Measurably better

White Paper

The Tao of Technology

Why I.T. systems fail, why people fail, and how the two can succeed together.

By John Kolm, CEO

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Executive Summary

This White Paper addresses the commonest performance objectives and system and project features generally required for large government and commercial I.T. projects, and makes some suggestions for better project specs and RFQs. Particular emphasis is placed on the critical importance of matching human dynamics with technical functionality, and on proven performance risk mitigation strategies which we recommend for any large I.T. project.

More

The two biggest problems in government and industry are overwhelm and measurement. There is far too much to do, with tasks constantly being added and seldom taken away; and it is hard – most of all in government – to measure the results of any work done. Faced with these pressures, it is only natural that new and complex systems are often seen as attractive solutions to impose order and measurability on the endlessly-changing picture. There is nothing wrong with this approach, and we all know that good organization of people, priorities, workflows and reporting is one of the most effective approaches one can take for good organizational results.

And yet, why is it that so many well-organized and well-intentioned projects fail?

Too often government is blamed, but there is no shortage of dramatic failures of the same type in private industry – especially in large organizations. When one of the largest building product companies in the world, CSR, introduced a new Enterprise Resource Planning (ERP) system to track their organization's daily activities, issues, goals, workflow and reporting, excitement and expectations were high. Four frustrating years later, because the staff was not skillfully engaged and the human factors were not properly integrated, the I.T. project itself was seen as a failure and was scrapped by the Executive Board of CSR at a cost of $70M.

In the same period, a very large car maker and client decided to implement SAP Release 2, a large ERP system intended to serve much the same function as the CSR system but on an even bigger scale. The system was implemented and was not scrapped as it had been for CSR, but it was also seen as a failure across the organization and many careers suffered as a result. The primary reason for failure was that the system was not adequately tailored to the business processes, so that even an (initially) keen and willing workforce was unable to extract great value from the new investment and faith in the system was completely lost.

When it came time to implement SAP Release 3 at this client a few years later, the problem had reversed. Having learned from past experience, the company now had an excellent grasp of its business processes and design needs, but owing to the well-remembered failure of SAP Release 2, there was no willingness by either staff or senior managers to engage. Some elements of the company, particularly sales elements who had a great deal of autonomy, actively resisted the project out of fear that the changes would all be bad. It was not until the firm engaged our company – Team Results USA – to oversee the cultural change, the consequent new team and leadership development and some executive and management coaching that the top leadership

of the car maker had sufficient faith in the outcome to green-light the project. In the event, the implementation of SAP Release 3 was seen as the most successful project in company history.

Systems like these and other large projects only work when the intellectual concept and the people engagement both overlap at the perfect "sweet spot". The three critical determinants of success in almost all projects involving technology and human beings are:

- **Budget**. Was the project completed within, or slightly below, the original funding?
- **Timeliness**. Was the functionality delivered by the assigned completion date?
- **Functionality**. In the assessment of top leadership, did the project meet both the originally-specified need and the current needs of the organization?

These three determinants are either satisfied or not by the interplay of **systems** and **people**. Paradoxically, it has been our experience over 20 years of assisting organizations with large I.T. projects that **systems** are often blamed for failures of **people** uptake; and that **people** are often blamed for failures of **system** performance. The logic is as follows:

		People	
		On board	**Not on board**
Systems	**Satisfactory**	Projects that finish on time, on budget and up to specification - and which continue to work after commissioning.	Projects that fail, primarily because the SYSTEMS are seen as having failed when the actual cause of failure is human passive resistance, failure of uptake, failure of understanding or failures of practical system usage and data usefulness.
	Inadequate	Projects that fail, primarily because the PEOPLE are seen as unable to perform, when the actual cause of failure is systems that make it impossible to cope or to keep up with expectations given the workload they have.	The status quo - nothing changes.

In the case of most large I.T. projects, the specific and stated objectives are very clear. Often listed after these objectives is a set of system features of interest to the project owner. The case for any of these features, or any additional features, should be that they promote one or more of the stated objectives in some way. An assessment of which features support which objectives, based on reliable teaming experience with top-ranked companies or Federal departments and reviewed by a team dynamics specialist with relevant qualifications and experience, is essential. A sample template appears overleaf.

Project

✓ - Will meet objective
? - May meet objective
✗ - Will not meet objective

Objectives - The system will enable the owner to:	Initially specified features						Suggested additional features				
	Example - Customizable web-based tool with secure environment	Example - Dashboards and cascading goals	Example - Support multiple business units with their own systems	Example - Milestone tracking	Example - Automated workflows	Example –Securely import and export data from other systems	Change management services	Team and leadership development	Executive and management coaching	Measurement of results	Visual process mapping
Example – plan workflow.	✗	✗	✗	✗	?	✗	✓	✓	✓	✗	✓
Example – Identify critical issues.	✗	✗	✗	?	✗	✗	✓	✓	✓	✗	✓
Example – Measure performance.	?	?	✓	✓	✗	✗	✗	✓	✗	✓	✓
Example – Provide scorecards.	?	?	✓	?	✗	✗	✓	✓	✓	✓	✓
Example – Generate reports.	?	?	✓	?	?	?	✓	?	✓	✓	✗
Number of objectives definitely met	**0**	**0**	**3**	**1**	**0**	**0**	**4**	**4**	**4**	**3**	**4**
Number of objectives possibly met	**3**	**3**	**0**	**3**	**2**	**1**	**0**	**1**	**0**	**0**	**0**
TOTAL OUT OF 5	**3**	**3**	**3**	**4**	**2**	**1**	**4**	**5**	**4**	**3**	**4**

Clearly, not all proposed project features need to satisfy every objective. Similarly, not every objective needs to have relevance to every proposed feature. However, the features requested in a final project spec should yield maximum payoff in synergies against the stated objectives.

We strongly recommend that, in any I.T. project, five commonly-overlooked features be added to the requirements. These are:

- Change management services
- Team and leadership development
- Executive and management coaching
- Measurement of results
- Visual process mapping (a method for capturing complex business processes)

All five proposed additions address the most common objectives in large I.T. projects, and in particular they balance and support objectives that may not be fully foreseeable in the original proposed features or which are addressed only in a way that has significant team dependencies and uncertainties. Taken together, the five proposed additional features cover by far the commonest reasons for compromised success on all I.T. projects, and thus will provide the project owner with a greatly reduced performance risk if included.

We also recommend that all I.T. project specs should set clear standards across these five additions, so as to eliminate much that is outdated, unoriginal, derivative, unproven in industry or government, or not able to offer reliable and historically provable measures of results. Specifically we suggest that an RFQ or spec could reasonably have standards in this area for:

- **Originality**. Insist that offerors of the five features listed above be able to demonstrate thought and practice leadership in the field, and not simply a rebadging and repackaging of old and hackneyed approaches which have been overtaken by modern science.
- **Credibility**. Insist that offerors have past performance in both government and industry which specifically refers the credibility of named staff they propose for the engagement. Contractors who do not have substantial track records of their own in leadership and successful project management – and not just in teaching and training – are in our experience not taken seriously by senior project staff, and are ineffective.
- **Results**. Include as an assessment criterion, heavily weighted, the degree to which you are convinced that the services offerors propose for these five features will lead to actual results in terms of risk reduction for budget, timeliness and functionality – rather than simply "looking good" through a focus on rhetoric, jargon, buzzwords and inputs.
- **Measurement**. Insist that offerors include a formal, well-provenanced, credible methodology and delivery for the measurement of achieved results in the five added areas which have a proven track record in I.T. project management that should be explicitly included as a part of the documented past performance requirement.

With these additions, you will have a world-class RFQ or specification document.

Conclusions

Large I.T. projects typically fail through inattention to human dynamics. There are many examples, of which we have cited only two that come from our own direct experience with large clients.

If you address these usually-neglected areas of performance risk, and also ensure that the technical aspects of your project are competently executed, the project will begin its life in the top five percent of all major I.T.-related projects worldwide. We urge organizations to set high standards especially in the areas of team development and group dynamics, where standards are usually low, and to demand the best that modern ideas and experience can offer.

Finally, we urge owners of large I.T. projects to consider either a small-business prime or a substantial weighting for partnerships including small-business, with their past performance carrying equal weight to that of the prime. Large businesses will in any case engage specialist small businesses for areas which require specialist expertise of the type described, so you may as well save on the overheads and reap the benefits directly from a partnership.

Client Annex

Government clients on which this White Paper is heavily based

DHS – Department of Homeland Security
DIA – Defense Intelligence Agency
DLA – Defense Logistics Agency
DOC – Dept of Commerce
DOD – Department of Defense
DOL – Department of Labor
DOS – Department of State
DOT – Department of Transport
EPA – Environmental Protection Agency
FDA – Food and Drug Administration
FEMA – Federal Emergency Management Agency
GSA General Services Administration
HHS – Health and Human Services
IG – Inspector Generals
NASA
National Guard
NGIA – National Geospatial Intelligence Agency
NIH – National Institutes of Health
NOAA – National Oceanic and Atmospheric Administration
NPS – National Park Service
NRC – Nuclear Regulatory Commission
NSF – National Science Foundation
Office of Medicare and Medicaid
OPM – Office of Personnel Management
OPM – EMDC – Eastern Management Development Center
U.S. Army
U.S. Treasury
USGS – U.S. Geological Survey
USMC – U.S. Marine Corps
USPP – U.S. Park Police
USPTO – U.S. Patent and Trademark Office

Commercial clients on which this White Paper is heavily based

AAMI
Alcoa
Araco
Autoliv

BHP Billiton
Cisco
CPA Australia
CSC (formerly BHP I.T.)
Daimler Chrysler
Ford Finance
Goldman Sachs
Hitachi
IBM
Johnson&Johnson
Macquarie
Michelin
OneSteel (formerly Smorgon)
Ord Minett
Pfizer
Polo Ralph Lauren
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Tattersalls
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Author contact details:

Email John.kolm@teamresultsusa.com
"Team Results USA" on Facebook
"teamresultsusa" on Twitter
Phone (+1) (202) 257 5593

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