

High Impact Projects

A Newsletter About Getting Important Things Done.

How to Dig Out of a Technology “Black Hole”

Flailing Internet Project Brought Under Control, Capital Spending

Reduced by \$14 Million in Three Months

Consultant’s Bill Reduced from \$700,000 to \$400,000

in Three Weeks

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Is This You? You are new to the executive team of a Start-up. You were hired for your business skills – not your technical skills – but you see trouble looming. Your predecessors have retained a consulting firm to design and build your new software product. You see lots of paper, lots of meetings, lots of activity, lots of techno-whiz-bang demonstrations, but your gut tells you that solid progress is not being made.

The current estimate from the consulting firm shows that it is going to take \$17 Million to bring this product to market. You might be able to raise the \$17 Million, but you have a nagging suspicion that the money is not being spent effectively.

Have you ever been in such a situation? What steps did you (or would you) take to work through this problem? This is the situation that Charles, the CFO of a start-up faced in the Fall of 2000. Charles had the good sense (and great taste) to hire me to help work through this situation. What follows are the lessons we learned and some dramatic illustrations of useful concepts.

Additional Symptoms You May Have Seen Before: I’ll list some additional symptoms with the intent of helping you recognize these types of situations.

Credenza-ware: Credenza-ware is characterized by high poundage of paper, charts, tables, diagrams and graphs, make-work for “green bean” consultants, and the disguising of any true value in 37 layers of “techno-speak.”

Founder’s Buddy Chosen: The consulting firm had been chosen because the Dallas branch manager was an old buddy of our company founder. Apparently, this relationship was the entire due diligence upon which the choice of consulting firm rested.

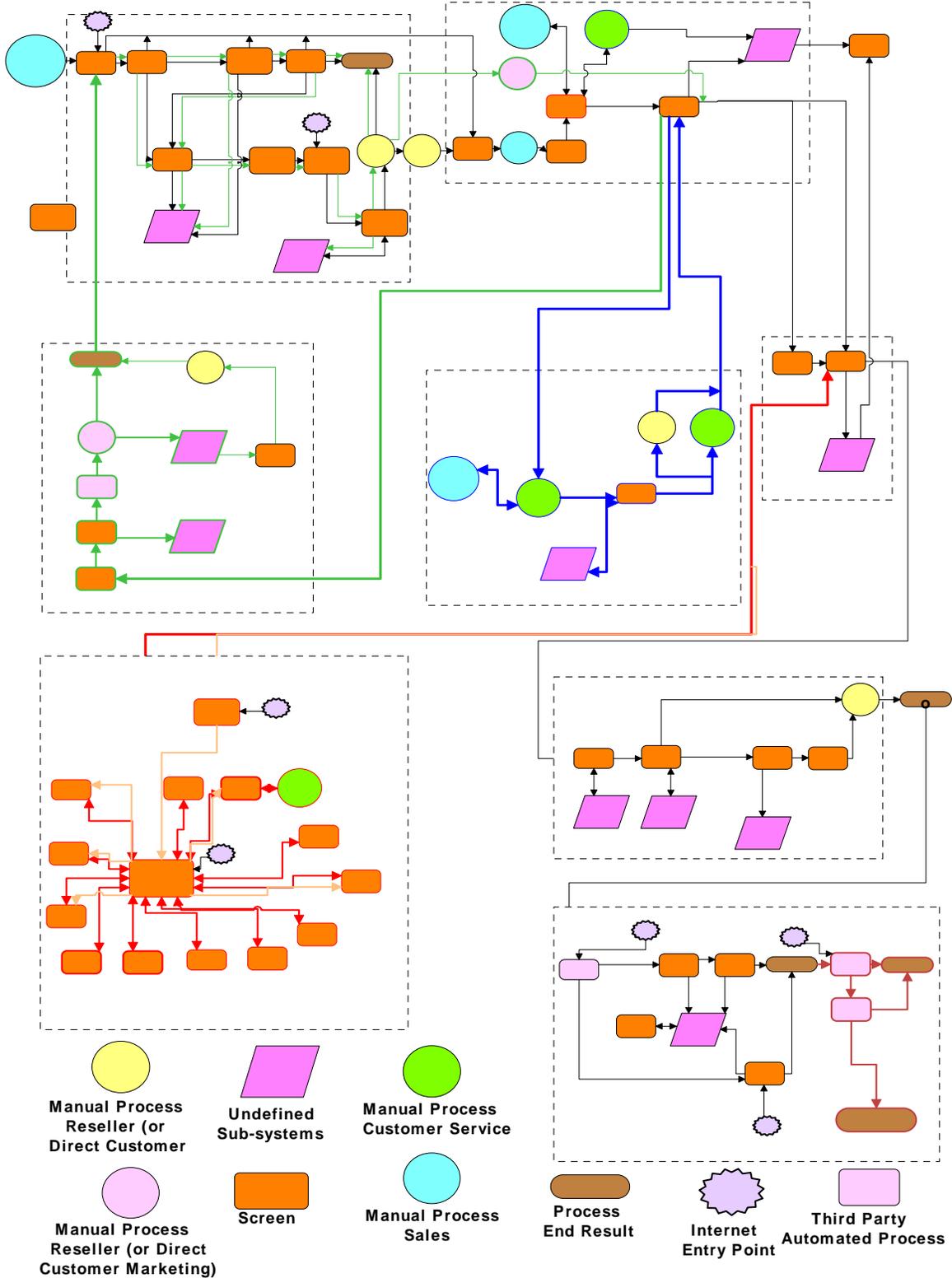
Glib Techies With Beautiful PowerPoint Presentations: This consulting firm had a bunch of glib “techies” that could razzle-dazzle with the best of them. Their Power Point presentations were beautiful and confined to three bullets per page.

Methodology Not Being Used: As I began to investigate the situation, I realized that the consulting firm had a methodology on paper but it was not being used and certainly not providing any meaningful link to overseeing the work.

No Meaningful Link To Business Priorities: As far as I could tell, the reports and documents they were generating were simply a collection of bullet points that they made up as they went along. I could see no linkage to the overall plan, strategy, goal and control mechanisms for the project.

Project Management and Basic Oversight Mechanisms Deficient: The project manager was clearly unqualified. No quality assurance mechanisms or audits were in place. I asked for an issues list and found that they had abandoned the maintenance and management of issues several months earlier. There was no effective mechanism for reporting against the completion of milestones.

Process Flow Storyboard



No Documentation of Substantive Decisions: One of the most annoying symptoms was that the glib techie would come into the conference room, sit on the table cross-legged and talk to the customer about what would and would not be included in the system. He did this all in his head, and never made a single note about what would be included in an immensely detailed and complex product development effort. As you might imagine, there were substantial gaps and disagreements on what had been committed to.

Our Problems: Internally, we had our own problems. We had a “big-idea” founder, who was short on management skills. He was losing credibility with his key subordinates, “shooting the messenger,” screaming, yelling and exhibiting no capacity for detail. (In fairness to him, I should mention that he was under tremendous stress.)

Working So Hard We Were Making Mistakes: Our whole executive team was working so fast trying to raise money and find customers that material errors were being made. As an example, substantial typos were present in the business plans sent to venture capitalists.

No Agreement on What We Were To Produce, Who Would Do What: The end product we were trying to produce was fuzzy, undefined and drifting. “Who will do what” was not clear and certainly did not descend into action.

Meetings involved constant interruptions, digressions, going a million miles an hour, unfocused and un-prioritized.

Does Any of This Sound Familiar? I describe these symptoms in some detail because many organizations face these same problems in dealing with large technology projects. Following is what we did to help turn the situation around.

Stop the Bleeding: Charles directed me to evaluate the consulting firm and produce a report on their deficiencies. I also reviewed the representations made by the consulting firm in their contract, to see if they had performed as they represented. As we expected, their contract included commitments and promises that they were not keeping. Armed with this information, we hit them between the eyes and demanded a \$300,000 reduction in the amount we

owed them, which they ultimately had little choice but to accept.

Turn the Credenza-Ware and Techno Gobbledy-Gook into a Useful Software Specification: My main task was to help the technical and marketing team turn the 400-page Credenza-ware specification provided by the consultants into something that could be reliably used. Our top priorities were to clearly define our product and what it would take to bring it to market. We used three primary tools to sort through the mass of information and turn it into something useful. First we identified the process flows necessary for our customer to buy and for us to fill that purchase. Then we laid out the software screens necessary for each step along the way. Finally, we produced “use cases” to clearly and specifically illustrate each unique usage of the system by customer and internal personnel.

Staple Yourself to an Order: I have found this technique useful on a number of occasions when I step into a new situation. I imagine that I am an order and walk through the entire process from sales lead to collected invoice. Key steps include how sales people find and close the order, pricing, closing the sale, fulfilling the order, invoicing and collection.

This initial step helped me understand what our system needed to do. I find it important to use very large wall charts and to lay out all the steps in easy to understand descriptions. By the time we were done, this wall chart had a half dozen people continually referring to it as the most commonly understood and agreed upon essence of what our system was to do. Software can be purchased to create these flow charts for \$200-300. I prefer to print the charts out as a whole on a special printer called a “plotter,” which can print charts as large 36 inches by 48 inches.

The Storyboard Concept: Some people call what we did “storyboarding.” Refer to the above drawing, and call it whatever you prefer. The key is that complex situations are reduced to a series of understandable sequential steps that can be put up on a wall and make sense to all the parties. I found this particularly helpful because it forced our technical team to think through 11 key areas that had not even been addressed. These areas are denoted by the “pink parallelogram” symbols in the chart.

Created Screen Flows to Further Define the System: We took our initial process flow and began adding the detail step of identifying each computer screen that would be necessary at every step along the way. Many of these screens had already been identified by the consulting firm, so we simply extracted those definitions and used them. This gave us much further clarity and specifically identified who needed to do what. Each screen was given a name and a number and was related back to the work necessary to program it and bring it into reality.

Include Both the Key Business Process Steps and the Key Technology Process Steps: Take a look at the legend of the Process Flow Storyboard. You will note that symbols include circles for manual processes, rounded rectangles for screens, parallelograms for undefined subsystems, etc. A key benefit of this chart is that it represents the key steps that have to take place on both the human side and the systems side. Frequently I see non-technical people fall into the trap of focusing only on the human business process. I also see the technical folks focusing only on the systems, screens, bits and bytes.

This drawing was something of a breakthrough for me because it is the best job I have ever done of creating a chart that illustrated the key steps on both sides. Note that this drawing went through a dozen revisions – don't expect to hit it right on the first try.

Create “Use Cases” to Clarify Each Specific, Individual Use of the System: Picture one of those home shop tools that has several power tools built into one large bench. They frequently include a table saw, a drill press, a lathe, a sander, etc. Now imagine that you are the engineer that must design such a product. Designing the big chunks of these power tools is relatively easy. A step that could be easily overlooked, however, is the step of how you convert the table saw into a drill press. If you do not adequately think through the steps, you could easily find that you have a perfectly functioning table saw, but a drill press that will only drill holes one inch deep.

In this example, the “use case” of “conversion from table saw to drill press” is very important and potentially easy to overlook. In software development, which is far less tangible than

designing a physical product such as a power tool, the chance for error is even greater.

Ten Steps or Less to Define Each “Use” of the System: The discipline of “use cases” is, simply put, to require the software designers to identify and break down every possible usage of the system into a series of simple steps (ideally ten or less.)

In our case we identified about eighteen major use cases with a handful of subsidiary use cases. We broke each case down into simple steps that the user of the system could understand. We managed to keep each use case to thirteen or fewer steps, which was acceptable under the circumstances.

As you might imagine, 80% of the value of the system for customers came from 20% of the use cases. This is where we directed all of our attention, to make sure we had the best possible system design for the critical 20%. I now consider use cases an absolutely indispensable step in software development.

Do Not Allow Programming to Start Until the Process Flow Storyboard and Use Cases Are Complete: One of the things we did right was to not allow software to be developed until our storyboard and use cases were completed. This is a standard policy that I use in working with clients. I have seen this simple rule change the percentage of software programs that have to be rewritten from 90% to 10% overnight.

Improved Communications and Discipline: Charles and I worked hard at establishing regular weekly meetings to improve communication, review priorities, review action items and assist people in staying focused.

Put Project Management Processes In Place: One of my other major tasks was to define a project management and oversight mechanism for all of our efforts. The basic project management steps of requirements, design, cost estimating, programming, testing and production deployment were easy and straightforward. A harder challenge was that of enforcing changes and enhancements to the product. We managed to get agreement that change control was necessary and important, however we did not have time to fully implement a change management system.

Results: The above efforts resulted in a clearly understood, streamlined product definition that was

clearly focused on the needs of customers. We had established regular meetings to remain focused and prioritized. The technical team was changed from a fragmented set of efforts going in multiple different directions to a group of team members who understood what they needed to do and agreed to accomplish their parts in concert with the whole.

Charles, as the master cruncher of numbers, concluded that we had reduced the capital required to bring the product to market from \$17 Million to \$3 Million. We had also successfully negotiated a \$300,000 reduction in the consulting firm's fee.

The bad news was that we had the misfortune to be needing to raise money during the stalemate of the presidential election results in Fall of 2000. Venture capital funding dried up and we were never able to bring the streamlined product to market.

Summary: The above results were by no means solely due to my efforts. We had a team of sharp, passionate people that, in the end, very much came

together working on the right things. The key concepts to take away from this case involve:

Stopping the bleeding

Process flows and Screen flows to understand what needs to be present in the software

Use Cases to thoroughly understand the capabilities the system must have before programming commences

Improved communications and discipline

Improved project management and product enhancement requests

Though we never got to see the end result of our labors, many of us learned a great deal about turning chaos into order. Hopefully, these concepts will be of some use to you should you face a similar situation.

Need further information?

Call us if you have questions or would like more information. This case is written as a teaching tool and is not intended to fully describe exact details or dialog.

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Project Management Lessons for the Next Wave of Technology

Each successive new wave of technology seems to bring a fresh crop of people that make similar mistakes. This case pointed out some patterns I have seen over the last two decades. Project management, though by no means a panacea, holds much hope for reducing these repeat mistakes. Following are some things from our experience that might tip you off to trouble on the horizon:

- **No “connective tissue” resulting in right action** – the consulting firm had vision and good intentions but the words never descended into right action
 - **Making decisions too fast**, resulting in bad decisions – The software consulting firm charged \$700,000 but probably delivered only \$100,000 to \$200,000 in value. A hallmark of the failed procurement was that there was no competition – the business was given to the founder’s buddy.
 - **The deal was too good to pass up** – we were contracting with one vendor who dropped their initial asking price from \$600,000 to \$50,000 down and \$400,000 of deferred payments. Their stock was way down and they were pushing hard to close any kind of sale. They were actually a credible firm with a valuable product. Our CFO knew the risks of potentially dealing with a volatile vendor, but thought the opportunity was so compelling he went ahead and signed. A week later we viewed a demo from another software vendor with a much better solution. Our CFO went into a frantic effort to cancel the contract, which cost us time, money and a potential lawsuit.
 - **Unproductive meetings:** The meetings were characterized by continual direction changes, time spent with no productive outcome, interruptions, digressions, “talk-talk-talk” but not descending into work or action. Everyone would go up to the whiteboard and draw their own model, but didn’t really listen to what others said. Our people did not really communicate and did not come together around common models, documents and agreements.
 - **Threw money at consulting firm without thinking it through** or clearly understanding what we needed them to do. The lack of oversight control and due diligence in dealing with this software vendor cost this start-up at least six months and \$500,000. It may well have cost them their life. Had the delays from this consultant not been encountered, they would have been seeking capital in a much more favorable market, and might well have survived.
 - **Story Board and Use Cases should have been done earlier** - After we completed the storyboard, process flows and use cases, the CFO and several other people said, “This should have been done three months ago.”
 - **A strong technical personality pushes forward with detail work** while the product marketing group is openly questioning whether we are working to deliver the right product. The strong technical person continued in this direction, even when presented with a written functions matrix needed for the product that marketing wanted to bring to customers. The strong technical personalities came into line. They ultimately agreed to let the product be defined by customer / market needs rather than technology elegance. This was accomplished by the CFO backing me in requiring my sign-off on the requirements document before the technology department was authorized to spend money on development.
 - **Slickness, buzzwords**, the appearance of the right stuff but a lack of substance.
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