a piece of capital equipment and restructure the entire operation of the business around it, *unless they do it by design*. It makes little sense to buy an ERP package and change your entire business to accommodate it *unless it is by design*.

I reached a troubling conclusion from the research and writing this paper. Business enterprises need to approach capital investments using far more demanding due diligence and professional processes.

The problem for any type of capital project is the digital disruption. It is changing the game and the rules, and options proliferate. Equipment and software lifecycles are short. Automation is replacing labor. Business applications are moving to the cloud. The job market has become volatile and global competition is intense. The Internet of things (IoT) is connecting "everything, to everything." The need for super-fast highly accurate information increases exponentially as competitors aggressively use technology to gain competitive advantage. Surprisingly, many companies have still not defined an overall information strategy. Getting everything pulled together in a constructive way is a huge challenge.

In the book, [ERP-Information at the Speed of Reality](#), one chapter was devoted to defining company profiles, and matching systems functionality to those patterns. Following is a short list

of questions for companies considering major capital investments, machinery, software, or Lean programs. It is also useful for companies that are reassessing their strategies. The thought process, if not the specifics were from Top Management Strategy-What It is and How to Make it Work, by Benjamin B. Tregoe and John W. Zimmerman.

Assume a five-year life cycle, ask some questions, and view the business from a different perspective. Each of these points requires a specific approach to ERP functionality, but is useful for understanding all capital investment projects.

Business type

- Manufacturing
 - Assembly
 - Fabrication
 - Multi-plant
- Distribution
- Health care
- Construction

Driving Force-Top Management Strategies, Tregoe, and Zimmerman

- Technology
- Products offered
- Market needs
- Production capability
- Method of sale

Business type (APICS)

- Engineer-to-Order (ETO)
- Build-to-Order (BTO)
- Assemble-to-Order (ATO)
- Make-to-Stock (MTS)

Fulfillment structure

- Vertically integrated (manufacturing)
- Horizontal (primary reliance on supply chain)
- Hybrid vertical and horizontal structures
- Domestic

- International

Based on the preceding, answer the following questions

- What must we do differently to survive and grow in this disruptive environment?
- What are the opportunities and risks, and how much time do we have to deal with them?
- How do we have to think differently about our company?
- How do we do business?
- How will the disruption change our products?
- How will the disruption change our markets and marketplace?
- Do we change how we go to market?
- Do we change how to fulfill demand?
- Is evolutionary improvement sufficient or are the disruptions indicating a need for more transformative processes?
- How will all of these issues affect the project requirement?
- Do we have multiple business profiles, are they in transition, and how does this affect the project requirement?
- Are innovation efforts sufficient - can we optimize the performance of our new system?

These are enormously important questions and the strategic factors influence the type and nature of the capital product, and the relational effect. Many companies are unaware of their profile and the significance of its perspective. Given these answers, and the digital disruption, how will the business change? What are the information products needed to manage the business given the speed of change? If you don't know where you are going, how do you know what ERP solution or machine will get you there?

The following charts illustrate a structured process. The first one is the decision process, the second a project flow chart. Due diligence is the first step on both. Skipped or poorly performed due diligence is a major contributor to project failure.

ERP Lessons Learned - Structured Process

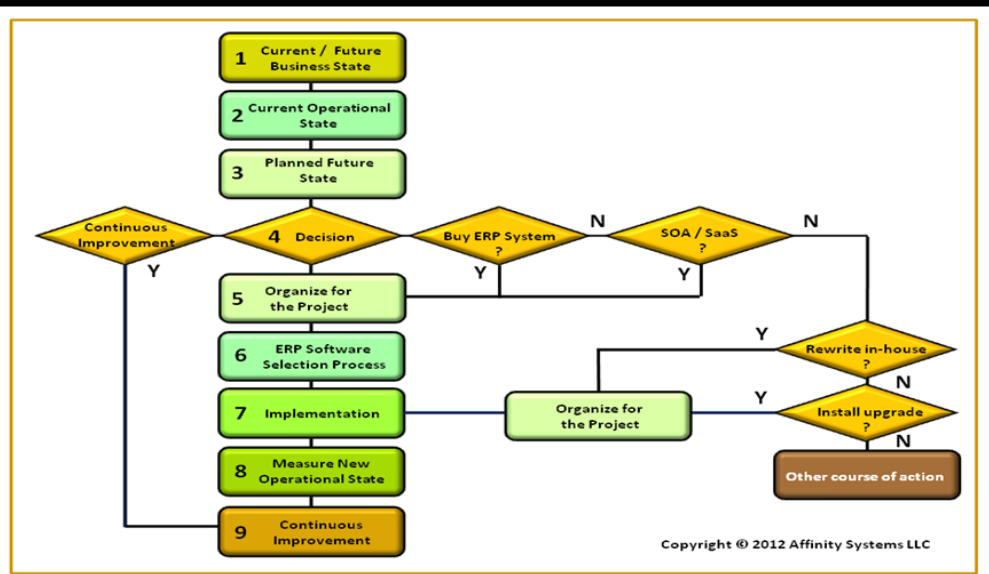
Decision Process – Page 12



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ERP Lessons Learned - Structured Process

ERP Project Chart – Page 17



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These illustrations are from our ERP Lessons Learned - Structured Process presentation, available free at http://competitiveamerica.us/publications/LL_PRESENTATION_for_WEB.pdf
This is the training summary for the highly detailed book.

Last month's newsletter, titled Shop Floor-ERP, provided a quick test to see if your system is broken. If your business failed, or you already know a new system is required, please start with strategy and business needs assessment. This process will define the required systems functionality and provide the knowledge to match the software solution to the needs of the business.

I am compelled to belabor the point. Most ERP projects fail because due diligence was bypassed or improperly conducted. Poorly defined top-down and operational business requirements turn software functionality matchups into crapshoots. In these cases, the odds are against successful implementations.

Our new book, Decision-making in a Disruptive Reordering, emphasizes the need to make knowledge-based decisions. Without due diligence, there are insufficient verifiable facts. Without facts, decisions are based on assumptions and opinions. It is no fun trying to explain costly failed capital projects to executive management, board of directors, ownership, or investors.

Good luck on your implementation, but remember, luck favors those who take the time to do projects systematically.

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