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Getting from What, to How, and Back to What – Recognizing and Measuring Professional Diversity .

Or: The Other Side Of The SAS [1] / IT Shop

Alan Mann

Principal Consultant, Skyline Solutions

Martinsburg, WV.

In planning, developing, and implementing IT projects, technical and general business management professionals initiate their plans from 2 distinct communities of knowledge, the management and technical sectors, which need to communicate and maintain organization during the project. Brooks argues that while the producer and technical director role combined in the duties of 1 person might work in small teams of 3-6 individuals, persons with strong management and technical talent are “rarely found. Thinkers are rare, doers are rarer, and thinker-doers are rarest.”[2].

Argyris, while citing assembly line mentalities, proposes reactive behavior utilizing informal behavioral structures as a result of formal structures proposed by management, which could be explored as an underpinning of the proposed state of difference between managerial and technical groups. [3] Therefore, we would seek to define this break in communication as divided into psychological and professional differences within the IT enterprise, and how to use the degrees of difference to continually engineer a successful IT endeavor.

In other words: A technical professional by training and talent will seek to find the means to put a solution together, and a generalist will only want it to work. However, putting the 2 parties together could prove interesting, as the technical community takes what it perceives to be a good engineering solution, and frequently could deliver a prototype 180 degrees away from the intent of the client, or generalist.

Let’s take a further look at professions.

A profession differs from a trade, unskilled job, or hobby due to an act of faith. This does not presuppose a religious issue, but rather, a certain suspension of control, which needs to be ceded to a professional or team of professionals to get a task done. Usually, a second opinion is given by a doctor in a dire predicament; one usually takes what a doctor says as true based upon a system of certification and training that the doctor brings to the table. The same group dynamic must work for IT professionals, as technical expertise needs to be a requirement to be able to process a task via computing machines.

Cultures: This paper is not suggesting a tribal cult, but a working team of 1 or more individuals, which has a life of its own, either functional or dysfunctional. Each side, the technical and generalist could have such a structure.

On the technical side: certain interpretations of coding based upon experience and training could guide a solution to its conclusion, but is it correct?

According to Argyris, the divide between management and teams of workers is by nature a conflict between implied submission from management and reactive results from work teams. [4]

Lets get editorial!

We'll start with teams of workers, and role types that in the experience of this writer can develop in a work-team. We can classify most, but not all into 4 types.

Why only 4? We want to keep the discussion focused and brief, and not write a book.

Also, predispositions tend to cross into other types, so we could range each individual with proportions of each type.

Community 1 - Technical Sector:

1. The Engineer.

The Engineer is primarily a technician, who will seek to demonstrate an untiring resume of skills in an attempt to gain either dominance or silent control of the direction of a project. This is a highly skilled individual who keeps a lot of knowledge in the brain for every occurrence, and rarely trips or errs. Mechanics are sound, but occasionally tangential, and can become dangerous when assumptions of data are taken on faith. This individual believes him or herself to be management material, and writes code to impress and deliver results, but is best employed as a technical resource. A lot of novices are Engineers due to the orthodoxy taught academically, or to hide the lack of experience normally expected in the IT shop. Expect secrets.

2. The Explorer.

Attention may be deficit at times, but this individual is highly skilled. More gregarious than the Engineer, this type of technician tends to keep asking questions, or consulting books and articles for just the right code. Explorers tend to talk a lot, and deliver a lot of code that may not be entirely relevant to the task. Ten pages of code for a 5 minute ad-hoc might not be uncommon. Even so, this person tends to have an encyclopedic mind, and can be counted on to return a lot of utility based upon experience. Explorers can also be Veteran Hippies in disguise.

3. The Examiner.

This individual tends to be critical of others and him/herself. Enjoys audits and QA sessions, and is a natural here. The delivery of assignments is usually late, due to self-examination of every line of code. Harnessing this individual can be a challenge, and he/she usually gravitates to analytic manager roles, where people skills are lacking, but diagnostics are superb.

4. The Veteran, broken down into 2 sub-classes:

a. Warhorse

“We used to do it this way, and why change?” is the mantra of the Veteran. IT is constantly in flux, and therefore a danger to the Veteran warhorse, as this individual achieved most of his/her career advancement doing one or 2 skills really well, and continuing to maintain this skill set for the life of the environment or IT shop technology. Veteran Warhorses tend to be conservative in nature, and will usually sport political affiliations on their bumpers or rear windows every 4 years. They tend to miss punched cards, batch processing after 5PM, and IBM System 360 shops.

b. *Hippie*

This individual is a free spirit in Explorer’s clothes. Veteran Hippies go back to the golden days of computing, where anyone could learn to code and was put to work. They will write the most beautiful code, and take forever to compile it or tell you what it does. However, they are highly giving as repositories of arcane and unusually rare coding tricks, and therefore continue to exist in today’s market. They are the converse of Veteran Warhorses in their nature, being very liberal. They will walk ½ mile to the nearest recycling bin after the last drop of organic diet cola is consumed.

Community 2 - Business, or Management Sector Project Lead:

1. *Misplaced Techie.*

This generalist is not what he or she seems to be. One day, this person was an Engineer, the next, a lead, then a manager. However, only knowing and enjoying detail work, this business sector member micromanages and revels in minutia to a geometric degree. Analysis skills are brilliant, but were it not for the money, this person would most definitely be writing code and churning documentation.

Note: Does not work well with others.

2. *Politician, or, ‘Promote ME First’*

The panacea is here. All hail the lead who would be sovereign! You guessed it, this role is a given for anyone who might be a dreadful coder, insecure as an Engineer, fears becoming an Explorer, might do well as an Examiner, but is really at home kissing up to those with real offices. You can find this person scheduling meetings, asking for notes, haranguing technical resources, or calling for a tee time. This person loves to press flesh and self-promote, and can be useful as a presenter and narrator when pitching a new contract or assignment, but really doesn’t fathom any of the ‘how’ of a project, just the ‘what’, and any related edicts. Motto: ‘You’ve got to have friends!’

3. *Overworked Lead*

The closest role to a liaison described in extreme Programming. [5] This role understands how to communicate with the teams assigned to bring projects to completion. Therefore, the person best fitting this role is so good at what he/she does, that several projects are added to his/her plate. Many times, this is a communicative technical resource, with qualities of the Engineer and explorer. Could also have qualities of the Veteran. Works long hours, and tends to be motivated by positive movement through the PERT chart.

4. *Marketeer*

Similar to the Politician, but more skilled, and keeps track of the project, this role still has the hallmark of a positive thinker, and consummate salesman who always has an escape route, but lends more credibility to a project. Knows the ‘what’ inside and out, can converse a bit on the ‘how’, but generally more comfortable as a generalist and persuader. You never know how you stand with this person, but you always hope it’s positive.

We know the ‘what’ of this problem, which is, the 2 communities have to get along. The question, or ‘how’, is: how do we put these different personality traits in the same mix, and get a technology project to successfully finish?

Leveraging the personalities to the benefit of the whole organization would arguably be the key. There could be strength in diversity, and regarding world cultures, will become more of a factor of communication as more projects are cross-managed internationally within multi-national corporations and cooperative shops.

Arguably, then, qualities, or proportions of how the technician and lead fit the above roles will be key to a predictor or idea of the factors to encounter when planning and staffing a project, or, managing a continued effort already under way.

The conflict:

Technical and business liaison parties of project design within the information technology enterprise develop differing versions of community.[6] The focus on unified practice within the project appears valid strategically, but fails to appreciate the tactical differences between the 2 sides of project development. Overall, the strategic view presupposes a unified approach, given a single organization’s movement through time toward a goal driven by a business model. However, the above roles define a piece of the enterprise called the Project. The organization focuses on ‘What’. The conflict drives a wedge between ‘What’ and ‘How’. Reconciliation back to ‘What’ follows a successful conclusion, while permanent division between ‘What’ and ‘How’ would be failure.

Measurement:

The dynamics of these communities could be measured by probabilistic values based upon Brooks’ and others’ inputs for a programming organization, such as Brooks’ mission, managerial human resources, technical human resources, division of labor, schedules (time management), technology resources, and interface definitions among the roles. [7] The largest probability value could be the communication and organization quality attached to the aforementioned structure. Without communication to drive consequent organizational facilitation, the project fails. [8] Of exceptional relevance in 2005, as mentioned above is cultural diversity between business and technical groups. Especially significant are those involving off-shore outsourcing of technical competencies in addition to more culturally diverse work environments involving ethnic differences. All should also be measured based on research of cultural interpretations of technical tasks.

The effort, be it development, implementation, or proof of concept needs to be defined and utilized as an assumption that varies the effect of probabilities of the project’s different qualities.

Leverage:

Once measured via probabilistic metrics, a tool could be used to factor periodic changes to measure the propensity of success or failure in an on-going project.

A Bayesian formula ($p(a)*p(b)*p(c)..*p(n)$) could be a possible predictor of success. Research is needed to establish a predictor of success given relative degrees of measurement over the life of the effort. [9] Utilization of other statistical formulae as needed based upon discovery through research.

Therefore, the aim of this effort is to define the relationship between a business sympathetic IT liaison role, and the culturally different technical competency within an IT enterprise. This project based upon research seeks to measure and propose a propensity of bridging efforts (success) between the two communities, and relate by research degrees of success and failure, given the difference between supporters of 'what' and practitioners of 'how'.

Possible reconciliation:

The proposition of Extreme Programming [10] seeks to reconcile the above division with a representative project manager role within the technical group that performs the liaison role. This could be a step toward stakeholder reconciliation, but may not be the answer.

Normative group dynamics could prevent the liaison from becoming an accepted member of either business management or technical group, based upon the propensity of success, forcing bias toward either business management or technical teams.

Predictive / Preventive Conflict Prediction:

Is this dynamic measurable, or are there analogous spectra that could be used as predictors of success or failure before the project commences? The above Bayesian model seeks to define a predictive method of potential success, (the propensity of success), given the potential conflict between the 2 communities tasked with enterprise project. Different qualities in the mix could form a more perfect team or network of teams.

Conclusion, or, Are We There Yet?

Creating a liaison role able to co-exist within both communities is a challenge, but is it possible, or is compromise between the 2 communities enough to see a project to successful conclusion? Were Brooks and Argyris right or wrong? Can this propensity of success measure be used as a tactical tool of project management, based upon research into measurement of inputs for an IT project?

Are we wasting time with pre-measuring potential roles in a project, or have we always done this within the interview process?

Trade is predicated on different professions and vocations interacting for mutual benefit when one party sees an obstacle another is capable of surmounting. This is common knowledge, being the underlying reason for commerce within civilization. Scaling this relationship down to professions that interact during IT projects in corporate or government enterprises, with shared but conflicting interests, comprising differences in

views of ‘how’ and ‘what’ should be measured, and their potentials compared when designing a project. None of the above roles is in itself destructive, and arguably, all technical and general business communities could share various degrees of the defined role or personality types

Therefore, the diversity of human and economic factors leading to conflict within 2 communities comprising an enterprise need to be charted in a spectrum, or a predictor of risk (propensity of success) that could assist in planning IT projects.

Notes:

[1] Registered trademark of SAS Institute, Inc., Cary, NC. USA.

[2] Brooks, Frederick P., Jr. (1995). *The Mythical Man-Month: Essays on Software Engineering*. Boston: Addison-Wesley. p 80.

[3] Argyris, C. (1960) *The Impact of the Formal Organization upon the Individual*. In D.S. Pugh (Ed.). *Organization Theory*. (pp.261-277). Harmondsworth, Middlesex, England: Penguin.

[4] Argyris (1960). p 263.

[5] Retrieved 1 June, 2005, from: <http://www.xprogramming.com/xpmag/whatisxp.htm>

[6] Verna Allee, “Knowledge Networks and Communities of Practice”, *Journal of the Organization Development Network*, Volume 32, Number 4, (2000), p 5.

[7] Brooks. (1995). p 79.

[8] Brooks. (1995). P 74.

[9] Retrieved July 7, 2005, from:

<http://www.amstat.org/publications/jse/v3n3/albert.html>.

[10] Retrieved 1 June, 2005, from: <http://www.xprogramming.com/xpmag/whatisxp.htm>