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# Software Teamwork

Taking Ownership  
for Success





# Individuals

3. The Right Stuff	4. A Quality Focus	5. Facing Challenges	6. Proactive Effectiveness	7. Sustainability	
<ul style="list-style-type: none"><li>• Individuals are singled out for successes and failures</li><li>• Senior management is not engaged in the issues of the team</li><li>• Emotions are suppressed in the workplace</li></ul>	<ul style="list-style-type: none"><li>• Quality is assigned to a specific group</li><li>• Best practices are perceived as unnecessary</li><li>• Too much time is spent on rework</li></ul>	<ul style="list-style-type: none"><li>• A code and fix mentality exists</li><li>• There are different views of what “done” means</li><li>• Individuals are blamed for mistakes</li><li>• Evidence of issues is ignored</li><li>• Costs are slashed to weather economic storms</li></ul>	<ul style="list-style-type: none"><li>• Fudge-factors are used in negotiations</li><li>• Important items cannot be found</li><li>• People are juggling too many tasks</li></ul>	<ul style="list-style-type: none"><li>• Pressure tends to cause problems</li><li>• Brute force is used to solve problems</li><li>• Excessive work hours are logged</li><li>• External circumstances are blamed for failure</li></ul>	 <b>Trouble Signs</b>
<ul style="list-style-type: none"><li>• Team members show strong enthusiasm</li><li>• People step up as required to get the job done</li></ul>	<ul style="list-style-type: none"><li>• There is visible pride in a job well done</li><li>• Tasks are done appropriately, even when under pressure</li><li>• Products have a quantified definition of quality</li></ul>	<ul style="list-style-type: none"><li>• Team members acknowledge ownership of issues</li><li>• Tasks are done without procrastination</li><li>• “Impossible” is a 4-letter word</li></ul>	<ul style="list-style-type: none"><li>• Performance is measured</li><li>• Relationships are based on mutual respect</li><li>• Tough decisions are not deferred</li><li>• Reasonable follow-through is second nature</li></ul>	<ul style="list-style-type: none"><li>• The work environment supports your needs</li><li>• External factors are known and managed</li><li>• There is reasonable focus on quality</li></ul>	 <b>Success Indicators</b>
<ul style="list-style-type: none"><li>• Does our reward system value heroic behavior?</li><li>• Does everyone on the team participate enthusiastically?</li><li>• Are we open to external feedback?</li></ul>	<ul style="list-style-type: none"><li>• How do we define quality?</li><li>• Do we all see quality in the same terms?</li></ul>	<ul style="list-style-type: none"><li>• What can we improve from this bad experience?</li><li>• Do rationales for issues hold water?</li><li>• Are we oversimplifying issues?</li></ul>	<ul style="list-style-type: none"><li>• Do we understand our risks?</li><li>• Am I in control of my time?</li><li>• Do I understand what “done” means for my tasks?</li></ul>	<ul style="list-style-type: none"><li>• Am I equipped to perform my tasks?</li><li>• Am I able to take a break without falling behind?</li></ul>	 <b>Questions to Ask</b>
<ul style="list-style-type: none"><li>• Cultivate enthusiasm in your team</li><li>• Respect and appreciate the emotions of the team</li><li>• Apply strong leadership characteristics regardless of your role</li></ul>	<ul style="list-style-type: none"><li>• Take responsibility for the quality of your work</li><li>• Manage values and attitudes of quality when outsourcing</li><li>• Focus on the quality of people, process, and product</li><li>• Use retrospectives to learn from experience</li></ul>	<ul style="list-style-type: none"><li>• Translate pain into opportunities for change</li><li>• Express issues in the context of the receiver</li><li>• Capture all outstanding work in one system</li><li>• Focus on important rather than urgent tasks</li><li>• Maintain a consistent vision</li></ul>	<ul style="list-style-type: none"><li>• Collect a few simple measures</li><li>• Design an effective workspace</li><li>• Seek different perspectives for difficult problems</li><li>• Break down challenges into simpler steps</li></ul>	<ul style="list-style-type: none"><li>• Apply only enough pressure to motivate</li><li>• Understand what motivates each person</li><li>• Take reasonable breaks to recharge</li><li>• Carefully plan for holidays</li><li>• Focus on quality as the primary driver</li></ul>	 <b>Tools for Support</b>

- Leave contact information if you must, but warn people that this information is to be used only in extreme emergency. Threaten physical violence if that is what it takes.
- Give yourself a real break. Hanging out on the beach with your laptop or BlackBerry is really just extending your office space. Bring along a good book, one that's not work related. Take the time to connect with the people you are with and rediscover what's important in your life. Get away from the urgent.

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Next time you have an opportunity to take some time off, do some preparation. Take the time to reflect and to recharge those batteries. Step back and really smell those roses.

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### *Navel Gazing as Business Strategy*

We all hear about rousing business success stories, but we also know in the back of our minds that few start-ups get to the point where they can proudly tell people how they survived. If venture capitalists only expect to hit a home run with one out of every ten companies that they back, and go through hundreds of pitches before finding one that is worthy of an investment, well...you do the math.

What happens to all those that fail? There are probably more reasons for business failure than there are businesses that fail. There just wasn't enough cash to get the product out the door, or the industry was just too volatile, or the customer base just didn't understand the message. It is easy to come up with reasons why the company wasn't part of the latest acquisition or IPO.



The vast majority of all these reasons are just excuses. Blaming external circumstances while neglecting to look internally to see whether there is any way to pull the situation out of the water doesn't help at all. Nothing has been learned if you fail to look within to see whether there is anything within your control (or at least your influence) that you could do differently. My guess is that for most failed start-ups, there would have been plenty of remedies the team could have applied to address the challenges they faced.

Mature companies that measure their time usage average 40 percent to 50 percent of their time in rework.<sup>1</sup> The Hawthorne effect (when people know they are being observed in a study, their behavior or performance temporarily changes) may bring these numbers down from where they really are. Start-up companies that are running hard, working long hours, and being tossed around by a dynamic business environment can easily have much higher rework numbers. I measured close to 70 percent rework with one client. How many companies would have survived to be around today had they been twice as effective in spending their development budget? It is not how much you make, it is how much you save that makes you successful.



Young companies striving to build the next big thing often find themselves immersed in a sea of evolving standards, unproven technology, and fierce competition. Even in the most volatile of business environments, what matters most is not how volatile the industry is but how you deal with these challenges.

There's always value in considering the ramifications of your actions instead of allowing yourself to be chaotically jerked around by every potential change that comes your way. Although some would say that he who hesitates is lost, I've never encountered a situation in which a brief look before you leap has had a negative effect. External change needs to be tracked and managed. Internal change must be controlled.

It takes considerable analysis and research up front to be sure that you are actually building the right product, and just as much effort afterward to sell that product. Despite the focus of many start-ups, most customers don't care in the least about the technology under the hood. They are concerned about whether the product solves a real problem for them. If the message does not appear to have been received, perhaps there was room for improvement in how the message was sent.

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It can be easy and comforting to blame external circumstances for the challenges you face, but such an approach is a recipe for repeated failure.

Try looking inward to focus your energy on opportunities that are within your control.

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## Quality of Life

Some of us live to work, others work to live. Unfortunately, too many people are stuck in the former category, even though they might prefer to be in the latter.

There is always pressure to find those nasty bugs that we just can't seem to put enough band-aids on or to meet that looming deadline. There are individuals, and indeed entire sectors, that relish the thought of putting in the long hours to get a seemingly impossible project out the door on time. It can become a badge of honor, a cultural norm that makes those who are interested in a different balance in life appear to be misfits. From what I have seen and experienced, however, this is not a sustainable approach. Individuals will burn out, and organizations will face ongoing turnover challenges. Brute force doesn't appear to be the long-term answer to the quality question.



In an early issue of *Fast Company*,<sup>2</sup> there was an article about the team at the NASA Software Engineering Lab. They're the ones who build the software for the space shuttle and have an almost flawless record with their product. When they find a bug (and they still do inject bugs, but they find more of them faster), they fix the bug, they address that class of problems in their systems, and they address the process flaw that allowed that class of bugs to enter into the system in the first place. They work normal hours, they all have lives outside of work, and they develop some of the best software in the world.

Every time I relate that story to a group, there's someone who asks, "What about those failed Mars missions from a few years back?" Those systems were actually built by NASA's Jet Propulsion Laboratory in an era when their mantra was "faster, better, cheaper." They pumped out projects at a fraction of the cost of previous systems, resulting in a significant increase in newsworthy failures.<sup>3</sup> Clearly, the emphasis of their mantra was "*faster, better, cheaper.*" Unfortunately, major disasters on the job tend to spill over into home life, and there are reports that much of the team's fun vanished along with the funding.



To some degree, the NASA SEL is immune from the challenges that the JPL faced. They have no real competition and are not in a race to be first to market. With a clearly identified platform, less-novel innovation, and a

manned spacecraft that requires a greater emphasis on quality, the SEL can be seen as having a rather cushy job. What they do is still rocket science, however, and it is pretty clear from the drastic performance dip at the JPL that an emphasis on quality will make a difference.

Fortunately for the Cassini spacecraft, the project was so large and Saturn is so far away that the mission largely predated the “faster, better, cheaper” initiative. Fortunately for Mars, the JPL appears to be learning from its mistakes.

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Faster, better, and cheaper can indeed all happily coexist, but it depends on which of the three adjectives gets the emphasis. With better as the driver, faster and cheaper are often content to tag along for the ride.

The quality of the approach we take to developing software significantly impacts the quality of the products we build and, in far too many cases, the quality of our lives.

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## *Summary*

There will always be pressure to perform on the job. Often, this pressure takes the form of long hours and diversion from your other priorities. Although it is reasonable to expect some bursts of effort to get a project out the door, we cannot sustain a breakneck pace forever.

We need to be able to balance our lives and to take a break from a constant focus on the workplace. Without this balance, our productivity will suffer, and the side effects will spill over into our personal lives, too.

We must focus on the quality of our work environment, ensure that we are managing to preserve what is important to us, and recognize that we must pace ourselves for the long haul.

### **How Is This Relevant?**

**Priorities.** What are the most important factors for you: Are you in an environment where these important factors are being properly tended?

**Reasonable workloads.** How many hours in a typical week are you focused on work? Are you sacrificing other areas of your life to do this? Is your efficiency on the job suffering because of the effort?

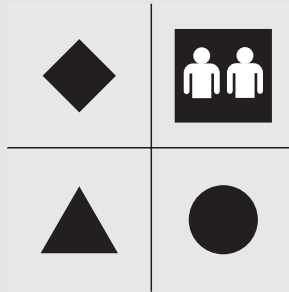
**Time off.** When did you last take a vacation or break without thinking about work? When you are out of contact with e-mail, do you get antsy? Do you protect any activities that help you distract your mind from the workplace?

## *References*

1. Steve McConnell, *Rapid Development, Taming Wild Software Schedules* (Microsoft Press, 1996). This summarizes findings from Barry Boehm and Capers Jones, and higher measures have come from other studies.
2. Charles Fishman, “They Write the Right Stuff,” *Fast Company*, December 1996.
3. A number of Web sites address the failed JPL mantra and the decision to return to the “standard” approach for space missions. One of the better sites is [www.findarticles.com/p/articles/mi\\_qa3622/is\\_200007/ai\\_n8887228](http://www.findarticles.com/p/articles/mi_qa3622/is_200007/ai_n8887228).

## PART THREE

# Groups



As we progress down the path of working as a team to solve problems, we quickly find that many problems are beyond the capacity of any one individual to solve. We must collaborate.

When we interact with others, even before we work together as a team, we are already dealing with the relationships within the group. One of the most challenging elements within relationships is the complexity of communication.

A deep, true common understanding is a difficult ideal to obtain, as each person brings his or her own perspectives, motivations, and expectations to the situation. We as participants within the group need to appreciate this diversity and learn to harness the value of these diverse contributions, while carefully managing the conflict that these differences will often unveil.