Evolving Technology and the New Risk and Reward Picture in Information Systems, Part I

Description

I have written in past posts about the need to apply a risk-adjusted approach to managing information and communication technology (ICT). The focus I have advocated, and continue to, employs a risk/reward model to specify how much discipline, with its attendant time requirements and costs, to employ to inform how companies should manage their governance processes, initiative portfolios and projects.

To a greater or lesser degree, proportionality has always been a characteristic of appropriate governance. After all, itâ€™s not worth spending $1,000 to avoid a $100 loss. In the early days of information technology and business systems, building, operating and maintaining systems was so laborious and expensive that making mistakes was inordinately costly. The traditional waterfall approach (Discovery, Requirements Specification, Design, Build, Test, Operate, Enhance/Modify . . .) fit reasonably well with the risk-avoidance model ***but only when requirements were well-understood and didnâ€™t change throughout a projectâ€™s lifecycle.*** Among the things that drove concerns was the basic truth that:

The earlier in the development process that errors or omissions occur and the later they are identified, the more expensive they will be to address.

Whatâ€™s Different Now?

- The value proposition for systems has changedâ€”smaller and startup companies have access to application systems that can be every bit as capable as those of larger, established companies. The ability to compete simply on the basis of being able to enable strategies and processes when others canâ€™t is pretty much over.
- SaaS is obviating the need to even build or own application software. It makes automation available on a metered, pay-as-you go basis, vastly reducing the cost of enabling business capabilities.
- Cloud-based infrastructure is eliminating the competitive value of maintaining private infrastructure. Its flexibility and scalability makes its value proposition particularly compelling.
- Service-based architectures are making plug-and-play, as envisioned years ago, a reality. Todayâ€™s applications are composed of innumerable integrated components, which may be open source or acquired cost-effectively from many individual vendors.
- Containerized deployment (such as Docker-enabled software) is erasing many issues relating to vendor-specific platforms. Almost everything runs on UNIX or one of its variants, these days.
- Data integration and component interoperability are now much simpler than they ever were. Networking standards, NoSQL databases, cloud architectures, containerized software deployment and microservices architecture obviates a lot of the need to implement specialized utility products and infrastructure just to move data between or among various siloed applications.

- Continuous Integration/Continuous Delivery (DevOps) approaches make iterative development and enhancement much more viable than it was when IT projects were, well, projects. Now, the application components associated with a particular set of features or functions that may need to be changed are easily identifiable and independent enough of one-another that parallel revisions, testing and re-integration can be performed rapidly and reliably.
- Artificial Intelligence (AI), Machine Learning (ML) and Deep Learning (DL) are going to change everything. A lot of the showy applications, like driverless vehicles, are what the public sees but more subtle applications will become a part of our lives with little visibility to most of us. Short-circuiting the part of application systems that produce data in human-consumable formats simply so that it can inform human decision-making will change a lot about how applications are built. Because they donâ€™t require operational interfaces and life-support systems for pilots, unmanned Aerial Vehicles (UAVs) are much cheaper to produce than piloted aircraft. Similarly, the ability to obviate a lot of human interactions (and account for the errors attendant with them) will change the functional profile of many applications and the roles of people that interact with them.

Whatâ€™s *Not* Different Now?

- Enterprise Architecture (EA), with its focus on correlating strategy with enablement hasnâ€™t gone away. A common failing of many ICT shops has been a focus on tools and techniques to the detriment of business alignment. **What** (business strategy, business models and capabilities) must always drive **How** (which tools and approaches should be employed and what to outsource to enable the business.) It has been my experience that when **How** precedes **What**, failure ensues.
- Master Data Management (MDM) is still a concern. Ontologies, Taxonomies and common entity identification standards are the backbone of data integration and Business Intelligence. Having separate customer-numbering schemes across business units or similar issues in other areas is anathema to managing information and enabling and supporting decision-making.
- Organizational issues are still issues. Everyone wants to steer the bus and change often enhances the importance of some roles while diminishing that of others. The rate of change in technology and business models is only increasing and it will be impossible to respond without developing the ability to manage rapid organizational transformation and realignment in parallel with implementing the changes that adopting evolving technologies requires.

So, What to Do?

- The rate of change required for companies to maintain competitiveness makes it impossible to do EA at the level of granularity that many practitioners have traditionally targeted. The â€˜boil-the-oceanâ€™ approach is simply not responsive enough. What I have referred to as Minimum Viable Enterprise Architecture (MVEA) and Just-In-Time EA (JITEA) are crucial for maintaining the alignment between What and How at speed.
- New approaches to governance and initiative funding are required.
- Adoption of CI/CD development approaches is required. Project Management Offices (PMOs) need to be rethought.
- Organizational design will need to be rethought and transformation capabilities developed and/or enhanced. Fluid roles and responsibilities will be the norm in the future.

- Plan, Plan, Plan. Establishing a multi-disciplinary planning group charged with evaluating current and future states is a critical requirement. While planning efforts are likely to miss many marks, a group dedicated to them is a must-have. I feel obligated to close with a famous quote on the subject from Dwight Eisenhower:

  In preparing for battle I have always found that plans are useless, but planning is indispensable.

Date Created
2019/01/19
Author
howardmwiener