Frustrated Developer's Syndrome

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Will your software development organization allow you to make a decision, or at least heed your advice? In other words, will your manager continue to make decisions for you and your team, leaving you with only one choice: implement the project plan even if you disagree with it?

Software projects always have constraints. Often, for technical reasons you will be unable to perform certain tasks. But all too often these constraints are artificial constructs imposed by upper management, and they make no practical sense. As a result, potentially superior alternatives are excluded from the decision-making process. Such constraints are not an isolated problem but rather one of many symptoms of a disease that can infect an entire organization. Because this disease reveals its most acute forms in software development projects, we call it the **frustrated developer's syndrome**, or **FDS**. (Virine, L. and Trumper. M. 2007 , "Project Decisions: The Art and Science", Management Concepts). FDS affects the "central nervous system" of a company, which is its **corporate culture**. It affects decision-making, efficiency, and productivity.

FDS manifests itself when managers and members of project teams are unable to contribute to major project decisions and are not properly rewarded for showing extra initiative and making good decisions. As a result, organizations lose the ability to produce high-quality, innovative projects at a reasonable cost.

Organizations that are free of FDS display certain attributes:

- Project decisions are made at the lowest level possible; a consensus of project contributors is the optimal way of decision-making.
- There is a results-driven environment; the organization provides effective incentives (not necessarily financial) for valuable project contributions.
- Members of a project team have a sense of autonomy.
- There is project commitment and a shared vision or goal.
- There is effective communication within the team, within the organization, and with clients; and there is mutual trust and mixed roles within a project team.
- Team members have high levels of enjoyment.

Is FDS really that prevalent? One glib answer is that if FDS were not prevalent, Scott Adam's "Dilbert" cartoon would not be so funny and popular. Unfortunately, many software development organizations are infected with FDS. Most executives are familiar with FDS, but have different terms for it. Disconcertingly, many do not think that FDS is an important issue or a reason for concern.

Why FDS is a Problem

When people are involved in simple activities - such as digging a trench, or carrying logs - you can motivate them to do good work with minimum incentives. However, motivation becomes more difficult when the activities involve creative thinking and decision-making. In these situations, different types of incentives are required to motivate a project team. Essentially FDS is a problem because frustrated project team members will not produce good projects.

Every job has incentives in place to motivate individuals to perform at higher levels. But in many organizations these incentives are structured incorrectly and provide little motivation. This leads to frustration and eventually to FDS. The table below presents compares motivators and incentives, as expressed by software project managers and team members:

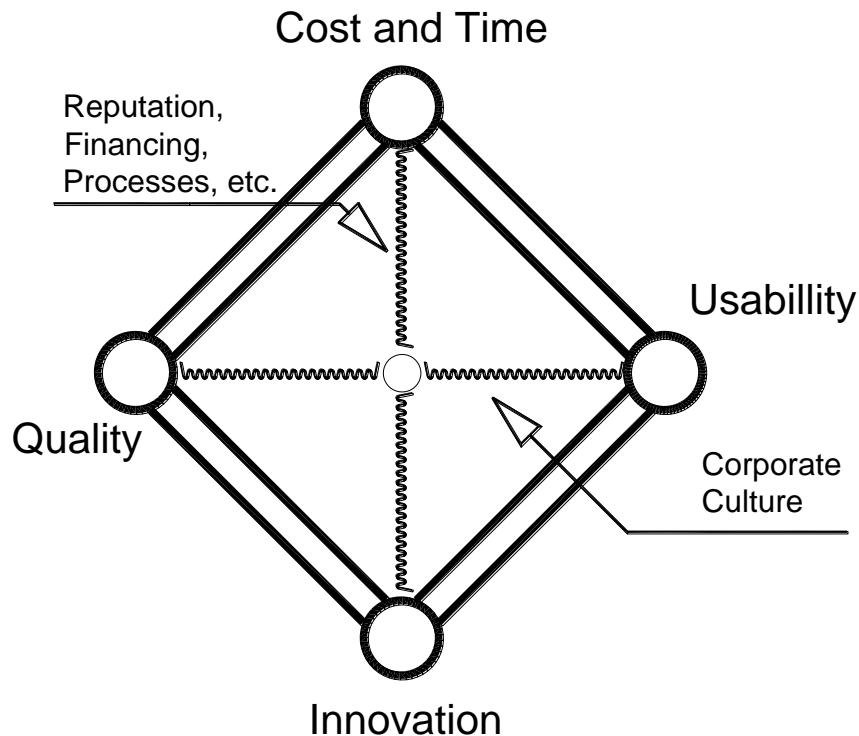|	Software Project Managers	General Population
1	Responsibility	Achievement
2	Achievement	Recognition
3	Work itself	Work itself
4	Recognition	Responsibility
5	Possibility for growth	Advancement
6	Interpersonal relationship	Salary
7	Advancement	Possibility for growth
8	Salary	Interpersonal relationship
9	Company policies and administration	Status
10	Job security	Technical supervision opportunities
11	Technical supervision opportunities	Company policies and administration
12	Status	Working Conditions
13	Personal life	Personal life
14	Working Conditions	Job Security

Motivations and incentives

Source: McConnell, S. 1996. Rapid Development. Redmond, WA: Microsoft Press.

As you can see from the table, purely financial rewards do not rank in the top five incentives for either project managers or team members. Others - "achievement," "recognition," "the work itself" - are more important. And if organizations do not understand these underlying motivations of their employees, they are ripe to come down with FDS. However, FDS is subtle and does not instantly lead to the failure of the

company, a fact that often leads executives to believe that inadequate emphasis on nonfinancial incentives is not a problem. Let's examine how FDS could affect an organization using a simple model.

There are a number of parameters that help to distinguish good projects from bad. Let's draw and connect the nodes representing project objectives, such as cost, time, innovation, usability, and quality:

Cost and Time

Reputation,
Financing,
Processes, etc.

Usabillity

Quality

Corporate
Culture

Innovation

There are other important objectives, e.g., safety and environment. Let us imagine a box with hinges at the angles, similar to the one we have just drawn in the figure above. The whole thing is unstable. If you apply a small force to one of the nodes, the rectangle will collapse. To maintain the stability of the box, you must somehow reinforce it with struts. In the case of a project, these struts or diagonal elements are the reputation of the organization, good project financing, well-established processes, corporate culture, and so on. The stronger the struts, the more stable the box. In projects, corporate culture is perhaps the most important element in keeping the structure from collapsing upon itself.

Now, let's assume that FDS has weakened the organization's corporate culture. The box will not collapse instantly, for the other struts will initially hide this weakness, but a few nodes will start to be displaced. The most common result will be an increase of cost and time - organizations with FDS usually deliver projects much slower and for much higher cost. Innovation and usability are usually compromised next, which will affect the quality. Software quality is achieved not only by applying quality-control procedures, for frustrated project members rarely deliver high-quality products. The model in the figure helps us to understand why organizations with FDS can survive for such a long time after the initial onset. The problem is that the weakening or failure of

one or a few components that contribute to a project's success will eventually lead to the failure of the other components and the eventual collapse of the project, or even the organization. If an organization consistently completes projects with cost overruns and delays, relationships with its customers will suffer, eventually leading to financial problems. This can take some time, however, which can lead to a false sense of security that the corporate culture is fine and does not need improvement.

How Does FDS Spread?

Most start-ups do not have FDS, and if they do, they quickly fail. As an organization gets over its growing pains and starts to expand, more people join the organization, more processes are established, and relationships between people and between project teams become more formal and complex. In many cases, FDS infection occurs as a company evolves from a start-up to a steady-state company. If executives are not familiar with the creeping effects of FDS, or if they don't pay attention to it, an organization can quietly become infected. In many cases, FDS infection occurs during an acquisition. If a company with FDS acquires an FDS-free organization and tries to impose its own corporate culture on the smaller organization, FDS very quickly infects the newly acquired entity.

There is a story about a young engineer fresh out of university who has just been hired by a design company. On his first day the manager asked him, "What do you want to do?" "I want to design a beautiful city with nice buildings, wide boulevards, parks, and canals," the engineer replied. "That's great," the manager answered, "but for now you need to design a staircase."

Three years later manager repeated his question. "I want to design a beautiful building with large apartments and a big lobby with a fountain," the engineer answered. "That's great," the manager answered, "but for now you need to design a staircase."

Three years later manager again repeated his question. "I want to design a beautiful apartment with big windows and a nice bathroom," the engineer answered. "That's great," the manager answered, "but for now you need to design a staircase."

Three years later manager again asked the engineer, "What do you want to do?" "I want to design a staircase," the engineer replied.

Often when an organization becomes infected with FDS, people who like a creative environment move out. Or as in the case of our young engineer, they become complacent.

Another effect of FDS is that people start concentrating on small technical issues, which are the only things over which they can exert some influence. The larger picture is often hidden from them by the management, which often does not communicate sufficient information about the project with the team. As a result, management's and team members' goals begin to diverge and over time can become completely different. For example, management's goal is to develop an application that is simple and fast. On the other hand, an individual programmer may have a different goal, wanting introduce a new programming tool that will improve the product. However, the tool is more difficult to use and makes the code so complex that it adversely affects the application's performance. But the programmer persists. Why? He argues that this new innovative tool

is "architecturally sound" or is "scalable," but in reality he simply needs to express himself, and choosing this software tool is the only significant decision he can make.

When top managers do not realize there is a problem with the corporate culture, they start behaving irrationally. When sales go down, they think they will solve the problem by shaking up the sales team. When this fails, they look at the development process and start to implement additional and often unnecessary steps. For example, if managers believe there is a communication problem within the organization, they often try increasing the number of meetings and duration of meetings. What this really does is distract people from their jobs as they get increasingly bored and irritated if the meetings start to creep into their lunch times. When this does not work, management will start to look at external factors: market conditions, competition, and other aspects that the organization cannot control directly, so nobody within the company is held responsible.

Failing all else, management starts to reorganize. After one or two reorganizations nothing improves, and in fact the situation appears to have deteriorated. This is because the reorganization itself is a project, which is just as infected with FDS as all the rest of the projects. Upper management makes decisions regarding the reorganization without consulting the project team members, and very often it becomes just another bureaucratic initiative. Finally, after FDS significantly reduces organizational performance, the company is converted to another form in one way or another. Large companies can sell assets or spin off an FDS-infected division. A company can exist for quite a while as low-producing entity by surviving on old clients and projects. The tragedy is that the executives who unwittingly worked so hard to spread the infection often get other assignments and will never realize that the dying organization is a product of their dysfunctional project management process.

Three Common Myths about FDS

Myth 1: Our organization is not suitable to an FDS-free environment.

Some executive say that they are not a "dotcom" or a start-up, they have run their company for many years, and the existing corporate culture works. In reality, all organizations can be infected by FDS because corporate culture is a function of interpersonal relationships, not the organization's type, size, or industry. Still, an environment that devalues motivators and incentives is much more common in big companies than in small ones

Myth 2: When companies implement organizational processes, it automatically leads to FDS.

Organizational processes such as those used by project management, including decision-making processes, have nothing directly to do with the development of FDS. In some cases, however, executives use the processes as an excuse to diminish the system of motivators and incentives, which leads to FDS.

For example, a company can establish a hierarchical reporting system. There is nothing wrong with such a system in and of itself; all well-organized companies should have one. But if the administrative hierarchy is used as a substitute for team decision-making and if small decisions require approval of upper management (which normally has only a remote idea of the individual needs of each team), it can cause FDS.

Myth 3: An FDS-free corporate culture leads to anarchy.

Some managers believe that they will lose control if they allow decision-making to occur at the project team level, encourage independent work, build a sense of autonomy for each team member, and allow mixed roles. They also think, for the same reason, that it is wiser to provide team members with as little information as possible. The experience of most successful organizations illustrates that an FDS-free environment does not lead to anarchy. Such a company can be well-organized, and decisions can be well- informed and balanced because everybody takes part in the decision-making process.

In reality, though, the situation is quite the opposite. FDS can be a primary cause of anarchy because management and project team members do not share the same goals. Management will try to do one thing, development will do another thing, and sales will have a completely different agenda. Upper management does not know about the state of the business because their subordinates are engaged in "creative" reporting. This is a classic case of anarchy.

The Fundamental Roots of FDS

FDS is not a natural phenomenon, like the flu. It is the result of management actions. The question that always arises is, "What were they thinking, why does management think that damaging corporate culture would improve the business?"

Could you imagine a world without FDS? Companies would be so productive that humanity would already have settled on Mars, eradicated cancer, and reversed global warming. The only drawback would be that Scott Adams wouldn't have any more material for his Dilbert cartoons.

The first thing to realize is that management does not set out to ruin the corporate culture. Rather, the roots of FDS roots lie in the human psychology of judgment and decision-making: management overconfidence, selective perception ("I see what I want to see."), inability to recognize personal limitations and mistakes, and many of the other biases we have discussed in earlier chapters. So, while good management practices and training may reduce the negative effect of these biases, unfortunately we cannot completely eradicate FDS any more than we can get rid of plagues or unwanted hair, because they are all an integral part of our existence.

Treating FDS

Even when top managers realize that their organization is infected with FDS, treatment is extremely difficult, and removing the contagion cannot be done without

major organizational disruptions. Making radical changes to the corporate culture is especially difficult for the simple reason that FDS-infected organizations usually do not support any type of initiatives, let alone ones that would attempt to completely transform the manner in which the organization conducts its internal processes. In most cases, successful organizational changes occur when new management instigates changes to improve company business. But remember, treatments work only if they fully involve everybody in the organization, not just the management team.

On March 27, 1977, two Boeing 747s, Pan Am Flight 1736 and KLM flight 4805, were preparing to take off on the only runway of Los Rodeos Airport in Tenerife, one of the Canary Islands. KLM Captain Jacob Veldhuyzen van Zanten was known as a first-class pilot, and was even the preferred pilot for the airline's publicity shots, such as KLM's magazine ads. As the KLM aircraft lined up for take-off, the Pan Am flight was still taxiing on the same runway. Due to the fog, the KLM crew was unable to see the Pan Am 747 taxiing on the runway ahead of them. As they lined up for take-off, the KLM crew received clearance from the control tower to fly a certain route after take-off. Captain van Zanten apparently mistook this clearance as the permission for take-off. The KLM flight engineer expressed his concern about the Pan Am flight not being clear of the runway. The engineer repeated his concern a few seconds later, but was overruled by Captain van Zanten, and made no further challenges to this decision. Shortly after taking off, KLM 4805 crashed into the Pan Am aircraft, killing 583 people and injuring 61. The Tenerife disaster resulted in the highest number of fatalities of any single accident in aviation history.

According to the subsequent investigation, communication problems and weather conditions were the primary causes of the accident, but another cause for the disaster was identified. Some experts suggested that the KLM captain, van Zanten, may have developed a kind of governance attitude that impaired the decision-making process in the cockpit. The flight engineer apparently hesitated to further challenge him, possibly because van Zanten was not only senior in rank but also one of the most experienced pilots working for the airline.

As a consequence of the Tenerife accident, the airline industry adopted changes in cockpit procedures. The hierarchical relationship among crew members were deemphasized, and more emphasis was placed on decision-making by mutual agreement. This is known as **crew resource management** (CRM)*,* and is now standard training in all major airlines (McAllister, B. 1997. "Crew Resource Management: Awareness, Cockpit Efficiency and Safety". Shrewsbury, England: Airlife). CRM training originated from a NASA workshop in 1979 that focused on improving air safety. The NASA research found that the primary cause of the majority of aviation accidents was human error, and that the main source of human error is the failure of decision-making in the cockpit. CRM training encompasses a wide range of knowledge, skills, and attitudes, including communications, situational awareness, problem-solving, decision-making, and teamwork.

Unfortunately, the software project management industry still trails aviation, fire safety, and other industries in understanding the importance of decision-making by all team members. Moreover, many consider the project manager, who is in most cases an administrative manager, as the ultimate decision-maker. This is a direct path to FDS.

As you remember, training can help to improve our decision-making skills. So training the project team to work together, to make decisions as a group, and to share rewards together, can help to battle FDS. If you have a health problem, you consult your doctor. If your organization has FDS, contact a project management consultant, rework your organization's training, and try to relieve the FDS symptoms.

But if you are not an executive and you work in an FDS-infected organization, you are in a very unfortunate circumstance. There is not very much you can do to treat it. Perhaps the most sensible course of action is to concentrate on improving the particular circumstances of your projects and, within your power, focus on making this the best possible environment for you and your team. This stategy can actually help to improve your local project environment, even if the rest of the organization is infected with FDS.

The Second Russian Revolution

Sometime around 1988, a few hundred mostly young Russian engineers and computer programmers met with industry experts to discuss what could be done to improve software development for personal computers in Russia. The first panelist argued that the primary problem was lack of hardware and that the government should undertake either the production or importation of more computers. The second expert thought that the government should establish R&D organizations specifically for the development of PC software. The last expert said that while he agreed with all other panelists, he did not believe that major government investments, establishment of state-run companies, or any other government programs were going to help the industry. The answer, he said, was to create conditions in which private individuals (engineers and programmers) would be able to sit in their basements (actually apartments in Russia), develop software, and sell it. For anybody involved in software development, this made perfect sense, but what the expert said was absolutely revolutionary and was almost seditious. Remember that it was 1988 in the USSR. Private enterprises in the Soviet Union were prohibited. One might say that the whole country had FDS.

The underlying message was that the solution to the problem was to allow individual initiative and private enterprise, which could not be done without a regime change. When the revolution occurred a few years later, in the forefront of this so-called second Russian revolution were engineers, programmers, and anybody else who wanted to make their own decisions and earn something as a direct result of their own risk-taking and initiative.

Please don't get us wrong. We are not advocating revolution, rebellion, guerilla war, or other types of insurgency in your organization. We don't want this article to be labeled as heretical and burned at the corporate bonfire. But what we do want to point out is that any attempt to set up an advanced project management process will most likely fail if your organizational culture is infected with FDS. Before undertaking any new major processes, the culture of your organization must be fundamentally sound.