

Project Shrink

The Linear Edition

Version 0.1
March 15th 2009
DRAFT

Bas de Baar

<http://ProjectShrink.com>
Bas@ProjectShrink.com

Legal Stuff

© 2007-2009 Bas de Baar
<http://www.ProjectShrink.com>

This book is intellectual property.

No part of this publication may be stored in a retrieval system, transmitted or reproduced in any way, including but not limited to digital copying and printing without the prior agreement and written permission of the author.

The author has made is best effort to ensure that this is a high quality, informative and helpful manual. This text is a recommendation only, the author cannot take responsibility for loss or action to any individual or corporation acting, or not acting, as a result of the material presented here.

Why A Linear Edition?



Bas de Baar, blogging as "The Project Shrink", is taking his message to the International Project Management community with a vengeance: "Projects Are About Humans, Now Deal With That!" Since 2007 he discusses on his blog Project Management in a global, mobile, virtual and multi-cultural world.

Hundreds of pages are available on his site, all in true web fashion: linked together in a non-linear way. His readers are sometimes lost in all the topics covered. Even Bas himself is once in a while a victim of this non-linearity.

With this ebook he provides a linear presentation of his blog postings. You could call it a book-format.

This is a work in progress. New postings will be added. Old material will be edited.

Visit his blog for the most recent version of this ebook.

<http://www.ProjectShrink.com>

If you have any questions, suggestions or other remarks, please drop a mail: Bas@ProjectShrink.com.

The Project Shrink In Me

Dear Craig¹,

Of course, we do need more than training alone to improve Project Managers and everyone else involved in projects. From the top of my head: "discipline". You can train as much as you like, but if you drop everything you learned the moment things are getting a little tough, there is no use. Especially in PM, it is tempting to cut corners on documentation, taking minutes and communication in general, when the pressure is on. But we all know that the first things we drop, were supposed to avoid the bad situation in the first place. So, if you ask me what more is needed, that would be my first answer.

I think the master-apprentice model you suggest offers a good solution. Project life is very suited for this concept. Lots of smaller Project Management tasks can be created to let the apprentices have a go at it. Supervised by the master of course. In my interpretation of this concept, the master works closely with the apprentice and supports him even with the nitty gritty of project details if needed. This is rather similar to the role of project strategist you are referring to. Although I imagine that the strategist is more likely a kind of senior coach to the PM and surrounding higher management. The essence being that these roles require a close and intense working relationship.

With a Project Shrink I was thinking more along the lines of relationship therapy. Without having all details, you can improve a situation by means of having guided counseling. "How did you experience this situation?" "What is your relationship with your mother like?" It can provide a needed "snap-out-of-it" moment for a PM (or BA). Reflection is not something that comes natural to all of us. We discussed earlier that cause-and-effect chains are getting complex, so someone to help you order your thoughts on any situation can be beneficial.

¹ Craig Brown writes a blog at BetterProjects.net. Craig and I are regular readers of each other's sites and we sometimes have a conversation from site to site.

The shrink wouldn't be closely involved with the project. He can stay within generalizations and is merely there to facilitate the mental juggling of the project people. Because of the generalization and relative distance between the project shrink and the project stakeholders, I think this could work perfectly in combination with Web 2.0 tools. Heck, this blog is my own personal reflection tool, so yeah, it can definitely work.

Cheers,

Bas

Chapter One

Introduction

Having It All: Cheaper Projects And A Sustainable Society

Wouldn't it be great if software projects are done more cost efficient? Products and services could be cheaper. Through some amazing coincidence companies want the same thing. And the current economic climate has made them more eager to do so.

For software projects, it's easy and obvious on how to become more cost efficient:

- Emphasize the Business Case (the goal of the project) so we keep on doing the right things, and perhaps avoid doing projects that are not worth doing in the first place.
- Use less overhead in projects, avoid unnecessary tasks. Keywords are lean, agile and value added.
- Utilize the global workforce to absorb excessive fluctuations in question/demand that drive up prices, tap into the global pool of better qualified people and reduce labor cost in general.
- Reduce commute time and office spaces by expanding virtual working environments.

Sadly, for some reason we find it hard to implement these things, find it hard to make it work.

To overcome communication problems associated with off shoring we mostly increase overhead. The social troubles associated with virtual teams, like lack of trust, are countered by increase of overhead.

Increasing overhead (tracking progress every minute, extensive reporting, micro-management, adding additional "control" personnel) seems to be our preferred solution.

Our preferred solution is making things worse. It increases cost. Heavily. With no benefit.

Suppose we can overcome the lack of trust and communication problems without relying on overhead... we would have a winner!

It will be cheaper. We increase flexibility through a global resource pool. We get speedy adaption through faster feedback and cultural diversity.

Going All Over The Place

Solving "people problems" we seem to have for ages, requires another perspective on the problem. We should be able to learn some new insights and tricks by taking a different road than "main stream" Project Management. If you keep on doing the same stuff, over and over again, you are getting the same results, over and over again.

What do I mean with "a different road"?

Buckle up Dorothy. We are not in Kansas anymore.

When you look at projects, you also have to look at the individual and the larger organization that surrounds the project. The three system interact. Panarchy (explained in detail in Chapter 9) provides us a wide angle lens to look at projects. Originating from socio-ecological field studies this powerful concept lets us capture the project, the individual team members and the embedding organization in one go.

The interactions between the different scales across a panarchy are important in respect to resilience. In terms of Panarchy, three elements are considered: the focal system (in our case "the project"), the higher scales (e.g. the company, or professional group, or society) and the lower scales (e.g. individuals or teams).

"The resilience characteristics of any focal system are in large part determined by the interactions of scales across this panarchy, from the focal system to coarser scales and from the focal system to the finer scales."

Resilience is the ability to handle disturbances of the focal system in such a way that the function of the system is not influenced. Resilience shifts attention from purely growth and efficiency to needed recovery and flexibility.

In the middle (the project) I will cover topics like:

- Leadership,
- Virtual team work,
- Information flow and feedback,
- Interactions between group members.

On the lower scale, the individual, I talk about personal development, from meditation to visualization to mental flexibility.

And finally, on the higher scales we should be concerned with:

- Sustainability on every aspect of our society and ecology
- Base-Of-Pyramid (BoP) approaches to wealth distribution
- Social impact of globalization

You see, I was not kidding when I said Kansas is a long way from here.

Chapter Two

Project Sociology

Projects are about people. It's the human element that determines the success or failure of this temporary organizational endeavor. In my book "Surprise! Now You're a Software Project Manager" I use this as the central point to explain to new project managers how to manage software projects.

The central argument goes something like this:

- The behavior of the project stakeholders determines the course of the project;
- Stakeholders are guided by their needs (their fears and wishes) in their behavior
- By examining the needs, expectations and behavior the PM can spot potential problems
- This examination provides the PM with clues which process component (method or technique) to use to resolve the potential problem.

In this way, there is a direct link between the social complex of stakeholders and the tools and techniques a project manager has up his sleeve. This subject not only consist of project management, but leans towards psychology, sociology, complex adaptive systems, social simulation and economics. There is a lot of research available, there is a lot of stories out there. Some of it in the context of projects, most of it in entirely different fields.

The real challenge lies within understanding the behavior of humans within the project context for which I coin the phrase “Project Sociology”. “Sociology is the study of the social lives of humans, groups, and societies, sometimes defined as the study of social interaction,”² according to Wikipedia.

If we have a better understanding of how people operate, and more important why, the how a project manager can throw its toolbox towards the stakeholders, will be the easy part. As in many situations: understanding is half the battle.

In this book I will use the term “stakeholders” very often. A stakeholder is anyone that has something to do or is somehow affected by the project. From users to sponsors, from testers to developers, from marketing to production. They all have one thing in common: their personal needs are affected by the project.

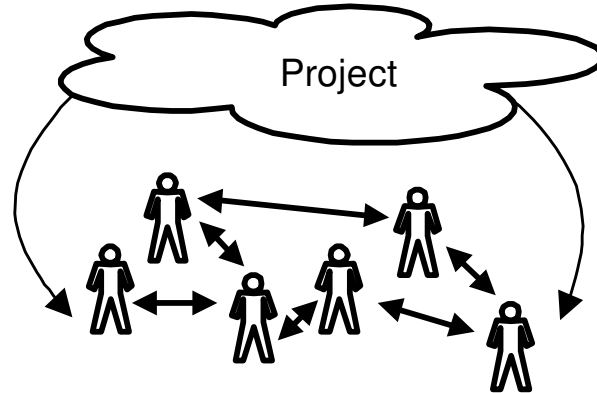
Projects As Social Interactions

Whatever your take is on projects, at the end of the day it is just a bunch of people working together to achieve a certain goal. During this endeavor to laugh, cry, pull pranks, play dirty tricks and have all other kinds of behavior towards each other. If you are lucky they even work to reach the final goal. If you take everything away, and put people in the center of what a “project” is, you will see a group of stakeholders interacting with each other; just like any other group of people would do.

Just to make things easier on our life, we call the result of all this behavior “the project”. In this sense it is nothing more than an abstraction. If we say the project is late, this doesn’t mean that some creature or entity from outer space showed up later than expected; it is the result of the project people working together that wasn’t finished on the time we predicted.

In this sense the word “project” is the same as “economy”. If our economy is improving, there is not some kind of energy force that is doing better than before. The whole system of people working, people buying and people living that is better off in some way than in the past. We need this kind of abstraction, just to be able to cope with it; it is easier to talk about the economy than about 100 million individuals. And the funny thing is that this abstraction influences the people that make up the underlying system; if the economy is doing better, people will spend more; if a project is late, people will work harder.

² <http://en.wikipedia.org/wiki/Sociology>



In the end, what is the role of the Project Manager in this context? He should steer the stakeholders in such a manner that the resulting behavior (the sum if you will) reaches the desired business goal.

With everything I will ever tell you, keep one thing in mind: it is a way of looking at things. It will never be the only way. So, it will never be the only truth, it may not even be the truth in certain situations. I will only show you ways to look at the project you might have never done before; to provide you with a different perspective that can be beneficial at a given moment while you are running your project.

For now I will use a very simple model of how stakeholders behavior is determined:

- Stakeholders have needs
- Based upon their needs and their perception of project reality they will choose a strategy that benefits them most.
- The execution of this strategy is their behavior.

Needs: What We Want

This is actually the 64 million dollar question: “what do people want?” Generally spoken, people will try to reach their goals, their desires, or try to avoid their fears come true. However, this can be so generic, I have to go one step back; people’s needs. The needs of humans is their ultimate goal that drives their actions.

People have physical or material needs, think about food, a roof above their heads, or may be some kind of transportation.

Although once in a while I will come back to this category of needs, they will not be my main focus. I assume that in the context of software projects, people are not dying of hunger or are homeless.

The center of my attention are emotional needs. To be more specific about this subject, I will make use of the following taken from Eqi.org³:

"In various degrees, each according to his or her own unique nature, we each have a natural emotional need to feel:

Accepted	Free	Productive/Useful
Acknowledged	Fulfilled	Reassured
Admired	Heard	Recognized
Appreciated	Helped	Respected
Approved of	Helpful	Safe/secure
Capable	Important	Supported
Challenged	In control	Treated fairly
Clear (not confused)	Included	Understanding
Competent	Listened to	Understood
Confident	Loved	Valued
Forgiven	Needed	Worthy"
Forgiving	Noticed	

In this section we will look at needs in which stakeholders measure themselves with other people. Their reference group. Software engineers tend to compare themselves with other software engineers, not only within their own company but also in a wider range, even internationally. Management members mostly compare themselves with other people within their companies hierarchies. Stakeholders use the reference group to formulate their own interests:

- "I want to earn as much as Big Shot Shirley".
- "I want to be as good as Leisure Suit Lenny."
- "I want to have more power than Head Honcho Harry."

The reference group is used in different ways:

- A reaction from the group can feed a personal need (think about recognition)

³ <http://eqi.org/needs.htm>

- Or as a yard stick, to compare a person's ranking (the need to feel important, the need to feel competent).

Ranking is a relative thing: the most important people don't have a need for being important, they already reached that level. It is the feeling of being *more* important the makes up the need.

People will look at their effort (what they bring to the table, hard work, good skills), and how their effort is rewarded. In this sense the reward is the fulfillment of an emotional need. They will compare their own situation with that of their reference group, persons that they consider comparable. If they think they are better off, there are just happy; if they think they are the lesser fortunate they can have several strategies:

Change their effort: Working less if they're not appreciated enough. So that the total sum of their effort versus reward in comparison is equaled out, or work harder if they believe better rewards will come.

Change rewards: If the rewards they were looking for, are not there, they can look for other rewards, throwing alternatives in the equation, like trying to get more money.

Sabotage: If the reference group is in their sphere of influence, they can try to sabotage their effort/reward sum, by undermining their position.

Bail out: People can just give up. Throw in the towel, sit silently in front of their computer screen, calling in sick or go looking for another job.

For example, take a developer looking on an internet site that contains job descriptions and salary indications. He will draw up an effort/reward equation and concludes that he is not appreciated enough. First he will try to work harder, under the assumption that the reward (appreciation) will go up. When that isn't the case he will ask for more money, trying to compensate with this reward. When he doesn't get a response on this either, he will probably bail out in some way or another.

Some management teams can have a resemblance with a monkey hill. Within corporate politics one person wants to have a larger power base than the other. Managers don't want to lose face among each other, because that would undermine the need to feel

respected and in control. So you can get a lot of sabotage or cloaking behavior like:

- Covering Up Own Incompetence
- Undermining Another's Reputation
- Attempt to Build an Empire within the Organization
- Attempt to Maintain an Empire within the Organization
- Attempt to Increase Sphere of Influence within Organization

When stakeholders are using the change effort / reward strategy most of the time the project manager can deal with it using motivational techniques. If people are bailing out, you have a problem, you have to reboot the stakeholder from scratch. And if you have a lot of sabotage-behavior, you better dig in deep for some heavy corporate politics.

Anticipation: What We Think The Other Want

In the previous section I used a very simplified model of how stakeholder behavior is determined. To this model I want to include the use of anticipated needs, strategies and behavior.

Your regular Joe doesn't jump off a cliff, because he expects that he will be dead when he hits the beach. A normal person will not slap a very huge and muscular guy, just because he assumes he will get his own butt kicked afterwards. In our everyday life, and in our project life, we are guided by our perception of what we think might happen, our expectations:

"An expectation is a conditional prediction about a future event whose fulfillment will be eventually verified and reacted upon by the agent who holds it." (Rovatsos, 2007 ⁴)

Expectations are also about the strategies of other stakeholders. When determining the strategy a person will weight in the expected behavior of others. This becomes obvious in the sample used in this section: the reluctance to commit to something.

A great way to illustrate this is by using a quote from Frederick Brooks legendary book "The Mythical Man Month":

"... the reluctance to document designs is not due merely to laziness or time pressure. Instead it comes from the designers

⁴ <http://homepages.inf.ed.ac.uk/mrovatso/papers/rovatsos-esb.pdf>, "Practical Social Reasoning Systems" by Michael Rovatsos

reluctance to commit himself to the defense of decisions which he knows to be tentative. ~By documenting a design, the designer exposes himself to the criticisms of everyone, and must be able to defend everything he writes. If the organizational structure is threatening in anyway, nothing is going to be documented until its completely defensible.”

If the anticipated behavior of others is threatening some of the important emotional needs of a stakeholder, he or she may choose strategies to avoid confrontation. In this situation we are talking about needs like:

- Recognition among peers and within hierarchical organization
- The threat of not being admired, appreciated or in control
- But also some material needs like fear of losing one’s job or not getting a raise.

The stakeholder can use several strategies, which are all targeted towards avoiding a confrontation on the subject he or she is handling.

Delaying: pushing a possible confrontation to a later time frame, hoping it will go away; or be better at that point in time.

Creating smoke screens: by raising other subjects, by trying to bring other items to the agenda, the stakeholder may try to get the focus of his problems, and hoping to stay under the radar. When I was young I had to go to bed at 8 o clock in the evening. When this time was approaching, I just got silent and watched television, in the hope my parents wouldn’t notice me.

Keep on giving counter arguments: this is actually a form of delaying, but so widely used it deserves an entry of its own: Just keep on raising questions or arguments why a certain task cant be finished.

No written testimony: avoid having something on paper, email or any other medium that is fixed after you have released it. In this way you are keeping things vague and they are impossible to measure.

Personality: The Person You Are

I am not going to debate the existential question "who am I?". I am talking more about the matter-of-fact properties as "I am a 38 year old male living in The Netherlands." Your gender, your age and if you have kids or not, have a big impact on how you do the things you do. Although these properties of an individual can be expressed in exact values (number, yes/no, male/female) there is also the more vague concept of "personality". Most people would agree in this respect, and would even be able to express some characteristics like outgoing, closed and kind. But if you are trying to get some objectivity in this matter, you quickly get stranded.

Luckily for us, a lot of psychologists have dedicated their lives to this question, and provided us with some ideas. By creating categories of personality everyone can be assigned to a certain personality "value". This is not perfect, but it is sufficient for our discussion. I will use the most famous one, the Myers-Briggs Type Indicator. By answering some question a person can be assigned a certain Meyers-Briggs type, which gives a basic outline about your personality. People are scored against four dimensions (called "dichotomies"), and in every dimension you can only have one value.

The dimensions are (based upon Wikipedia⁵):

- **I**nvert and **E**xtravert; are you focused inward or outward.
- **S**ensing and **I**ntuition; this dimension discusses the way you perceive information; a stronger tendency towards the present and using stuff you see (sensing), or more focuses on the future and let your gut guide you (intuition).
- **T**hinking and **F**eeling; discusses your tendency towards how you make decisions, more rational and calculated (thinking) or more emotional and subjective (feeling).
- **J**udging and **P**erceiving; when given a situation, do you approach this more with a predefine judgment, or is you approach more open minded, and are you just "consuming" the situation?

By assigning every score on a dimension a letter (indicated with bold), the indicator can be expressed by a 4-letter combination, having 16 possible combinations in total. Like I said, this approach has drawbacks, but at least it allows is to assign a value to the term "personality".

Emotions: Your Inner State

⁵ http://en.wikipedia.org/wiki/Myers-Briggs_Type_Indicator

If you ask someone the question "How are you doing?" you are inquiring about their current state, how they are feeling at this moment. How you are feeling has a big impact on the behavior you express. If you are feeling mellow, you will probably easy-going, where as you are stressed you probably react more intense then you normally would.

In Syed-Abdullah et al⁶ the researchers use a list of emotions and feelings to assess the current well-being of developers. By assigning a value to each of every entry in this list (e.g. 0=nothing, 10=maximal) we are able to describe the current state of well-being of a person.

The list they use is:

- Tense
- Miserable
- Depressed
- Optimistic
- Calm
- Relaxed
- Worried
- Enthusiastic
- Anxious
- Comfortable
- Gloomy
- Motivated

⁶ <http://www.springerlink.com/content/h9158q12uu2p54m8/>

Chapter Three

Social Groups

Do You Know Why Every Manager Wears A Suit?

New Project Managers are eager to make the right impression from the start. I must have been the same. It is too long ago to remember. If you see how the young members of our profession go about playing “Project Manager” it makes you wonder how the outside world views us. I have seen newbie’s spending days behind MS Project to create a proper Gantt Chart. I have witnessed adults getting all excited when they could inform me that their project "had a risk-profile of 18%". I smelled the sweat of humans trying to fill every box in a project plan template, relevant or not, just because it is in the template.

Fair enough, I do remember one particular situation from my early days. I spent 3 days creating this Monster Gantt Chart I had to plot on A2 to get printed. I rolled up the paper and went to my client. This client was an elder sales person just before his retirement. He was old school, but one heck of a salesman. I rolled out my wallpaper-size plan, and guided the customer through the steps. All the time he was silent, he didn't say one word. After a while he took the plan and threw it in the garbage bin. While taking his pen and paper he looked up and asked me: "What is it that you want me to do?" Point taken, Gantt is a Project Management icon, and not everyone seems to be a PM.

We radiate to the outside world our icons like Gantt Charts, two-digits precise risk assessments, large documents that seems to cover every little aspect imaginable. If you are a member of our group, you ooze control. I once told my wife that I was "unable to comply to her request". She smacked me on the head telling me that she was not my customer. So, I assume that we also have a specific language that sets us apart from other mortals. By

adopting our symbols, our rituals and speak newbie PMs try to affiliate themselves with the group called Professional Project Managers.

Group affiliation is what it is all about in our lives. During your life you are a member of a lot of social groups, by default, by choice or by force. I am a Dutch white male, member of a child-less double income household, Project Manager, author and web aficionado, to name just a few of my own treats. The Dutch white male is something that I am by birth, by. All other affiliations are more or less done by choice, even though I can debate if for all I was totally aware of the choices made.

The group memberships determine how we see ourselves in the whole of society, it determines our identity. Actually, we have more than one identity. We can choose, we can switch depending on the situation. I like to see myself as an author. With the risk of sounding like an moron: I like the worldly sophisticated aura that is associated with it, even though I now every freak can publish a book these days. Within the professional world I emphasize the software project manager affiliation. You have been dealt a lot of memberships, you can emphasize or down play each affiliation to create your identity.

As an identity is how we see ourselves within the ultimate large group of humans, it is not something that is to be regarded on an individual level, it is a group thing. Without groups, the whole concept of identity wouldn't make sense. We are shaping identities by combining three mechanisms: categorization, identification and comparison⁷. Although broadminded people like to think they do not put everyone in boxes, everyone does. We always put people in categories, we label them. This is done by looking for signs that we associate with a certain group. These signs are the mentioned use of icons, rituals or speak. To be able to associate yourself with a group, we first have to divide society into groups. Identification is the part where you affiliate yourself with a group.

In the example of the first paragraph in this section, new PMs are desperately creating Gantt Charts to become a member of the PM group. The affiliation is done by taken on the social groups norms and other aspects which are used by humans to label an individual to a category. With the identification you label yourself to the group. To be able to do this, you take on the marks that cause the label. Comparison is looking for differences between groups. With the group affiliation you create your identity, your place in society.

⁷ http://en.wikipedia.org/wiki/Identity_formation

For this to work you are also indicating where you are not standing. It is always a comparison between groups. Being an agile project manager is actually saying you are not a plan-driven project manager.

For me personally, the most remarkable exponent of these mechanisms has been the use of a suit within Project Management. Most companies still today have a policy that people in management functions wear representative clothing, being suits. Even to the point where wearing a filthy, non-ironed, too small suit is preferred above a very neat polo shirt with properly ironed Dockers pants. He wears a suit. He must be a good manager.

Deviant Behavior In Project Management

It might not come as a surprise to you, after everything I wrote about this subject, but if in a project I have to follow a procedure just-because-the-company-says-so we have a serious problem. I can try to comply, and I may even pull it off for a couple of days. But there comes a point where I cannot hold back, and start ignoring the procedure and will do my own thing.

Picture this: on a project where I was one of several PMs, weekly progress reports had to be written and send to all other Project Managers. After a while I got the impression that no one was actually reading these things, because of the kind of questions I was getting (answers were all in the reports).

As I was not fond of reporting just for the sake of reporting anyway, I started little annoying experiments like issuing identical reports with different dates, adding nonsense risks, just to see if anyone was paying attention. As you might have guessed, no responses what so ever. So, I stopped writing the reports. All hell broke loose. You have to write the reports. It says so in our Project Management Handbook.

After a while, still not issuing that particular report, I was getting a name about never writing any reports, or structured information what so ever. Although this wasn't true at the moment (I was writing enough documents and sending enough information about relevant issues), in retrospect, after a longer period this started to become true. When hearing my refusal enough times, I actually started behaving that way: I was really starting to not share information. Was a long time ago and I am cured, but it made me

wonder.

What I was experiencing is called deviant behavior, not performing the behavior that is considered normal within society or a particular social group. Although the ideas originate from criminology, the concepts also apply to other smaller pieces of society, like projects. The overall idea is that a social group has its own perception of the ideal life. There is a general conception of how things should be done, what the right way is to operate as a member in that particular group. Get an education. Get a job. Get married. Get a kid. Get another kid. For a large part of society this is still considered the Golden Formula of living one's life.

Conflicts can occur on two levels: the goals that the group prescribes, and the means to reach those goals. In a society where "be all you can be" is the goal, the accepted means are "get an education and earn a lot of money". If an individual is not fortunate enough to get an education due to economic circumstances, he still might go for the goal, but can substitute the means by robbing everyone blind.

If someone is tired of the same old goals of society, has the opinion that it only creates mindless power-driven individuals, he has also a deviance with what is regarded as normal. However, still trapped in the traditional means of society he might still go on in the education-job-marriage-kid path. Typically one of the silent types.

If within a social group the emphasis is put on some one being different in their behavior, not following the norm of the society, this individual can be labeled as deviant. This labeling can be done in the form of drastic measures as putting in jail (which within my society is not a strange thing to do if someone is robbing everyone blind) or by means of communication with a group (did I say gossip?). Deviance within a group can lead to being labeled as such by the group. This labeling in itself would not be so bad, weren't it for the fact that it can lead to a self-fulfilling prophecy. Individuals being labeled as different can look at themselves in the same way and emphasize their label. In this way it becomes a reinforcing process. In the context of crime, by putting people in jail society emphasizes that they perform non-acceptable behavior and that they are bad persons. By being in jail the individual gets a self-image of being a bad person and keeps on behaving like one. If you put it like that, you just know this will trigger a lot of discussions.

Back to the topic of Project Management, there are project goals to fulfill and the project team gets means to its disposal to go reach those goals. But those means are not only just the money and people allocated to the project, but also the approach that is considered normal by the company or the profession group (think about the discussion between plan-driven and agile approaches). What this view teaches us is that if a team member is not following the normal path, look at its perception and attitude of the project goals and the means to reach those goals; chances are that there is something completely out of sync. And emphasizing this point (labeling) will only make matters worse.

Chapter Four

Flexible Mind

Project Profiler: The True Flexible Project Manager

Turn on your television and try not to look at CSI Miami, NYC or Tonopah. It is amazing how popular crime series are, crime series where the geeks will save the day. It must be a universal thing, as the series are as popular in Europe as in The States. For me as a Project Manager it is a great inspiration. They find a dead corpse and an FBI Profiler is brought on the scene. He looks around, sniffs the air and creates a nice profile of the potential killer. Gut feeling, combined with a mix of experience and science transform a dark alley into a rich source of evidence.

When looking daily at the remains of my planning I feel like an FBI Profiler, or more appropriate, a Project Profiler. I look at the evidence and know the problem: death by control. It's liberating to feel like the lone, intelligent and, most of all, cool project profiler that collects evidence and clues, to build a case. Like at the FBI, based upon assumptions a profile is created. New information can lead to new assumptions and a new profile. But also the underlying assumptions steer the direction of the investigation, hoping to find evidence that support the probability of the profile. So, it is not just a matter of information gathering, and presto, you have a clear cut description of the problem. It is a lot of backward and forward reasoning. Based upon some first sparse info snippets assumptions are made, and as time progresses you get a cycle of "assumptions leading to the direction of investigation" and "information leading towards change in assumptions".

The be able to create assumptions and being able to reason to what happens based upon those assumptions, you need theories, you need models. They provide us with a simplified version of reality which make it possible for us mortals to have a clue about what

happens if we press button A or button B, take the blue or the red pill, scream loud or shut up. So, to be able to perform project profiling we need theories and models about project reality. And we need a lot of them. Project life can throw a zillion possible situations at us, and as models are by definitions simplifications, we need as much mental images as we possibly can come up with. If you have multiple models, chances that you have one that suites the situation are increasing dramatically.

If you are talking about "agile project managers", this would be the key aspect of my definition. A project manager that has a lot of mental models about projects available, and can adopt his mindset according the situation without problems, is what I call a true "agile" PM. As with any social situation, a group of interacting stakeholders is a very complex system. You are never going to come up with one this-size-fits-all model that is usable. The only shot PMs have is being fluent in more than one mental model.

The nice thing about models is that you can create your own. It's your head, make sure you are using it for your own ideas. I myself like the idea of using Google Earth, the application that lets you zoom in on the globe until you can see your own house. You can zoom in and out, and flip the globe as much as you want. By zooming you can determine your own level of abstraction. How much details do you want to see? How much of the geographical positions do you want to look at? Same with social models. Do you want to look at two people interacting or do you wish to focus on society as a whole? You are in charge of your own zoom-slider.

Models Effect Reality

No, I am not going to get all cosmic on you. No, I am not going to sell you that if you think long enough about becoming a weasel, you will become one (although I have seen some astonishing examples that support this). What I am going to tell you though that mindsets, models in your head, are a very powerful tool. Models really do affect reality in a sense that the effect the decisions and behavior of the people that hold them. A good example is the use of metaphors. When using metaphors you are taking the images of a different system, and use that to describe, to model the workings of the system at hand.

A famous metaphor is that of a machine when looking at an organization (thanks to Taylor). Every employee is looked at as one of the many gears or bolt in the machinery. Talking about pure efficiency this is a powerful metaphor. However, adapting this

mindset, means neglecting the individual character of every employee.

People can talk about projects as if they are conducting a war. They are using words like "marching orders" and "the troops". If a Project Manager has a mindset like this, war as a metaphor, his mind is thinking in friends and foes, allies and enemies. You are either with him or against him. This view of the world will make it very difficult to collaborate with this person if you disagree. So, in the end, the war metaphor effects reality. If the model is powerful enough and wide spread among more people, the model will even become a reality. The project will end up as a war.

If models can have such an impact on the performance of reality, you almost have to be aware of the images that people try to fill in your head.

"In courses on corporate governance grounded in agency theory ... we have taught our students that managers cannot be trusted to do their jobs -which, of course, is to maximize shareholder value- and that to overcome "agency problems," managers' interests and incentives must be aligned with those of the shareholders by, for example, making stock options a significant part of their pay. ... Why then do we feel surprised by the fact that executives in Enron, Global Crossing, Tyco and scores of other companies granted themselves excessive stock options...?" [1]

Ghosal [1] in the same article sums it up pretty nicely:

"Unlike theories in the physical sciences, theories in social sciences tend to be self-fulfilling."

Perhaps you are wondering at this moment why I am making such a fuzz about all this. Fair enough. Up until a couple of years ago I wasn't completely aware of this phenomenon. I used to work in environments very influenced by corporate politics. The metaphor I created for myself was that of "monkey hill" where all the baboons are showing off their butts to each other in the eternal struggle for having the most red butt. Although this model helped me to run my projects in such an environment, after a couple of years all you can remember is that you are working in a zoo. Everything you see is getting translated into an image of a political arena. Heck, if you stay long enough your own butt is starting to get a slight orange color. And in the end, you almost become what you hated in the first place. I snapped out of it, just in time, thanks for asking.

So, I make the fuzz because I think it is a subject too much neglected in the discussions about the models and theories we as professionals use. And we should especially take care of the ones based upon some gloomy ideology. If you think that everyone in the world is lying and cheating, this will of course influence your behavior. If in fact every person on the globe turns out to be a negative soul, your good. If it turns out that only a very few are bad persons, and the majority is all about love, peace and tenderness, you will run into a problem. You must be able to look at the underlying assumptions of the model, and the validity in the situation you are trying to filter through the model. Yes, I know, easier said than done. Although, you have no idea how few people are even aware of this principle.

Chapter Five

Complex Adaptive Systems

What Are Complex Adaptive Systems?

For the context of projects I will focus on a special type of systems: Complex Adaptive Systems, or CAS for short. I will first throw you off guard with a formal definition, after which I will explain a little more. The following definition is from John H. Holland:

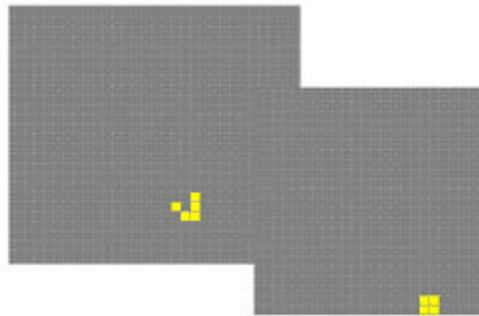
"A Complex Adaptive System (CAS) is a dynamic network of many agents (which may represent cells, species, individuals, firms, nations) acting in parallel, constantly acting and reacting to what the other agents are doing. The control of a CAS tends to be highly dispersed and decentralized. If there is to be any coherent behavior in the system, it has to arise from competition and cooperation among the agents themselves. The overall behavior of the system is the result of a huge number of decisions made every moment by many individual agents."⁸

⁸ Waldrop, 1992,
[http://www.amazon.com/gp/product/0671872346?ie=UTF8&tag=softwar
eproje-
20&linkCode=as2&camp=1789&creative=9325&creativeASIN=0671872
346](http://www.amazon.com/gp/product/0671872346?ie=UTF8&tag=softwar
eproje-
20&linkCode=as2&camp=1789&creative=9325&creativeASIN=0671872
346)

Before you go all bouncy, let me tell you a story about the Game of Life. In 1990, while at university, a popular programming exercise was to create a small program based upon John Conway's (a mathematician from the 60s) computer simulation "Life". The idea is that you have a 2-dimensional grid with cells. These cells can be alive or dead (on or off, colored or blank). When the simulation is running the state of a cell is determined by three simple rules:

- If the cell has no living neighbors or just one, it will be dead (caused by loneliness);
- If four or more of the cells next to it are alive, it will be dead (overcrowding);
- If a dead cell has exactly three living neighbors it will come alive⁹.

The effect of these simple rules can be quite surprising. The starting grid can be very chaotic, but after a while you can see patterns emerge, and even stable situations can be reached where nothing will change any more, or the same patterns are just repeated over and over.



This simple program shows how a simple set of rules, that only take into account the cell itself and its direct neighbors, can create some complex patterns in an entire system (the grid as a whole).

And this is exactly what is known as complex adaptive systems (CAS). Systems like this are the economy, the weather and human interaction, and the game of Life is a very simple one. In a CAS a very large group of small components or agents are interacting with each other. These local interactions are following some general rules. The collective of all these interactions, the sum if you want, determines the behavior of the whole system.

⁹ <http://www.bitstorm.org/gameoflife/>

After reading the previous chapters you don't have to wonder what this all has to do with project management. The people involved in the project and its surroundings are considered the "agents". It is the human interaction between all those stakeholders that determines the overall behavior of the project. Nothing new here. But, applying CAS literally means that rules aren't applied to the project as a whole, but the focus should be the individual interactions between people. That is way this entire exercises is so important.

How To Learn Project Management By Playing The Sims

To be able to discuss how people operate within a project, it is important to have some idea in our head about people, their behavior and how they interact. Some kind of model. Of course a model is a simplification of reality; we leave things out, we make stuff easier, just to be able to understand it all. This might be a small problem, but we have no choice. Without ignoring aspects and making a few assumptions there is no way on earth our brain will get it. Sorry to bring this to you: but our mind is too small for reality.

When looking for a way to describe how people operate, you just have to be totally amazed by the popular computer game The SIMS¹⁰. In this game you simulate a group of people living together. They go to work, they sleep, they have coffee with the neighbors and raise their children. The simulation runs in principle by itself, but the fun is that you can interfere in their situation; can withhold them from food, provide them a lot of money, make them hate or love each other. You just sway your magic wand, kick back and see how your actors in the game react. And what staggers me the most, and why I bring up this subject in the first place, is the level of detail, and life like feel of the simulation. They really nailed it down, simulating ordinary people on their own and in a group.

It seems worth to look a little closer to the underlying behavioral game engine (the part of the game which emulates individuals behave depending on interactions with other actors in the system) to help us crack the code for a proper model. Of course this will be a simplification of the real deal.

¹⁰ <http://thesims2.ea.com/>

Every individual in the game is called an 'actor'. Every actor has some properties that describe it. Of course you have a name so you know who is who, but you also consider aspects that are a given like age and gender. Next to these kind of 'given' properties you have items that describe the state of mind the actor has at any given moment, and yes, they will change. Think about emotions like lust and anger, or physical conditions like hunger and general health.

To be able to do something useful with these properties, they can have values. Of course, gender can be Male or Female, but for things like Anger you can use numbers: 0 can mean completely without anger, and with a value of 100 the steam is getting out of an individual's ears.

Sims Project Model: Tiffany's Lust

I must admit, that the first time a played The SIMS I immediately try to get them to kill each other. I mean: "Looking for a job" Yeah, yeah. "Hitting the next door neighbor" Cool! Assuming that I am not the only weirdo here, and to make stuff entertaining, lets go to our example.

Consider the actor Tiffany in a game. She might have the following properties:

- Gender (M/F) := F
- Age (number) := 30
- Lust (number) := 50
- Anger (number) := 40

We have a 30 year old female that is rather neutral on her emotions lust and anger. Tiffany might be doing something. Actually, every actor is always "doing" something at a given moment. E.g. sleeping, drinking, having a shower or playing chess. This is called the "state" of the actor. Although in reality what people are doing can be limitless; a state can only be a value from a limited list. Of course, this might be a long list. Let's say Tiffany is currently "drinking". At this moment we have a 30 year old woman having a drink and feeling normal. This game doesn't sound like a lot of fun, does it? So, let's give it some action.

Tiffany is one outgoing person, to put it like that; when her lust-level is 50 or above, she needs to satisfy her lust, this will become her "goal". If you are fond of some abstract syntax you like the following notation about Tiffany:

- Goal::Satisfy lust
- State:=all
- Threshold:=lust=>50

So, it doesn't mind what she is doing, when the lust peaks, so does she. One of the strategies she has up her sleeve to fulfill this goal is to kiss someone. But how to select a suited partner? Or a willing victim if you want. The game will have some rules to determine the target, the actor with whom to interact with.

- Target: gender=M; lust>90.

All males with a lust above 90 can be a target. The computer will run through the list of actors in the game to search for candidate that fits the rule. If it has found one, we get to the part where you can see something happening in the game. If it has selected a strategy (kiss someone), found a suited target, it will run some predefined activities associated with this strategy: walk towards the target, say hi, do some chitchat, etc. This is all finally visible on your screen. And finally when the goal is satisfied, when Tiffany finally has her long desired kiss, this will influence her properties; perhaps in this case her lust-level will finally drop by ten points.

Sims Project Model: Bert's Lack Of Recognition

If we take the ideas behind The Sims to a more office like setting, consider the following situation where person A and B, or Bert and Ernie, influence each other. Bert's Recognitions-level is way down; he doesn't feel any recognition at all on his job, so his goal becomes "Getting Recognition". Bert in his mind has three possible strategies which all revolve around just getting attention (as he gets no feedback at all he is dying for any attention at all):

- Passive: doing nothing, see if anyone reacts;
- Aggressive: full force complaining and bitching;
- Escape: doing completely something else that delivers some kind of recognition.

Whatever strategy Bert chooses, his efficiency in his work will drop. Now is a good time to bring in some new element: environment properties. Not only the actors itself have properties, but also the environment in which to have their setting. Most obvious example is the element time; this is a global property for the virtual reality. Other ones are the economic climate, the

meteorological climate. In a project setting "global variables" can be situational descriptors like On-Time and Within-Budget. The values of these global properties also play a part in the game engine.

To get back to Bert and Ernie, the fact that Bernie doesn't work as efficient as he should will affect the global property On-Time. This will become false. Ernie in this case is the Project Manager and the change in the global property On-Time influences Ernie's property "In-Control"; its value is decreasing. Ernie can have none of that, and therefore his goal becomes "Increase In-Control".

Ernie is not much of a manager, so he has only one strategy available: Putt the Pressure On People With Low Efficiency. And what you know, that would be Bert. But by putting the pressure on Bert, Bert's Recognition Levels drop even more, and the spiral downwards has begun.

Projects As A Complex Adaptive System: Why Bother?

As a fundamental model for projects I want to use the notion of a Complex Adaptive System (CAS). In this section I will outline what this means; what are the properties of a CAS and how are they beneficial in our quest to search for answers to project problems?

Why CAS In The First Place?

I am the first to admit that my attention to the use of complex adaptive systems is largely triggered by its current popularity. It is a new and exciting concept that is getting more and more popular, and its associated attention, in almost every scientific discipline. It is this multi-disciplinary aspect in combination with "new and exciting" that sparked my interest.

The central thought that the interactions of a lot agents make up the behavior of the entire system, is similar to the opinions I hold when talking about projects: the interactions of all the individual stakeholders make up the behavior of the project. The fundamental idea resonates very well with my personal views on projects.

But only multiple agents that interact doesn't make a complex adaptive system:

"What distinguishes a CAS from a pure multi-agent system (MAS) is the focus on top-level properties and features like self-similarity, complexity, emergence and self-organization. A MAS is simply defined as a system composed of multiple, interacting agents. In CASs, the agents as well as the system are adaptive: the system is self-similar. A CAS is a complex, self-similar collectivity of interacting adaptive agents. Complex Adaptive Systems are characterized by a high degree of adaptive capacity, giving them resilience in the face of perturbation."¹¹

These extra properties should bring something useful to the table. Otherwise we only introduce additional complexity (pun intended) without getting benefits in return.

So, we have:

- Self similarity
- Complexity
- Emergence
- Self-organization
- Adaptive capacity

I will turn to every aspect individually and discuss what it means and what benefits it brings to our modeling of projects.

Self similarity

"In mathematics, a self-similar object is exactly or approximately similar to a part of itself, e.g., the whole has the same shape as one or more of the parts."¹²

For self-similarity to make sense in a project context, we have to include the following view:

- A project is a small organization
- An organization is a small society

Applying the concept of self-similarity this means that behavior and patterns of projects can be found in organizations and society. And vice versa, patterns seen in society can be found in projects. Every level of abstraction will have (near) identical properties, only the scale is different. If we look specifically to shapes of things (e.g. organizational, communication patterns) the concept of a fractal applies:

¹¹ http://en.wikipedia.org/wiki/Complex_adaptive_system

¹² <http://en.wikipedia.org/wiki/Self-similarity>

"... a fractal is "a rough or fragmented geometric shape that can be subdivided in parts, each of which is (at least approximately) a reduced-size copy of the whole"¹³

Basically, self-similarity in geometric shapes. As emerging patterns are a very important part of interest in a CAS, and patterns are represented by shapes, the importance of fractals becomes clear:

"A fractal figure is a snapshot of a dynamic system at a stage of development. The snapshot is a clue to a dynamic process - a pattern of development."¹⁴

The self-similarity property allows us to apply concepts from society and general organizations directly to projects. If we are looking at why projects succeed or fail, we should find useful patterns in the discussions why societies in general succeed or fail.

Complexity

In a simple system you can easily see and predict how a system behaves. In a CAS you can absolutely forget that. The amount of variables that determine the path the system will take are immense and the slightest change in just one variable can set the system of in an entirely different direction (the famous butterfly-effect¹⁵).

The good news is using a CAS you can handle the vast amount of variables; the drawback is, the slightest deviation in start situation can change the course of a system dramatically, it is therefore in deterministic. This makes it useless for precise predictive powers about reality. But for our modest goal in modeling projects that is not a problem. The following quote sums it up perfectly:

"These authors re-emphasize in their conclusion their belief that such modeling is descriptively useful in explaining behavior, but that direct modeling is impossible. "Reviewing the selection of scenarios presented in this section, one summarizing remark should be made immediately. The extreme sensitivity of the dynamics to the initial conditions and numerical values prohibits any use... for predictive purposes...."¹⁶

Emergence

¹³ <http://en.wikipedia.org/wiki/Fractal>

¹⁴ <http://www.spectacle.org/999/bearse.html>

¹⁵ http://en.wikipedia.org/wiki/Butterfly_effect

¹⁶ <http://www.ceap.wcu.edu/Houghton/thesisM/Ch3.html>

"... emergence refers to the way complex systems and patterns, such as those that form a hurricane, arise out of a multiplicity of relatively simple interactions."¹⁷

Self-organization

"Self-organization is a process in which the internal organization of a system, normally an open system, increases in complexity without being guided or managed by an outside source."¹⁸

How the system organizes itself is part of the system. There is no need to have an external entity to take care of that. This makes the model of the CAS powerful, as it is self-contained in this respect. Even if you view projects as an artificially constructed system with dedicated structures, this doesn't mean that when viewing the project as stakeholder-interaction model the from the outside enforced structures prohibits self-organization. The property of self-organization enhances a systems adaptive capacity.

Adaptive capacity

A CAS has adaptive behavior (hence the name), which lets it work better in its environment. The adaptive capacity provides the system the much needed resilience in face of changes in the environment or the system itself.

Attractors

Attractors are not a property of complex systems, however it is a concept that plays a major role in its treatment. Systems will follow certain paths. Attractors help us to define where they are heading for.

"In dynamical systems, an attractor is a set in the phase space to which the system evolves after a long enough time. Phase space is the space in which all possible states of a system are represented, with each possible state of the system corresponding to one unique point in the phase space. A trajectory of the dynamical system in the attractor does not have to satisfy any special constraints except for remaining on the attractor. The trajectory may be periodic or chaotic or of any other type."¹⁹

¹⁷ <http://en.wikipedia.org/wiki/Emergence>

¹⁸ <http://en.wikipedia.org/wiki/Self-organization>

¹⁹ <http://en.wikipedia.org/wiki/Attractor>

The state of a system is something that the one defining the system can determine. If you are discussing projects, we are free to define which states we want to consider. To give you some idea: if we consider communication patterns within the project team, we can have the situation that everybody communicates with everybody else (fully connected communication graph), or we can have the situation that everyone only communicates through the PM (graph looks like a wheel). The phase space can consist of the connectivity of the communication network.

Chapter Six

Social Networks And Game Theory

Social Networks: Are You The Center Of Your Stakeholder Network?

When I got my first class on computer networks, I was hooked. I loved the idea of small packets of information hopping from one computer to another. Amazed about how the information always seemed to arrive at the right spot, even if there were a gazillion computers connected, like on the Internet. Although I never worked in that particular field of information technology, I still remember an important lesson from the routing-algorithms that could be used. To find out which way another computer was located within the network, you can use one single computer as the main guide; that host has all the data needed to locate the computer you want to send your information package to.

This sound very effective at first, and it even is, if not too many PCs and mainframes are connected to the network. However, when you are thinking about the Internet, forget it. The information is just too much, and always outdated if you try to have a single map of the net. You have also a single point of failure in this scenario. If this one computer crashes, not one package will arrive at its destination. In search for alternatives, my mind was fixed on needing a map of the network. As it turned out, you can also have algorithms without the need for a image of the entire network; if

you get a data package, you just give it to a computer you are connected with, and that accepts it the fastest. I never forget the name: the hot-potato-algorithm.

Social Networks

People in small and large groups can be viewed as networks. In this particular, social networks. Every person is indicated as a dot, and any relationship between dots are drawn as a line between the dots. The person is the computer, and the relationship is the network cable. As networks are a particular type of graphs, the official terms are edges for the dots and vertices for the lines. The field of social networking analysis can provide us with some insights, structures and definitions when looking at stakeholders in groups. "A social network analysis examines the structure of social relationships in a group to uncover the informal connections between people." [1] What exactly makes up the connection, the relationship between the people in the graph, is a choice of the analyst. Communication, awareness, trust, decision making and interactions of any kind. The social network analysis might reveal a pattern that could point to, or explain the occurrence of a problem.

Being The Bottleneck In Your Project

Suppose you work as a Team Lead for a development group. The teams performance is not what you would have expected if you consider the experience level of its members. You know just the problem: they are lousy programmers, despite their experience. You just do it yourself and leave those incompetent fools to their own devices. If I would visit your project as a Project Profiler, aware of "a" problem, not aware of your opinion, I could try to plot a network of the communication of bug-reports and requirements. This should not be too difficult as most software projects have requirements and issues logged in a database, with some kind of work-flow who is assigned to the task. Great resource of information. I will see requirements drip in from user groups, to project manager, to team lead, and further. A social network is a nice visual aid, and I will make the arrows of information flow thicker if more information is passed to a particular person.

Guess what? All big fat arrows are pointing towards you in the network. You have a very high centrality. Centrality is the extent

to which a person is in the center of a network²⁰. It seems that all information about requirements flows through you, and very little information flows from you, especially towards your team members. The reason why you do this, remains to be discovered, but you are caught. You are identified as the problem. Another great day for the Project Profiler.

Sitting Close Together

Not every stakeholder is interacting in a group the same with all other stakeholders. Sometimes people will talk to each other every hour, e.g. when they are in the same room and part of the same team; in other cases people will never see or speak each other at all during the course of the project (the lonely tester and the financial director for example). When viewing stakeholder as a group of interactions, not every pair will be the same; in the corresponding network there will be no line from every dot to all other dots in the network. You will see some form of clustering; smaller groups that have a high degree of interaction. People that will communicate more with each other because of the fact that they are closer located, or in the same team, or need to because of their tasks. Looking at the most simple form, you will see that stakeholders from the same group are more tighter nit together. A group can be defined by having the same or a closely related role within the project (see table).

Sample Stakeholders By “Normal Role”	Sample Stakeholders By “Project Role”
<ul style="list-style-type: none"> • Sales • Marketing • Financial Department • Controlling • Debtor administration • Production • Product Development • Human Resource • IT Department • Software Vendor 	<ul style="list-style-type: none"> • Project Manager • Customer • Developer • Architect • Database Administrator • User • Tester

²⁰ Inside Social Network Analysis, Kate Ehrlich and Inga Carboni, [http://domino.research.ibm.com/cambridge/research.nsf/0/3f23b2d424be0da6852570a500709975/\\$FILE/TR_2005-10.pdf](http://domino.research.ibm.com/cambridge/research.nsf/0/3f23b2d424be0da6852570a500709975/$FILE/TR_2005-10.pdf)

Among certain members a higher level of interaction will occur. Here the term "density" is used. "It is a proportion that indicates the number of actual ties present in the group relative to the number of possible ties in the group (i.e., if everyone had a relationship with everyone else in the group)."²¹ If certain parts of a social network have a higher density, that can indicate the formation of so-called "sub-groups" or "cliques". People that connect sub-groups together are called "hubs". If we take a look at projects, you can image that the Project Manager is some kind of super-hub.

Prisoners Dilemma: Do You Cooperate In Your Project Or Are You Egocentric?

I love looking at situations through different glasses to get several perceptions. I love reading and thinking about human behavior. And I adore authors that take on a multidisciplinary approach. So I must be ecstatic when all three are combined. I am.

In "Critical Mass: How One Thing Leads to Another" Philip Ball explains to us what happens if you try to explain human behavior by using concepts and theories from physics. It is a treat. Ball writes clear and entertaining, and the ideas behind such a "physics of society" make your head spin. Not necessarily because you are staring at the ultimate truth, but just because you have never looked at your own behavior like that.

Physics cannot tell you how a certain individual particle is going to behave. However scientist can explain how a large group of particles, like a liquid, is going to act. Using this principle on humans you have to focus on collective behavior. The advantage is collective behavior smoothes out individual unpredictability. Ball keeps emphasizing throughout the book: "the interdependence of people makes group behavior different from simple extrapolation of individual behavior". He keeps hammering on the fact the global phenomena are caused by local actors. A large group of individuals interacting make up the "behavior" of the group and not some other way round.

²¹ Inside Social Network Analysis, Kate Ehrlich and Inga Carboni, [http://domino.research.ibm.com/cambridge/research.nsf/0/3f23b2d424be0da6852570a500709975/\\$FILE/TR_2005-10.pdf](http://domino.research.ibm.com/cambridge/research.nsf/0/3f23b2d424be0da6852570a500709975/$FILE/TR_2005-10.pdf)

The book explains a lot about the interactions of individuals. I want to highlight one in particular and apply it to the area of Project Management. Facing a certain situation, a person has to select a strategy to interact with another individual. Are you going to cooperate, or are you going to be egoistic? How does this strategy selection work?

How a strategy is exactly chosen in reality, remains a little mystery. Some light can be provided though using Game Theory as treated in the book. In this part of mathematics probability is used to evaluate certain plays. A popular example in this context is that of Prisoners Dilemma. In this posting I will use my own version of this game, the Project Managers Dilemma.

There are two Project Managers and both of them need a certain programmer from a shared pool of resources. They have both two options:

- Share the resource, so they have them both for half the time or
- Claim the resource 100% exclusively for their own project.

In this particular game, if both Project Managers claim the developer, they lose both, as no one will get the programmer (each PM will only get 1 point, as the resource is still available). If they both share the resource, they will earn each a three point reward. If PM 1 claims, and PM 2 goes for option share, PM 1 gets the resource, and is rewarded 5 points, and PM 2 gets nothing and the sucker bonus of 0 points.

PM1 → PM2	Share	Claim
Share	Mutual cooperation 3 points each	PM2 Sucker PM1 5 points PM2 0 points
Claim	PM1 Sucker PM1 0 points PM2 5 points	Both punished 1 point each

Of course, the goal of the game is to get as many points as you can. One round of this game is no fun, and will tell us not much. But playing multiple times this game is more interesting. Based upon

previous outcomes the Project Manager can adapt its strategy. According to Ball, computer simulations have shown that one of the most successful strategies is called Tit-For-Tat. The first round the PM will share (to show he is willing to play nice). And after that, he will always use the strategy that his opponent chose in the previous round. In this way, if the other PM will keep on claiming, he will not be the sucker all the time. And if the other player wants to cooperate by sharing, the PM will go along, as that strategy is seem to be best for both of them.

Treehugger Project Management: Is Trust Important?²²

A couple of years ago I was asked during a sales presentation what I thought was the most essential ingredient for a successful project. My answer was "mutual trust". People in the room were staring at me like I was some kind of Softy Oozy New Age Treehugger. I switched very fast to the normal "plan-and-control" crap to get happy faces again.

Today I would provide the same answer to that question. Trust is essential to doing successful projects, and therefore a core concept for Project Management. But to avoid this "Treehugger" image, let me give you a view on how trust can be modeled, so we put some hands and feet to this rather abstract idea.

As a starting point we take the Prisoners Dilemma (PD) as discussed in the previous section. In essence it is a situation where

- if people cooperate both have success,
- if one person is taking advantage of the other (defect) this person has an even larger benefit, but the other suffers a loss,
- if both persons defect they lose both. In a situation like being in prison, you have only those two options, cooperate and defect.

However in more general circumstances, like projects, you can have a third: don't play, walk away, just exit. For this section I will simplify a project to a series of prisoners dilemma's where the strategies can be cooperate, defect and exit.

²² Chapter based upon "THE EVOLUTION OF TRUST AND COOPERATION. BETWEEN STRANGERS: A COMPUTATIONAL MODEL", <ftp://hive.soc.cornell.edu/mwm14/webpage/asrtrust.pdf>

The idea of "iterative PDs" where an enormous series of PDs are performed behind each other and the choice of strategy is based upon the outcomes of the previous iterations (remember Tit-For-tat?). History plays an important role in choosing a strategy. Central question is "Do you trust the other party to cooperate?" "Trust" is defined as "have confidence or faith in" but also as "reliance: certainty based on past experience". Based upon the things that happen in the past, you adapt your strategy.

Having Only One Shot

But what if you haven't done a zillion iterations? What if you meet a person for the first time and you are confronted with a prisoners dilemma? Researchers call this the "one-shot prisoners dilemma". In a situation like this, people are trying to determine the "trustworthiness" of others. They are trying to read "telltale signs", look for behavior or other marks that they identify with trustworthiness. This might be as simple as being friendly and saying "hello" every time you see someone down the hall. Perhaps you have automatically more trust in someone wearing a suit, or a person with PhD behind his name. The idea is that you are trying to detect signs of trustworthiness, whatever that may be for you.

Next to this detection, the projection of your own intentions plays a role in the decision of the strategy; if you want to cooperate you are more likely to be biased into "seeing" the other as trustworthy. We use projection and detection as a mechanism to compensate for the lack of history one has in one-shot Prisoner Dilemma's.

How people detect the tell-tale signs of trustworthiness is not only based upon behavioral markers that society associates with it; it has also to do with the similarity of the other with you. Persons that are more viewed as being equal or "the same" or more likely to be considered honest and sincere towards you. Translated to terms of social networks: people closer in social networks are more likely to consider each other trustworthy than people further apart.

This is not a one dimensional thing, people are associated with multiple social networks and groups. And every social group has its own rituals and signs that communicate its uniqueness towards the world outside the group. If you have a lot of aspects associated with a certain social group, you will more likely be considered trustworthy by members of the same group.

The only question remaining is: do you trust this model?

Chapter Seven

OODA: Individuals Interacting

Driving On The OODA Highway

By Ali Anani²³ and Bas de Baar

Projects, organizations and even society in general are all abstractions of the interactions of individuals. When looking at the behavior of a person, we see that from a very high level perspective this is determined by:

- who he is: personal traits of the individual, as gender, age, race;
- how he is at the moment: the emotional internal state of a person;
- what he wants: the desires that drive human behavior, and
- what he thinks will happen, our expectations.

²³ This article is part of the “Fish Pond”-series I wrote in collaboration with dr. Ali Anani. Ali Anani got his PhD in chemistry in the UK (1972). As of 1981 Dr. Anani got interested in applying scientific approaches to economic and social issues.

Info: <http://www.winnerstrain.com/DefaultEn.aspx?value=50>

When dealing with complex environments it is the last item we have to cultivate to handle situations properly. This is what makes a human complex system adaptive. A *complex system* is a large collection of interacting parts or entities. In the language of complexity theory, the parts are commonly referred to as agents. These interacting parts create the environment in which they exist. Further, by constantly acting and reacting with one another, the parts continually perturb and modify their environment²⁴.

Failing to adapt to change may be fatal and may lead to self-killing without agents being aware of the repercussions of their acts. The fish in a fish pond illustrate these points clearly. Fish in their confined pond space excrete ammonia, which changes the acidity of the water of the pond leading eventually to the killing of the fish! Variation of the temperature of pond water is also stressful to the fish. Truly, some fish adapt to the changing environment in different ways such as by changing color, hiding and schooling yet their respond to changes is not fast enough and may result in the Winter Kill and Summer Kill²⁵ of the fish.

The OODA Loop And Information Processing

To have a complex system that is resilient to changes, that has a mechanism to transform itself and to be able to adapt to the environment it needs feedback from the environment. Feedback information needs processing and communicating to other agents. To do this an agent has to go through the OODA loop. John Boyd, a famous military strategist, created the so-called OODA loop²⁶ to give us structure when discussing this subject. The loop consists of four steps: Observe, Orient, Decide and then Act.

This insight was made by Brian Walker et al²⁷. These authors ably mention that in general terms, complex systems possess the ability to process information. The systems sense their environments and collect information about surrounding conditions. They then respond to this information by using a set of internal models to guide their actions. The systems may also encode data about new situations for use at a later date. This characteristic is closely related to the adaptation that occurs near the edge of chaos.

²⁴ <http://advice.cio.com/user/michael-hugos>

²⁵

<http://www.srd.gov.ab.ca/fishwildlife/fishingalberta/summerwinterkill.as>

px

²⁶ http://en.wikipedia.org/wiki/OODA_Loop

²⁷

<http://www.ecologyandsociety.org/vol9/iss2/art5/main.html#Attractors#Attractors>

When looking at how a cluster of people (organizations, projects, society) adapts to changes, we have created the image of individuals operating on continuous OODA-loops. Observing reality based upon absorbing information from other agents and the environment. The processed information is used for orientation in combination of the mental model a person has of the reality. Based upon the expectations resulting from both previous steps an agent decides what to do. Like a little PacMan we are eating information packages on the OODA highway. The higher the amount of high quality information, the better our effectiveness in adaption.

Long Tail Distribution Of Information

There is another emerging attribute of information apart from the use of OODA loops in processing information. This is related to the uneven distribution of processed information. Information is wealth and wealth follows the Long Tail distribution.

The long tail is the colloquial name for a long-known feature of some statistical distributions (Zipf²⁸, Power laws²⁹, Pareto distributions³⁰ and/or general Levy distributions³¹). The feature is also known as heavy tails, power-law tails, or Pareto tails.

In these distributions a high-frequency or high-amplitude population is followed by a low-frequency or low-amplitude population which gradually "tails off." In many cases the infrequent or low-amplitude events "the long tail" can make up the majority of the graph³².

Information is a type of wealth and is expected accordingly to follow the same distribution. Recent studies show that this is the case indeed. The Internet has drastically lowered the cost of stocking and distribution of information (music, news, art, etc.) and physical products. This opened the way for long tail applications (TV spreads out on the Web³³).

These findings tempt us to conclude that the information landscape is both spiky (large differences between the amount of processed information available to agents) and flattened (everybody has the same amount of information available). Not everyone has access to the same amount of processed information. Every agent has

²⁸ <http://www.answers.com/topic/zipf-s-law?cat=technology>

²⁹ <http://www.answers.com/topic/scaling-law?cat=technology>

³⁰ <http://www.answers.com/topic/pareto-distribution?cat=technology>

³¹ <http://www.answers.com/topic/l-vy-distribution?cat=technology>

³² <http://www.answers.com/topic/the-long-tail>

³³ <http://www.emarketer.com/Article.aspx?id=1005991>

different amounts of information available depending on its location and place in time. As we get more information the spikes will still be there, but the shares of the agents of the long tail might get more flattened.

Social OODA Super Speedway

By Ali Anani and Bas de Baar

In the previous section we painted the image of people walking on the OODA highway, continuously performing OODA loops, interacting with the environment, in the search for information packages that help them adapt to changes. In this posting we want to extend this notion to the use of social OODA loops.

Humans are social. A group of people interacting with each other has to be viewed in a social context. Human needs are all expressed in comparison of other members of the globe. That is why they are considered social. In this context we also consider the concept of group affiliation. Group affiliation is what it is all about in our lives. During your life you are a member of a lot of social groups, by default, by choice or by force. The group memberships determine how we see ourselves in the whole of society, it determines our identity.

If we want to have a proper understanding of how groups of people adapt to different situation, we need to have a look at how resilience is created within a social complex system. Making the system social- affects the OODA Highway view at two levels:

- the effects on the mental constructs we use in the “observe” step;
- as a driving force in our behavior as a goal to satisfy.

Curtis Gale helps us explaining the first aspect by his introduction of social OODA loops³⁴. He points out that in a traditional OODA loop the orient phase is assisted by mental models and experiences from the individual person.

But in the context of social systems being affiliated with a certain social group brings a specific set of mental constructs with it. If

³⁴

http://www.phaticcommunion.com/archives/2006/07/social_ooda_loo.ph
P

consider yourself religious, you are guided by a different mental model than when you are a Darwinian. These mental constructs are shared among the members of the social group.

The effectiveness of adaption in social complex system can be considered depending on the quality and amount of mental constructs a person has as its disposal. Like people on the previous OODA Highway, who were eating information like Pac Man for their survival, our social PacMans must have food too.

We are proposing the concept of *social capital* as being the central available element that expresses the effectiveness of resilience and adaption within a social system. Although there are a lot of definitions³⁵ going around for this concept, it provides the notion that a higher value shows better access to other people, to either share, exchange or in another form influence shared constructs. A definition³⁶ that comes close in reflecting this aspect: The individual and communal time and energy that is available for such things as community improvement, social networking, civic engagement, personal recreation, and other activities that create social bonds between individuals and groups. This mirrors our observation that people are forming social clusters.

Closely related to social capital are social networks. If you are better connected, you are more likely to have a larger social capital. This turn us to the question on how social capital is distributed among the system. The information OODA Loop and the Social OODA loop interact. E.g. Information exclusion might lead to social exclusion, which in turn affects social interactions³⁷. The network effect was ably recorded by Buchanan³⁸. This effect leads to the spiky and flattened social landscape, in which agents experience differences in their ability to observe and gather information depending on their location on the landscape network organization. Moreover, a network organization depends only weakly or not at all on the actions or character of their individual members. In other words, your own individual actions have no real impact on the whole, it's your place within the network, who you know, that makes the difference.

The question turns into if information is not evenly distributed would they result in uneven social OODA loops? Or, will social networks produce different landscape of interactions than that of

³⁵ http://en.wikipedia.org/wiki/Social_capital

³⁶ <http://www.cdc.gov/healthyplaces/healthtopics/social.htm>

³⁷ http://en.wikipedia.org/wiki/Social_capital

³⁸ <http://hbswk.hbs.edu/archive/2906.html>

the information network? It turns out that social networks behave similarly. If we take a look at how social structures have evolved over the centuries, you can see that we went from a flat distribution to a long tail.

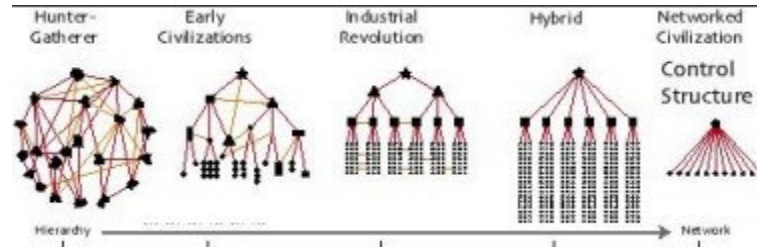


Image by PhaticCommunion.com³⁹

The social network occurs in steps, much like an assembly line. Most systems designed by man are sequential. Branching operations, however, have a more involved structure: they contain feedback loops, branches and bifurcations, and jumps from one linear sequence to another.

Electronic social networks introduce new parameters to the complexity of interactions. The speed of interaction and the removal of the impact of direct feelings are noticeable factors. Feelings impact the quality and frequency of interactions on the network. Good feeling affects actions and these in turn affect outcomes. To get good results you need to create good feelings. A leader who is emotionally intelligent will induce loving feeling among his staff, and this will in turn produce likeable outcomes.

Although we insinuated above a direct relationship between social capital and the level of connectivity in the social network, in reality the dimensions are a little more complex⁴⁰, and we used this sample just for illustration. E.g. the location in the network is a balance between direct bonding and keeping a little distance. Some possible negative effects⁴¹ like too strong bonding, exclusion of outsiders, bullying of deviants and resistance to change are associated with being in a center of a social network and are not contributing to adaptability.

³⁹

http://www.phaticcommunion.com/archives/2006/07/social_ooda_loo.ph

⁴⁰

http://siteresources.worldbank.org/WBI/Resources/Analyzing_Social_Capital_in_Context-FINAL.pdf

⁴¹ http://www.arbejdsmiljoforskning.dk/upload/PHA_181007.pdf

The process of social interactions is complicated and may bifurcate into new directions. These interactions might unfold novel ideas. The Long Tail Distribution is an outcome of these positive interactions. To give one example, a publishing company might have a book that is selling very well (a spike) and another book that does not sell very well. By recommending the low-selling book (flat sales) to the readers of the high-selling book customers might be tempted to buy the book and spur its sales. Social interactions are impacting our economic lives as well. The landscape of the emerging social communities is having an impact on the economic landscape. However; all interactions are based on observing (information collection), which leads to visualization of the new situation (orientation) and then to decision making and acting.

This OODA loop has a long tail distribution, and accordingly social interactions and economic interactions are likely to have the same distribution.

Economic And Social Clustering

Suppose we have a model with agents (people) modeled after the concepts as described in the previous paragraph, and suppose we look at the global perspective. What is it we will see? All the fish in the pond are grouping together.

Economic Clustering

Like the oceans are all connected to each other and provide us with currents, so are the economic forces in constant flux and alternating over the globe. Work moves around. If it can be produced cheaper, more efficiently or better, it gets relocated. Talent moves around. If one area on the globe is more exciting and thrilling than another, people relocate. Work moves around and people that perform the work move around. Not necessarily dependent of each other.

Regional population changes rapidly. Asia gets a booming population growth. First world nations have a enormous amount of seniors coming towards them as the baby boomers are getting old. With regional changes in the populations, the demand for work shifts.

But one remarkable aspect is that work seems to be located around certain topological centers like a harbor, a place rich of natural resources or just cities. Work is not spread out evenly over the

planet. There are concentrations of it. The same goes for the other current, that of talent moving around (from *The Flight of the Creative Class: The New Global Competition for Talent* by Richard Florida). The most incredible, creative talent is looking for great places to live. Places where tolerant stimulating locations provide company of likeminded people. Both currents have as a net effect that people are clustering, one gets clusters because people have the need to satisfy their economic needs.

Social Clustering

Suppose the map of the earth doesn't reflect countries, but they represent ideas. Or they would represent religions, world views, life styles and other concepts. Imagine a spatial representation of concepts. People will not be spread out evenly. What you will see is that people are cuddling up next to each other. As their social needs by definition can only be fulfilled in relationship to other people, the association needed with groups ensures the clustering will be a fact when using a conceptual map.

When discussing social clustering in the context of The Fish Pond one needs to consider what has been termed Big-fish-little-pond effect (BFLPE), which is a term that was introduced by Herbert W. Marsh⁴² which hypothesizes that the self-concept⁴³ of students is negatively correlated with the ability of their peers in school: Thus, academic self-concepts depend not only on one's academic accomplishments but also the accomplishments of those in the school that a student attends. Go big fish in shallow waters compare themselves with others? Socialization in small world might intensify the feeling of belonging in either a positive or negative ways as proximity might encourage comparing oneself with others. If a team member feels he is a Big-Fish in a little-pond will behave differently than if he feels that he is a small-fish in a big-pond. The idea is similar to a hefted weight is perceived as heavier than normal when "contrasted" with a lighter weight.

Closeness of social groups may produce another effect. International teams may produce different breed of ideas as fish produce different breeds of fish in a fish pond. Most pond fish will breed⁴⁴ with regularity in a pond containing plant life. It is always fun for everyone to see the baby fish hatch and see what colors and characteristics they develop, Socialization in international teams might lead to novel ideas because of their hybrid fertilization.

⁴² http://en.wikipedia.org/wiki/Herbert_W._Marsh

⁴³ <http://en.wikipedia.org/wiki/Self-concept>

⁴⁴ http://www.vnwg.com/fish_tips01.jsp

What puts the village into Global Village?

Until now we didn't touch on the current trends that are taking place. The world is shrinking. But what does that mean? The world is getting flat is a statement we hear a lot. It reflects the effect of globalization on economic needs:

Although the world, as characterized by columnist and author Tom Friedman, is getting flatter as a result of removal of trade and other barriers, it is also being tilted at an increasingly steep angle. Think of it as a sliding board, very flat and smooth but inclined to speed the move of production, services, technology, wealth and power from West to East and often from open, democratic systems to more opaque, authoritarian regimes⁴⁵.

The removal of trade and other barriers, the ever increasing availability of cheap communication are what puts the village into Global Village. The impact is not only economic. Globalization also has its effects on social needs:

By the end of the twentieth century, if not before, globalization had turned world order into a problem. Everyone must now reflexively respond to the common predicament of living in one world. This provokes the formulation of contending world views. For example, some portray the world as an assembly of distinct communities, highlighting the virtues of particularism, while others view it as developing toward a single overarching organization, representing the presumed interests of humanity as a whole⁴⁶.

What is happening in this life time is unprecedented. Economic and social barriers as we know it are removed; mostly creating new ones. People will still form clusters, but that is a grouping we are not familiar with. All the barriers that used to separate people from each other are gone. The same people are now in one room together, and we are all running for a corner to get the familiar feelings back.

⁴⁵ <http://www.sfgate.com/cgi-bin/article.cgi?file=/c/a/2005/07/10/INGRADJF3K1.DTL>

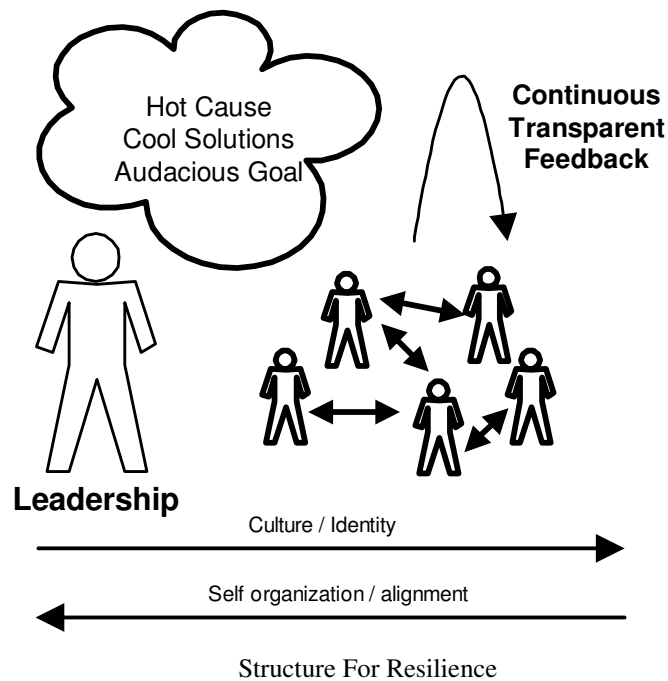
⁴⁶ <http://www.sociology.emory.edu/globalization/theories03.htm>

Chapter Eight

Resilience

Structure For Resilience

A project is a human system working towards a desired goal. However, the project is running within an environment that is changing continuously. The project needs ways to deal with these changes and still keep performing its function, that is, reaching the desired goal. The project needs "resilience".



As explained by Resilience Alliance⁴⁷:

"Resilience is... the ability to absorb disturbances, to be changed and then to re-organize and still have the same identity (retain the same basic structure and ways of functioning). It includes the ability to learn from the disturbance. A resilient system is forgiving of external shocks. As resilience declines the magnitude of a shock from which it cannot recover gets smaller and smaller. Resilience shifts attention from purely growth and efficiency to needed recovery and flexibility. Growth and efficiency alone can often lead ecological systems, businesses and societies into fragile rigidities, exposing them to turbulent transformation. Learning, recovery and flexibility open eyes to novelty and new worlds of opportunity."

In complex adaptive systems (like a human system) an important concept that allows for adaptive capacity is "self organization". According to Wikipedia⁴⁸:

"Self-organization is a process in which the internal organization of a system, normally an open system, increases in complexity without being guided or managed by an outside source."

In contrast to a traditional central plan-and-control organization this would allow for individuals to act fast upon changes in the environment, it would allocate the proper resources to a problem more efficiently. There is no central bottleneck for information which consumes time. There is no central point of decision that has only a fraction of the collective mental capacity.

Group Identity

But self-organization is only part of the story. For human interactions to work properly as a group, an identity is needed. If people want to be associated with the organization, self-organization becomes natural and very effective. The desire to be part of the group creates tremendous motivation, it creates a sense of trust (which allows for continuous and transparent communication), and fulfilling the identity creates alignment among the members.

⁴⁷ <http://www.resalliance.org/564.php>

⁴⁸ <http://en.wikipedia.org/wiki/Self-organization>

If you have a hot cause with cool solutions that inspire people, motivated people will work hard to achieve the big audacious goal. They will love and respect everyone else working on the same cause. The similarity in interests will enhance trust, which will open up communication channels big time. The culture that emerges allows like-minded people on board and eliminates slackers. The overall goal will function as a beacon for all activities, it aligns the group's activities.

Continuous Transparent Feedback

A system always communicates with its environment and based upon the feedback it gets from it, alters its behavior. If a group of animals will drink water from a well and one of the groups dies because of it, they entire group may search for a different well. If a company introduces a new product, and sees its stock plummeting because of it, it might change its strategy.

It is therefore essential that the organization members get continuous feedback on their own performance and the environment. This is where the use of analytics, metrics and "in-your-face" information visualization comes in.

Summary

- Leadership provides big ambitious goals, it creates an identity that the organization members want to be associated with. It is all about creating Hot Causes and Cool Solutions. This creates motivation, this creates a cause, this bootstraps the creation of a specific culture.
- The team becomes self-organizing with the ambitious goal for alignment, and the emerging culture for "rules of interaction" within the group.
- The group identity creates trust, which creates proper communication.
- Metrics and analysis of the group performance and environment is used as a feedback loop directly into the team for self-organization.
- Transparency of communication ensures nobody is cheating the system.

Role Of Project Manager

- Bootstrap identity and culture
- Nurture identity and culture
- Nurture flow of information (continuous and transparent)

The Secret To Coping With Change: MIND + NETWORK

People that work in groups (project, organization, society as a whole) have to cope with change. The more effective you are in this area, the more success you will have in this ever morphing world. This is a short outline of how people effectively cope with change.

Humans In Groups Are Systems

Whatever your take is on projects, at the end of the day it is just a bunch of people working together to achieve a certain goal. During this endeavor to laugh, cry, pull pranks, play dirty tricks and have all other kind of behavior towards each other.

The central thought that the interactions of a lot agents make up the behavior of the entire system, is similar to the opinions I hold when talking about projects: the interactions of all the individual stakeholders make up the behavior of the project.

To cope with change human systems need resilience

"Resilience is... the ability to absorb disturbances, to be changed and then to re-organize and still have the same identity (retain the same basic structure and ways of functioning). It includes the ability to learn from the disturbance. A resilient system is forgiving of external shocks. As resilience declines the magnitude of a shock from which it cannot recover gets smaller and smaller. Resilience shifts attention from purely growth and efficiency to needed recovery and flexibility."⁴⁹

Resilience = Capacity To Adapt

"Adaptive capacity in ecological systems is related to genetic diversity, biological diversity, and the heterogeneity of landscape mosaics ... In social systems, the existence of institutions and networks that learn and store knowledge and experience, create flexibility in problem solving and balance power among interest groups play an important role in adaptive capacity ..."⁵⁰

⁴⁹ <http://www.resalliance.org/564.php>

⁵⁰ <http://www.resalliance.org/565.php>

Resilience lies at the agent WITHIN the system

Resilience is not some kind of magical star dust that can be attributed to an abstract concept like "project", "organization" or "society". Resilience comes from each individual agent. However each individual agent (human) is operating within a group.

Resilience = MIND + NETWORK

The resilience from every individual is a combination of his mind and his social networks. The mind provides the lenses to which reality can be perceived, and the network provides information and social constructs that feed and shape the mind.

Resilience = OODA

Each individual adapts to its environment by performing continuous OODA-loops. John Boyd, a famous military strategist, created the so-called OODA loop to give us structure when discussing this subject. The loop consists of four steps: Observe, Orient, Decide and then Act. Observe: get information from the environment; Orient: make sense of the information in some kind of mental model of the world; Decide: choose your options; Act: perform the option chosen.

"Before the enemy airplane is even within visual contact range, the pilot will consider any available information about the likely identity of the enemy pilot: his nationality, level of training, and cultural traditions that may come into play. When the enemy aircraft comes into radar contact, more direct information about the speed, size, and maneuverability, of the enemy plane becomes available; unfolding circumstances take priority over radio chatter. A first decision is made based on the available information so far: the pilot decides to "get into the sun" above his opponent, and acts by applying control inputs to climb. Back to observation: is the attacker reacting to the change of altitude? Then to orient: is the enemy reacting characteristically, or perhaps acting like a noncombatant? Is his plane exhibiting better-than-expected performance?"⁵¹

OODA = Information + (social) constructs

The OODA-loop is depending on the information that arrives through the Observe step, and the mental models that are available in someone's mind in the Orient step.

⁵¹ http://en.wikipedia.org/wiki/OODA_Loop

In the context of social systems being affiliated with a certain social group brings a specific set of mental constructs with it. If you consider yourself religious, you are guided by a different mental model than when you are a Darwinian. The effectiveness of adaptation in social complex system can be considered depending on the quality and amount of mental constructs a person has as its disposal.

Network = Input for Information and (social) constructs

The social network is the network of people you have some kind of interaction with. It is the path to which information comes to you. It is the path to which new social constructs arrive into your mind.

Network = Output of Information and (social) constructs

By the final step in the OODA-loop (Act) you also provide output of information and (social) constructs into the social network.

Speed + Diversity = More Resilience

The faster you have quality information, the more effective your OODA-loop. Having multiple information sources and having more diversity into the network and mind makes you more robust against false or biased directions. Having multiple mental models to judge information against, provides you with a better change of successful adaptation.

Go To The Spike And Become Adaptive

by Ali Anani and Bas de Baar.

The image we like to have of our understanding of globalization is the one popularized by Thomas Friedman, that of a flattened world, in which economic development or potential are equally spread all over the world. Although we would love to believe this, the reality is different. "Globalization has changed the economic playing field, but hasn't leveled it", argues Richard Florida in his article "The World Is Spiky"⁵².

Using several different ways of looking at the globe results always in the same pattern: economic development is clustered, large urban areas create a so-called spike.

⁵² http://isites.harvard.edu/fs/docs/icb.topic30774.files/2-2_Florida.pdf

In Florida's opinion economic development is created by technology, talent and tolerance. These are known as the Three 3Ts Of Economic Development. These three factors create a proper environment for what he calls "the creative class"⁵³, the occupations that trigger economic development (Computer and mathematical occupations, Architecture and engineering occupations, Life, physical, and social science occupations, Education, training, and library occupations, Arts, design, entertainment, sports, and media occupations).

This clustering of people is a topic we discussed in the previous chapter. People have a social and economic need to sit close together. We also mentioned the need for performing OODA loops to enable successful adaption to changes.

By combining the mentioned observations we see that having economic development and being able to adapt are related topics. In other words, being on a spike means you are highly adaptive, being highly adaptive puts you on a spike.

Back to the Three Ts Of Economic Development:

- Technology provides fast and easy access information.
- Talent provides fabulous agents in your network (great minds)
- Tolerance provides open-mindedness for diversity and other opinions.

These are all ingredients for having fast access to diverse flow of information and social constructs. Therefore having a great OODA loop, resulting in incredible adaption. As long as these are timely and effective the resulting OODA loops and adaptation will have a greater chance of survival.

In the following example we illustrate how this might work.

Say you are living on a small rural village in Jordan, somewhere in a dessert. You have internet access, a telephone, you speak English and have all the skills that are in high demand. You don't know anyone outside your village. You start calling people up using the phone book and start by the letter A-Z... every week you learn one person that is connected with something you want to do.

You move to the capital, the city of Amman. You attend a small seminar and meet 100 people . All relevant people that can help

⁵³ <http://creativeclass.typepad.com/thecreativityexchange/>

you out in getting what you want. Those 100 people also know people, and because they are all in that city everyone's networks accelerate by the growth of anyone else's network. Being in the center of economic activity, being on the spike, acts like a tornado, it sucks everything to it.

The social network brings you information, an opinion of the information, perspective on the information. Connections between people emerge. But they also dissolve, either because of a changing need, but also because there is a limit to the amount of relationships a person can effectively keep. Actually, it is not just the size of the network, but of course also quality of the people in it. People on the spike have more choice of connections, and therefore can make a better selection of the connections that are kept.

Being on a spike increases the network in size and quality. Staying on a spike creates exponential growth of the network size and quality.

After a year you can move back to the rural village in the desert. You take your network with you. Creating your own small spike. You are reversing the process. You will need to create the conditions in which the other spikes emerged (remember the 3Ts):

- Attract talent (reach out to stimulate great minds)
- Stimulate diversity and tolerance
- Create technology infrastructure for information access and storage.

Change, Resilience And Acupuncture

Change is all around us. It always has been and it always will be. As a Project Manager you have to make sure your project team satisfies a defined business goal. Change within a project and its surroundings is a given. The PM should not question change, he should not resist change and he should not blame everything that doesn't go to plan on change. When change is all around us, this means within the project, the surroundings and also the Project Manager self. Change is not a separate entity. It's part of nature. And so are we.

There are two different ways to cope with change.

One way is to predict the future. To anticipate the precise impact of a change and prepare for exactly that event. But we are not that clever. We are hopeless inapt to get the whole cause-effect chain correct. For example, to reduce the amount of CO2 that causes the global warming, we need trees. Cutting trees in the Amazon is therefore not a good thing. However, old trees don't absorb CO2 anymore, so cutting them might be even beneficial. But cutting trees facilitates soil erosion, which makes it impossible for trees to grow anyway.

And now try to make a decision.

Another way to handle change is to have the ability to adapt to new circumstances. This is called resilience. Resilience is built within nature's structure. When snow falls onto a leaf, it simply bends, and the snow falls off. For a Project Manager one of the most important moments is the start of the project. The preplanning phase in which the structure of the project is created, determines the resilience of the project. Getting the proper balance between strategy, organization and feedback is essential.

While the project is running we have to keep our senses focused on the path that the project is going. Is it still in line with the overall business goal and within the constraints? For this purpose we can use all our traditional Project Management metrics like budget and schedule, we should pay close attention to the behavior of our team, but we should also sharpen our own mental abilities. Concentrate and sense the flow of the project.

If it seems that the structural resilience we put into the project is not sufficient, the PM can apply minor interventions. While the project is running on full speed, no large structural alterations can be made without severe disruption of the system. But small alterations are possible. Think in this respect about acupuncture. Acupuncture assumes the free flow of energy through the body. If barriers emerge, needles are put into place to remove the blockades. View your project as a group of people that interact along certain paths; the power, task and information structure. Interventions should be viewed as the removal of a blockade along one of those paths.

Create Resilience In Your Process By Following The Sun

Speed is one of the great enablers of resilience. If you can get feedback fast into your process, you can absorb changes like a vacuum cleaner.

Fast feedback enables resilience.

By making use of multiple time zones, you can extend the duration of a "working day". More can be done in a day. And if you do it right, feedback can be available faster.

"Follow The Sun is a type of global workflow in which tasks are passed around daily between sites that are many time-zones apart in order to reduce project duration. Thus, the work is "following the sun" and never stops."⁵⁴

Build in Asia
Design/Review in Europe
Test in South-America
Every day.
Every 24hrs.

Following the sun has additional benefits⁵⁵, all contribute to increased resilience:

"Access to global resource
Facilitate and enhance international partnerships
Pool skills and experience across all sites
Frequent peer checking leading to increased efficiency"

Globalization and virtualization create challenges.

They also provide the opportunities to overcome them.

I tend to forget.

⁵⁴ <http://en.wikipedia.org/wiki/Follow-the-sun>

⁵⁵

http://www.ukes.aerospace.gknplc.com/aesinternet/follow_the_sun_engineering.html

Brick Or Sponge: What Is The Stiffness Of Your Project?

Different road condition require different suspension systems and settings to a car. If you are driving on roads in perfect mint condition, you need a different level of absorption than when you are following a trail through the jungle or the dessert.

What conditions have the roads you drive your project on?

If you work under mint conditions you can create the perfect plan, centralize control and outline every detail in a procedure. You can hit the big red button that reads "EFFICIENCY".

If you drive in "EFFICIENCY" mode and steer through the jungle of Borneo, you will wreck the bottom of your car on the first turn. What you need here is absorption, the ability to handle unexpected disturbances; you need to hit the big green button with "RESILIENCE" on it.

When setting up the structure of your project, you have to determine the "stiffness"⁵⁶ of the structure.

Are you turning it into a "brick" or are you creating a "sponge"?

Are you going for efficiency or are you going for resilience?

You have to choose your settings for every element in your Project Potion:

- **Strategy:** What are the steps taken in the project, and what are the sequence and time frame?
- **Organization:** How is your project organization constructed?
- **Feedback:** How is the feedback to the stakeholders on the status and content of products and processes organized?

Most plan-driven methodologies provide you with enough clues to create bricks.

Letting your creativity run wild can provide you with all kinds of ideas to put resilience into your project.

⁵⁶ <http://en.wikipedia.org/wiki/Stiffness>

However, before you start tweaking those settings though, before you determine the stiffness of your project structure, map out the terrain you will have to drive through:

- Analyze the stakeholders and their interests and expectations (Stakeholder Analysis).
- Determine the potential risks that might exist (Risk Management).
- Use techniques to find the root-causes to complex problems (like Panarchy and systems view).

And only then create your project approach.

Black Swan: The Link Between Mind, Complexity And Resilience

For me, the most influential book of 2008 is definitely "The Black Swan: The Impact of the Highly Improbable" by Nassim Nicholas Taleb.

When you have seen only white swans in your life, you think "all swans are white". But it might be that you haven't seen every swan on the planet yet, and that a black swan exists, but only that it is very rare. Taleb defines a "Black Swan" as an highly unlikely event, but with an enormous impact when it occurs.

Two main themes of the book stand out. First the fact that people don't think black swans exist, simply by having seen only white ones. Some months ago, I referred to Taleb while explaining that

“... it is the human need to categorize everything. We just have to put the world around us in neat boxes. Taleb coins the term "Platonicity" for this phenomenon — "the focus on those pure, well-defined, and easily discernible objects like triangles, or more social notions like friendship or love, at the cost of ignoring those objects of seemingly messier and less tractable structures." We put a label on an event and use that knowledge to reason about the future. We use this mechanism on everything, including people.”

We need to put a value onto everything unknown. Otherwise we are becoming restless. We use stereotyping and labeling for filling an unknown mental void. As Edward Tufte explains⁵⁷:

"If you know nothing, take the average or use persistence forecasting. To describe something, observe averages and variances, along with deviations from persistence forecasting. Understanding, however, requires causal explanations supported by evidence." "Average" is meant both in the statistical sense and in the wisdom-of-crowds sense. "Persistence forecasting" is, for example, saying the tomorrow will be like today (and is often a hard forecast to beat)."

And the use of this kind of "average", a stereotype, a deduced label, is exactly the core problem of forecasting events. This brings me to the second main theme. Taleb spends a large part of the book explaining the difference between assuming a Gaussian distribution or a Fat Tail distribution for events or topics. It is really worth to think about this, so please read the next couple of lines, even if you think it will get boring.

Pareto And Gauss

If two people earn together \$ 1million per year, how many does each of them make? Most people would think half a million each. This would reflect a Gaussian⁵⁸ way of thinking. When considering the Pareto principle⁵⁹ ("20% of the people have 80% of the wealth") you would rather expect a division along the lines of 100.000 and 900.0000. Pareto's law is a type of Fat Tail distribution. This example is metaphorical. The central theme is that the Gaussian is centered around an average, and the chance of deviation from this average reduces quickly. With a fat tail there is not a real average, only events that are likely to occur, and event that are unlikely to occur, but who's effects are enormous in comparison with the likely ones.

Another example. You have a set of bugs to resolve and to plan. In a Gaussian way of thinking you would calculate the average time spent on a bug the previous time and use that as a metric to estimate how long the bug fixing will take. Assuming a fat tail you only know that the most bugs can be resolved very quickly, but only a handful of bugs take all the time available. If you pick a bug

⁵⁷ http://www.edwardtufte.com/bboard/q-and-a-fetch-msg?msg_id=0002XS&topic_id=1

⁵⁸ http://en.wikipedia.org/wiki/Carl_Friedrich_Gauss

⁵⁹ http://en.wikipedia.org/wiki/Pareto_distribution

randomly, you have a big chance you have one you can solve in a minute. But you also have a small chance it will take you a week.

With traditional project planning we use the Gaussian mindset.

But if I look at projects, information distribution, the importance of employees, skills needed, bug fix time, motivation, authority and many other aspects are not evenly distributed. They seem to follow more a fat tail occurrence.

Fat tail distributions are associated with randomness. The more events follow a fat tail distribution, the more random they are. The more random events a system has, the more complex it appears.

Yes, I am suggesting that the appearance of this type of distribution is linked with complex systems. And resilience in a complex system is an important way to cope with a world following Fat Tail Distributions.

That is why Tom Peters, the management guru, started chanting about⁶⁰ "resilience" directly after reading the Black Swan.

I hope you get a glimpse of how the "Black Swan" ties the limits of the mind together with complexity and resilience.

60

<http://www.tompeters.com/entries.php?rss=1¬e=http://www.tompeters.com/blogs/main/010405.php>

Chapter Nine

Panarchy: Complexity On Multiple Levels

Reality is difficult to analyze. Project Managers still have to eliminate root-causes to major problems though. How to analyze today's complexity? I found something worthwhile exploring: **Panarchy**. Its origin is in ecosystem management, where it is used for assessment on how ecosystems, social systems and economic systems are interacting. How complex do you want to go?

"Panarchy is a conceptual framework to account for the dual, and seemingly contradictory, characteristics of all complex systems – stability and change. It is the study of how economic growth and human development depend on ecosystems and institutions, and how they interact."⁶¹

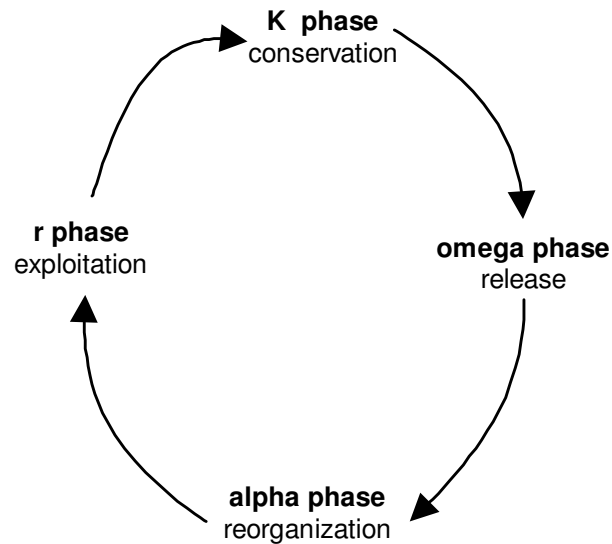
The Adaptive Cycle

Within Panarchy a system is going through four stages: growth (r), conservation (K), release (O) and reorganization (a).⁶²

⁶¹

<http://www.sustainablescale.org/ConceptualFramework/UnderstandingScale/MeasuringScale/Panarchy.aspx>

⁶² I have taken the descriptions of the stages from "*Assessing and managing resilience in social-ecological systems: Volume 2*"



- During the **growth phase** the system finds an abundance of resources available. Expansion and exploration of new opportunities are key concepts within this stage. "When new ecological spaces open up - due, for instance, to forest fires, or retreating glaciers, or many other things- resources needed for other species to grow are made available. There's more light reaching the soil surface when large trees are toppled, or burned to the ground, for example."
- "The r phase is transitory, and as the system matures, it is replaced by the **K phase**. Eventually slower growing, long lived species or entities enter the system. Resources become less widely available as they become "locked up" ... The K phase is sometimes called the conservation phase, because energy acquired goes into maintaining or conserving existing structure, rather than building new structure. In this phase, a few dominant species or companies or countries ... have acquired many of the resources and are controlling the way they can be used."
- "Often systems rapidly pass into a **phase** called **omega**. This is also referred to as the release (or creative destruction) phase because structure, relationships, capital or complexity accumulated during the r and K phases is released (often in a dramatic or abrupt fashion). ... Plants may die ... or a company may go bankrupt, releasing workers and decommissioning factories or offices."

supplementary notes to the practitioners workbook", which can be freely downloaded from the Resilience Alliance - bottom of the page <http://www.resalliance.org/3871.php>

- "The fourth, or alpha phase, is a period of reorganization, in which some of the entities previously released begin to re-structure but not necessarily as they were before. This phase can mark the beginning of another trip through an adaptive cycle ... Many new entities may enter the system, and innovation becomes more probable."

The adaptive cycle describes a system that has periods of stability and period of heavy change.

Blogging As An Adaptive Cycle

When I read it the first time it reminded me of my blogging. First I set out to explore all kinds of knowledge that could be beneficial to Project Management. The first couple of weeks I felt like a kid in a toy store: sociology, criminology, complexity, and even sociolinguistics. How cool! After a while you just start to focus on one or two topics that begin to dominate your time and effort. After a longer period of diving in the depths of these topics, I tend to get frustrated and demotivated. I hate not being able to explore the other subjects. This state ruins my motivation and has a negative impact on blogging. After the "breakdown" I reorganize my thoughts, close the subjects in some way or another, and start happily on a new cycle.

Projects In An Adaptive Cycle

Looking at projects the first example that comes to mind is this pattern that I have witnessed almost every time in projects that take longer (minimally a year). At first the resources are almost limitless: the real serious deadlines are not even on the horizon, budgets are fresh and hardly depleted, solutions aren't fixed yet so technicians can run wild exploring the possibilities. When the project is well on its way, certain stakeholders are starting to dominate the field, certain project team members are becoming more in demand than others (think "single point of failures") and a couple of topics are becoming "hot topics", and are therefore dominating the agenda. This is the phase that last the longest.

But at a given moment, people burn out or leave, power struggles between stakeholders escalate, the deadlines are appearing on the horizon and the bottom of the budget well is becoming visible. A large breakdown shakes up the whole project. This is the real project crises. And sometimes a crisis is needed to get a project going again, to get new blood, to get innovation. After new people

are brought in, stakeholders removed, deadlines moved and money poured in its like an r phase all over again.

Panarchy: How To Burn Trees To Save The Forest

For a long time, firefighters used the wrong strategy to attack forest fires. The approach taken was to extinguish the fire as soon as possible, as small as possible. If a small tree is on fire, put it out immediately. By solving the problem at the "individual tree level" you didn't have the issue on a larger scale, "the forest level".

After decades of using this approach, it had worked overall pretty well, however, when a fire broke out, it seemed almost unstoppable. Once the fire was active on a larger scale, forest or landscape, it went on a rampage. Before the "put out before the tree is on fire"-policy was used, smaller areas burned once in a while. The burning of the smaller forest area made the newly grown trees more fire resistant. It also created more natural open spaces; areas that have no plants or trees, so the fire hits on a barrier.

Two lessons here:

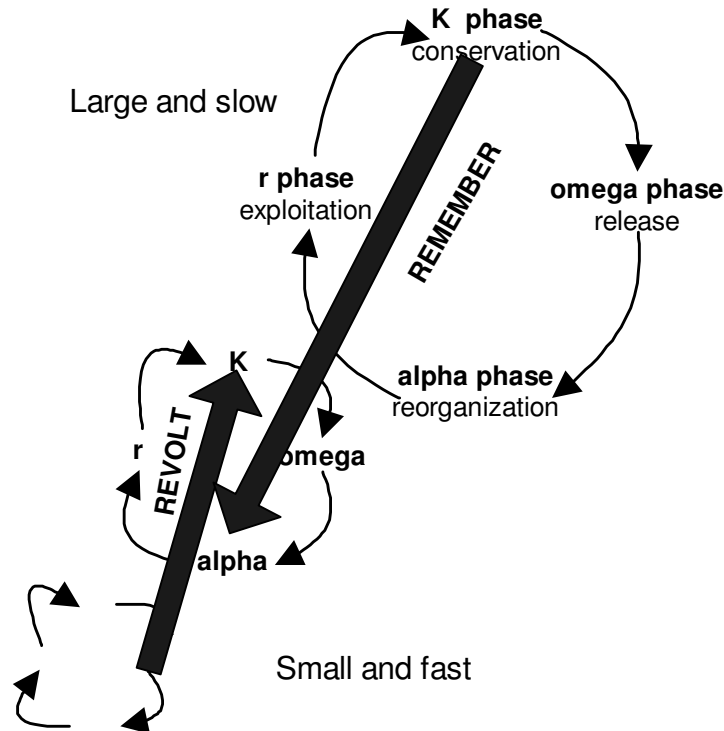
- You can view a system on different scales or levels (leave, tree, forest, landscape / person, team, project, organization, society), and
- The different levels interact.

If we connect these concepts with the adaptive cycle introduced the previous time, we can see that the larger scales will have slow cycles that can span a large time frame, and the lower levels have short, fast cycles. Although these levels can interact in a lot of ways, Panarchy focuses on "revolt" and "remember" as explained on SustainableScale.org⁶³:

“**Revolt**” – this occurs when fast, small events overwhelm large, slow ones, as when a small fire in a forest spreads to the crowns of trees, then to another patch, and eventually the entire forest

63

<http://www.sustainablescale.org/ConceptualFramework/UnderstandingScale/MeasuringScale/Panarchy.aspx>



“Remember” – this occurs when the potential accumulated and stored in the larger, slow levels influences the reorganization. For example, after a forest fire the processes and resources accumulated at a larger level slow the leakage of nutrients, and options for renewal draw from the seed bank, physical structures and surrounding species that form a biotic legacy.

Within a project, one can think about an individual getting demotivated about the procedures used (revolt) and almost sabotaging the process. The organization may oppose a certain set of standard processes to be used by the project at the same time (remember).

Panarchy: Resilience In Your Projects

Panarchy provides us a wide angle lens to look at projects. Originating from socio-ecological field studies this powerful concept lets us capture the project, the individual team members and the embedding organization in one go. Previously I discussed the ideas behind Panarchy: the adaptive cycle, multiple scales and the interaction of multiple scales. In this post, I'll explore what

these aspects mean for resilience, the capacity, e.g. of a project to adapt to changes.

The interactions between the different scales across a panarchy are important in respect to resilience. In terms of Panarchy, three elements are considered: the focal system (in our case "the project"), the higher scales (e.g. the company, or professional group, or society) and the lower scales (e.g. individuals or teams).

"The resilience characteristics of any focal system are in large part determined by the interactions of scales across this Panarchy, from the focal system to coarser scales and from the focal system to the finer scales." [*]

Resilience is the ability to handle disturbances of the focal system in such a way that the function of the system is not influenced. Resilience shifts attention from purely growth and efficiency to needed recovery and flexibility.

Interconnectedness

"Finer scales can enhance resilience of the focal system when they are allowed to change so that innovation and novelty can be introduced, in a controlled way, into the focal system. They can reduce the resilience of the focal system if they are tightly linked, such that disturbances rapidly spread from one fine-scale component to the next." [*]

The ability to handle change of individual team members can enhance the resilience of the project as a whole. However, if they are a tight clique this can have a negative effect: when someone is becoming demotivated, the whole group can be affected quickly. And if this breakdown of team members happens at the same time for a majority of the team, it can send the entire project into a breakdown.

In Panarchy lingua:

"... suppressing change at small scales creates a synchrony - sometimes called hyper coherence or over connectedness - that can ultimately lead to all smaller-scale systems entering a back loop at about the same time, creating a back loop at the focal scale or higher. This is known as 'revolt'. ... Avoidance of a back loop at the focal scale, requires allowing back loops at smaller scales. These back loops must be a-synchronous."

Diversity

You need diversity to enhance resilience. As explained at SustainableScale⁶⁴:

"Diversity is believed to be a key issue in restoring resilience – both biological and social diversity are important to the extent they contribute functional redundancy (i.e. similar services can be provided by some element in the diversity). But as biological diversity is lost, or as human systems and institutions become homogeneous and rigid, then the likelihood of restoring lost resilience declines."

In the current financial crisis, what you see is that all banks were using the same kind of strategies and constructs, and they are highly connected. So when a huge disturbance hits the banking system, they infect each other by the heavy dependencies and react all the same because of identical structures, lack of diversity.

With the dependencies of scales Panarchy brings also the concept of "remembering":

"... if our focal system were to go through a back loop, we most likely expect a new adaptive cycle to replicate the old when the coarser scale is in a K phase." [*]

When your company is running business as usual in the stable state, there are a few dominating ways "to do things". Call it "best practices", "standard methods" or "policies", whatever. Consider the situation a project is experiencing a breakdown. It needs to innovate the way it is running the adapt to disturbances. It starts a new adaptive cycle. However, the influence of the coarser scale, the company, is huge, and inflicts its policies on the project (the focal system). Therefore the adaptive cycle started by the project will be a copy of the ones it did before. If the higher scale is "society" you can think about "expected behavior" as this kind of "remembering".

By using Panarchy, I can talk about three levels at once. Levels that are all needed when discussing resilience in projects. It's the interaction of multiple scales that makes situations complex. But no worries. We know what to do now:

64

<http://www.sustainableScale.org/ConceptualFramework/UnderstandingScale/MeasuringScale/Panarchy.aspx>

"By trying to maximize use or control disturbances, humans can decrease the resilience of managed systems. ... disturbances needn't be considered in a negative way. Some degree of disturbance is actually necessary to maintain the resilience of the system." [*]

[*] (*"Assessing and managing resilience in social-ecological systems: Volume 2 supplementary notes to the practitioners workbook"*, can be freely downloaded from the Resilience Alliance⁶⁵ - bottom of the page).

⁶⁵ <http://www.resalliance.org/3871.php>

Chapter Ten

Adaption In Projects

Agile Or Plan-Driven Project Management: One Size Doesn't Fit All

There is not one way to make a great lasagna. Of course the basic idea is always the same, but depending on your taste, cooking skills and available ingredients you can have a lot of variations. Some use all fresh ingredients, make the pasta from scratch and spend several hours in the kitchen. I buy prefabricated ingredients and whip it up in several minutes. Both lasagna, but both very different.

From lasagna to software projects is a stretch, but I'll take my chances. Although some books may cause you to believe that there is one way to perform a software project, believe me, there isn't. There are many more ways. Just look at the number of methods that are available: Prince2, PMP, Scrum, Lean Project Management, and if you combine that with the software development methods that exist, you have plenty of combinations that may be useful.

In recent years some heated debates are in this industry about the "right" method. In one corner you have the traditional "plan-driven" camp, and in the other the new rebels, the "agile" supporters. In essence the first group believes you should define every step that has to be performed in detail up front; the actual task, the timelines, the organization and the procedures that should

be followed. This will increase the predictability, stability and high assurance of the process and the products it produces. You plan, you provide everyone the orders, and make sure everybody sticks to it.

The fact that a software project is not that predictable as everyone hopes, and the cost for this enforced structure is a higher overhead (a lot of time is spent on creating supporting products like plans, reports and documentation, stuff that is not or hardly used in the end result) sparked some new ideas about the “right” approach for software projects. Agile methods use the concept of “just enough”; just enough structure in the process to keep things going in the right direction, just enough supporting products like small plans, short reports, and, most importantly, agile approaches assume things change. According to this philosophy it makes no sense in trying to prescribe the future in plans, as the situation will change anyway. Instead they focus on creating a process that easily adapts to the situation.

Both camps say their approach works. Cannot argue against predictability and stability. Being able to adapt sounds also very wise. Is one of them lying? I will definitely say “no”. Every method has its merits. Every approach has a sample project where it worked very effectively. But not every project is the same. Different people, different tools, different end result, different project constraints, different circumstances.

Different circumstances require a different approach. If you need creativity to solve a problem or to create a design, you need an easy going, stimulating approach; if you are running towards a deadline to get towards production, a rigid, centralized controlled environment is more the way to go. Depending on the environment and general circumstances a project manager should construct a process and organization that serves him or her best. In the ideal situation you should be able to cut and paste a method together that suits your situation, use proven approaches in the exact situation you find yourself in.

Key question is "what make up the circumstances of a project?"

First of all, the desired end result of the project is a main factor. Creating a navigational system for a space craft would be very different from an application to organize your recipes. Not only would the application be different in size and complexity, also the requirements on stability and reliability would differ enormously.

Secondly, without hesitation I would say "people". In my personal experience all major problems concerning projects are caused by human stuff. It may be just the level of skill or knowledge of a project team member, but don't think too lightly about the impact of cultural and political influences on your project.

To give you a better idea, Boehm and Turner in their book "Balancing Agility and Discipline: A Guide for the Perplexed" have defined 5 dimensions that should affect a method selection:

Critically: if the end results has a failure in it, what would be the cost? The scale ranges from just the lost of comfort to the lost of many lives.

Personnel: the level of the skills of the project team members.

Size: the number of personnel involved.

Dynamism: the number of requirement changes per month (what is the level of how good people can define the requirements)

Culture: are people used to handle change, take their own initiative, or are people used to order, to have their work laid out in plans for them.

I list them, not to say that these are the only ones. Just to illustrate what kind of aspects can influence your choice to choose for a certain approach. And you have to choose. It is not only that the right approach may be more effective, it holds also true that a wrong method can sink your project to the bottom of the corporate ocean.

Letting people make their own decisions in an organization where this is not stimulated by their culture may leave you with indecisive team members, or worse, just decisions that will make them popular, that are socially acceptable.

It may seem that more roads lead to Rome, but don't forget that it is actually a maze.

Project Potion: The Recipe

Different project circumstances require different approaches to ensure optimum effectiveness. As mentioned over and over again

on this blog, it is the people who largely determine these circumstances, and you have to tailor your project approach to the particular situation. For this you can make use of techniques and tools from different existing methods by simply mixing and matching everything together in such a way that you brew the right Project Potion for the occasion.

Concocting a Project Potion consists of the following steps:

- You analyze the stakeholders and their interests and expectations.
- You analyze the products (technical stuff) you have to create.
- You determine the potential risks that might exist (Risk Management).
- You create a project approach that reduces those risks, and for this you have three main tools:
 - Strategy: What are the steps taken in the project, and what are the sequence and time frame?
 - Organization: How is your project organization constructed?
 - Feedback: How is the feedback to the stakeholders on the status and content of products and processes organized?

When performing Project Potion you will feel like an alchemist that throws all kinds of liquids into a jar, mixing it up, stirring it, and creating the perfect blend, a kind of secret potion. At one time, you may need Project Potion No. 4, and on another occasion you may find yourself completely happy drinking Project Potion No. 1.

Project Management And Feedback

As a kid I played this little game at school we called 'telephone line'. Twenty kids were hurled up into a circle. One started by whispering a sentence in the ear of his neighbor, so the other kids couldn't hear what was said. The neighbor would say the same sentence to his neighbor, and so on, until the sentence was 'round circle'. The fun of the game was comparing what the last one had heard with what was originally said. Mostly, they didn't even come close.

In project communication, feedback is the most effective tool a manager has.

There are three main reasons why feedback should be incorporated in the project:

1. To resolve an uncertainty (iterate to get the desired information)
2. To reassure stakeholders that their interests are met
3. To increase quality, needed when a possible failure creates damage (using feedback to get more validation steps for a certain software component to increase its reliability and quality).

There are a lot of project management techniques and artifacts available just for the purpose of feedback. Not every time it is clear in these methods that it actually is a feedback mechanism handed to you.

In the list below some samples are mentioned of artifacts that you can almost find in every method, and the kind of feedback it provides.

- **Requirements definition:** Feedback to the users how their requirements are noted after talking, analyzing and negotiation
- **Functional design:** Feedback to the user how their requirements are translated to a new system
- **Prototype:** Feedback to the user how their requirements are translated to a new system
- **Schedule:** Feedback on constraint "time"
- **Budget:** Feedback on constraint "cost"

But how do you provide feedback?

There are three types of medium that can be used to provide information for feedback:

- **Verbal:** nice expensive word for talking about the subject.
- **Written:** paper is patient they say, but also Word documents that never are printed can be considered within this category.
- **Mock up:** I am struggling for a nice word for this type, but prototypes, screen prints in PowerPoint and other means to visualize a future system can be considered as a mock up.

Every type has its own advantages and drawbacks. Verbal is fast and easy to do. However, if you need to fall back on an issue a couple of weeks later, you can only hope that everybody remembers it correctly. Writing will overcome this last problem, however, write one large document with no images and not every user will be able to plow through the document. Here some visual representation might help out like a small prototype that shows users what the general idea is of the new system. But, creating a mock up cost time, and after you have used it, you will throw it away; you must consider if it is worth the cost.

In the previous paragraph I already outlined the aspects that you should consider in choosing the right medium for feedback on the product:

- **Audience:** which medium is most likely to have the best reception;
- **Time it is needed:** the time frame in which the information in the feedback is needed. If you need a decision if a green button is better than a blue one, after you have shown it, you probably won't need it again; if the information serves a formal (contractual) purpose, you need it available for future reference; if you have an outcome of a specification of an interface, you need the field definitions available for future use.
- **Cost of feedback:** every medium has its own cost. Consider if the use of the medium is worth the cost.