

# **HF710: Managing the Development of Information Products**

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## **Assignment One: Report on Project Management Performance in Three Organizations**

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## ***Introduction***

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Many authors seem to be preoccupied with the debate over whether or not software development efforts require a unique form of project management (Otto, 356-363, Roetzheim 347-352). After examining the assigned cases and reviewing the available research, however, this student of project management believes that arguing the issue is futile. The most important (and possibly most common) challenge in managing any project is in eliciting and maintaining the discipline required of all team members to adhere to project management practices. True discipline facilitates the application of project management processes and techniques, which may or may not be even more important for success in the software development industry (Whitten, 47). However, it is an unfortunate and widely recognized fact that discipline, though a key ingredient, is often weak or absent in technology organizations.

The three cases discussed in this paper effectively demonstrate how a lack of discipline results in poor project management and negatively affects organizations. In these discussions, the top two or three causes of problems are identified and potential solutions are provided, based on information from the cases themselves, class readings, and additional sources. The closing portion of this report synthesizes the lessons learned from all three cases, and sums up the corrective actions necessary to minimize or avoid these problems in future projects.

## ***Southwestern State University Case Analysis***

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Although Southwestern State University's Web-based cost control system was completed by InfoProducts Design, Inc. and is now operational, it is obvious that the project was not successful. As in many organizations, this assessment is based upon both the project's contribution to the bottom line (cost versus return on investment) and the resulting system's value to its intended user audience. The three main problems contributing to the less than desirable outcome of the cost control system project are:

- The organization of the university (that is, the project environment).
- A poorly constructed project team.
- The lack of project-related processes.

The remaining sections in this case analysis address each of these problems and present specific suggestions for improvement.

### **The Project Environment**

The first problematic aspect of this case – the university's organizational structure or project environment – is the foundation upon which all other issues build. The reporting relationships presented in the case indicate that Southwestern State University has a primarily functional organization, but may be attempting the move to a matrix-like structure. For example, Anne Flammer is both a member of the Administrative Systems Development team (department) and is the project manager for the cost control system. Howard Duffy is a QA specialist reporting to both his QA group (department) manager, Sylvia Evans, and to Anne Flammer. When problems with the project arise, Phillip Roster, the Administrative Systems Development team (upper) manager uses his power in the traditional hierarchy to add additional resources to the project, but otherwise remains uninvolved.

The university's decision to alter their organizational structure most likely originated from an increase in the number of projects and/or from a realization that the existing environment was inefficient for project

work. Some characteristics of a functionally structured organization that can undermine project success include:

- Grouping people into specialized departments that each support one aspect of the organization, therefore fostering a narrowly defined view.
- A top-down flow of information, with high importance placed upon hierarchy and reporting structure.
- A design primarily suited for processes or products that can be completed using repeatable and consistent techniques (Graham and Englund, 11, 120-121; Greer, 9).

Although there are some benefits associated with functional organizations, they advocate behavior that is in direct conflict with that required for successful project work. Projects normally require expertise from a variety of functional areas, or a “cross-functional view of the organization.” Members on project teams must interact with other members who have different skill sets, and do so on a regular basis. Furthermore, participation in a project must also take place at multiple levels in the organization, from the person who writes the code all the way to upper management. Communication among players must be immediate if issues or changes are to be effectively managed; there is often no time to go through the chain of command and wait for a decision to make its way back down. Additionally, because the very essence of a project involves doing something new, projects threaten the status quo created and expected by a functional organization; they simply cannot support the change and innovation that is inherent in project work (Graham and Englund, 11). Yet another issue with a functionally structured organization is the amount of control department managers have over resources that may be required to ensure a successful project outcome. These managers naturally favor departmental efforts, relegating projects to the “back burner” and forcing powerless project managers to exert much time and effort simply attempting to secure basic resources (Greer, 8-9).

Unfortunately, the matrix organization can be viewed as a band-aid to the project problem in functional organizations. Keeping employees in departments but also assigning them to project teams creates an entirely new set of issues. Departmental efforts typically still take precedence over project efforts (as seen in the case where Flammer and Evans attend their own staff meetings instead of dealing with project problems), and conflicting priorities can cause employees to feel frustrated and anxious. With competing interests, no one on the team is fully dedicated to the project’s successful completion, though this would be the ideal arrangement. As before, project managers often do not have authority to reward project efforts, and thus cannot effectively motivate team members (Otto, 359). Meanwhile, departmental efforts (old behaviors) continue to be rewarded and used as stepping-stones to promotion and advancement (Graham and Englund, 12-13).

If the university wants to establish a sound matrix organization that will support project initiatives (and/or help transition the university to a project-based organization), everyone must put forth the initial effort required to do it right. In other words, the university must work diligently on “developing the appropriate organizational climate,” because all projects occur within the larger organizational framework and are thus affected by it in some way (Greer, 8; Morris, 46). While this effort may involve many tasks, the primary ways to accomplish this goal involve:

- Creating and staffing project management positions with skilled individuals, recognizing that these managers will be fully dedicated to project work.
- Ensuring that project managers have power equaling that of department managers.
- Establishing a process to resolve competing resource issues between department and project managers in a fair and expedient manner.
- Providing a way for employees to communicate priority conflicts to both managers, and for all three to quickly arrive at mutually beneficial resolutions.

- Devising mechanisms whereby project managers can participate in an employee's performance evaluation and thus, have influence over their promotion path.
- Rewarding teamwork as well as (or more than) individual performance ([Graham and Englund, 125, 130, 132](#)).

By tackling these tasks head-on, Southwestern State University's managers and other employees could create a work environment that is increasingly supportive of project work, but retains part of its traditional structure.

## The Project Team

One side effect of the inappropriate organizational structure (or project environment) was a poorly constructed cost control system project team. First, Anne Flammer, who began as the accidental project manager, was not well suited to the role. As the case indicates, Anne's strength was in her "product development know-how...and rooted her technical expertise." Although it is implied that Anne may have had an interest in project management, it is not certain whether she has been trained in the discipline. She did not appear to be proactive in the management of project issues, but rather, deferred to Phillip Roster or Eugene Forsythe when corrective steps were necessary. This behavior could be attributed to the fact that Anne had both departmental and project tasks to complete (unclear priority caused by the matrix organization) or due to the hierarchical reporting structure of the university (culturally-driven expectation). Because Anne defers project issues to higher management, Phillip Roster and Eugene Forsythe also can be seen as accidental project managers. However, not one of these three individuals seems to possess the skills necessary to be an effective project manager, nor do they appear to be dedicated to the project. Since the cost control system project was "only one of several major IT initiatives" and it included the additional complexity of collaborating with an outside vendor, it was extremely important for Southwestern State University to have a dedicated and experienced project manager who could actively monitor the project.

Next, Howard Duffy's strength was in software quality assurance. While he was able to analyze InfoProducts Design, Inc.'s code and quickly identify fundamental bugs during product tests, this was originally the job of an unnamed lead SQA technician. Therefore, the original "team" member (and his manager Sylvia Evans, who placed the person in this role) felt personally slighted and "outclassed" by Duffy's aggressive behavior. While one can assume that the original team member was somehow incapable or poorly selected, one can also attribute Duffy's behavior to his previous work experiences. Making the organizational and team situations more complex, Howard's previous work environment placed value on individual contribution, was relatively informal, and encouraged employees to take risks. Because he was never properly trained in the culture of the university, Duffy continued to operate as if he were still employed by a small start-up company, expecting to be rewarded for efforts that were actually harmful to the team dynamic.

Finally, the university's decision to contract the cost control system project out to InfoProducts Design, Inc., while its own internal developers "continued to build up their Web development skills," is also a factor contributing to this project's difficulties. There appears to be no one from this internal department on the project team though these individuals are trained, possibly available for the duration of the project, and may already be capably skilled in this area. Not only are these resources being carelessly wasted, but these developers are also becoming frustrated with the expectation that they "learn from" the blunders of an external vendor, and are losing motivation in the process. Furthermore, because the university is the customer of the cost control system and has immediate access to end users and its QA team, contracting this work out to InfoProducts Design, Inc. adds unnecessary complexity to the project. This arrangement

builds another level onto the communication hierarchy, and forces the university to concern itself with political issues in another organization (staffing, turnover, project priorities, and so on).

Research has shown that the individual strengths, weaknesses, personalities, and motivations of project team members can drastically affect the outcome of any project. Royce indicates that in project situations, the combination of these factors can “impact productivity...by a factor of four.” It is therefore extremely important that project teams be formulated in a manner that is balanced and yet is comprised of people with the necessary skill sets, at the onset of the project (43). Based on this data and the information provided in the case, the cost control system project team should have looked more like the following:

Person(s)	Role
Eugene Forsythe	Project Sponsor
Phillip Roster	Department (Upper) Manager
TBD	Project Manager
Anne Flammers	Technical Lead (coordinates university and vendor development efforts)
University developers	Software Developers
Vendor developers	Software Developers (from InfoProducts Design, Inc., if necessary)
Howard Duffy	QA Lead (coordinates efforts of other project QA staff)
TBD	Human Factors/Usability representative and/or Customer/User representative
TBD	Documentation representative
TBD	Software Training/Education representative
TBD	Support (Helpdesk) representative

However, this project team also requires some additional support. Forsythe and Roster need to be educated about their roles and their level of project involvement. The project manager should ensure that both upper managers have the information they require to answer their questions in a form that is understandable and will alleviate their specific anxieties (Graham and Englund, 141-147). Anne may need some training in project management techniques or special guidance from the project manager in coordinating the efforts of both the university and vendor developers. Both developers should be monitored regularly and held equally accountable for the quality and timing of their work (Whitten, 323, 329). The university and vendor developers should collaboratively complete initial research and planning tasks, including the writing of functional requirements and software design documents. If possible, the university developers should provide the vendor developers with a stubbed implementation of the product, allowing the vendor developers to act simply as implementers, though both will have architected the system to meet technical and business needs. This will also alleviate the necessity for skill transfer between vendor and internal technical staff (Whitten, 318). Howard’s team efforts need to be more readily encouraged, and he may also require some training in project management to be able to instruct other QA staff (if necessary). Finally, the team is missing some critical members in areas of human factors/usability, documentation, training/education and support, who could provide valuable insight into the project process.

Members of this project team should be fully dedicated to the project and remain on the team until the cost control system is completed. The urge to add, remove or otherwise replace members of the team should be carefully controlled and allowed *only* under specific, serious circumstances in which the team’s balance or effectiveness is threatened (Graham and Englund, 103; Royce, 45).

## The Project Process

Fueled by the unfavorable organizational structure and adding to the problems of the poorly constructed cost control system project team is the overall lack of process within the university. This can be seen in terms of the university's lax relationship with the vendor (including the unenforceable contract), the inability for project issues to be quickly escalated to the appropriate person for resolution (both within the university and vendor organizations), and in Southwestern State's training and communication procedures.

If the university enters into a project-based relationship with InfoProducts Design, Inc. or any other third-party (regardless of past relationships), the contract must clearly define the specific tasks to be completed as well as the schedule to which the vendor is being held accountable. The contract must also address the potential drawbacks of working with an outside vendor by outlining appropriate financial rewards and consequences for the quality and timeliness of the vendor's deliverables (Whitten, 318-322, 325). Additionally, a system for regular communication, problem escalation, and routine monitoring of project progress must be established up-front and applied equally to internal and external (vendor) members of the project team (Whitten, 323).

Lastly, the university's orientation program must do more than provide new hires with an unwieldy reference manual to educate them in the university's work culture, practices, and processes. Where possible, software development process terminology should be standardized and widely published to ensure that when problems arise, the seriousness of those problems is immediately recognized.

## **Select Software, Inc. Case Analysis**

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The Muse Manger project team at the newly formed Select Software, Inc. experienced several major problems during their product development lifecycle, most of which can be directly attributed to:

- Differences in the corporate strategies of DataTex and NetTrans (and other side effects of the merger).
- Incomplete product requirements and objectives.
- The inherent risk and effort involved in designing and developing a new product.

The remaining sections in this case analysis address each of these problems and present specific suggestions for improvement.

## Corporate Strategy

Although DataTex and NetTrans successfully collaborated in a number of product development efforts, it is apparent that the larger corporate strategies employed by each organization are fundamentally different. DataTex's strength in transaction processing encouraged the company to take steps to diversify their product offerings. Their corporate goal included the conception and development of architecturally higher-level products that would build upon their already successful technical foundation. By leveraging their knowledge of database transaction processing, DataTex could potentially "enhance the development of business transactions" by guiding Web application developers through the development process. The "integrated suite of authoring and application development tools" that Muse Manager was originally intended to be was a step in reaching DataTex's long-term strategic goal. DataTex took other steps

toward fulfillment of their goal, including the execution of focused hiring campaigns and support of the research that originally went into the Muse Manager project.

On the other hand, NetTrans (and the resulting Select Software, Inc.) appears to have a corporate strategy that does not include the kind of diversification that proved interesting to DataTex. The removal of Angus McDermott as a new product decision maker following the merger supports the idea that it is NetTrans' strategic focus that prevails in the new organization. Additionally, Select Software Inc.'s concern with the growth of the database market during the current and following year indicates that this is where the new organization's interest lies.

The first appropriate course of action for the newly formed Select Software, Inc. would have been to identify a new corporate strategy (vision) and to communicate it to others. Through widespread communication, all employees (that is, potential members of project teams) would understand the higher, common goal they are striving to achieve with each of their individual and collective project efforts (Graham and Englund, 33). Second, both the DataTex and NetTrans projects should have been measured by how well they aligned with the **Select Software Inc.** organizational strategy, before being started or continued. It is in this period where certain projects should have been "axed," perhaps not because of their intrinsic merit but because even their successful completion would provide little benefit to the new company. Upper management could have used a variety of techniques to create a consistent process for project selection and prioritization, as described in detail by Graham and Englund (41-49).

If the recommendations described above were followed, projects given the green light would have additional meaning to all project team members. The team would understand how their participation in the project helps fulfill the higher-level corporate mission. Viewing individual projects as part of a whole in this manner also assists in the definition of project-level goals, and provides guidelines for project managers working to prioritize and resolve competing project/departmental issues such as resource allocation (Graham and Englund, 37-38). Even if only the first recommendation was heeded (definition of corporate strategy with continuation of ill-fitting project), Caroline's negative feelings about the timing of the Muse Manager release would have been unquestionably justified. She may have been able to more clearly articulate that the project's objectives were unclear and contradictory, and describe how these issues were decreasing the likelihood that her project would be successful in the new organization (Morris, 41).

Instead of establishing a new organizational strategy and re-evaluating all projects to see whether the projects supported these goals, however, Select Software Inc. injudiciously permitted the Muse Manager effort to continue. Adding insult to injury, the new management insisted that the Muse Manager project follow the aggressive schedule that was originally created within DataTex. By doing so, Select Software, Inc. also failed to take into account that the fluctuating state of the organization would most definitely impact the project schedule. The re-evaluation and adjustment of the project schedule could have been justified based on adjustments to the core team alone. As indicated in the case, the marketing players were relegated to other projects, the project sponsor "squeezed out", and (as probably reasonable to assume) new team members brought in. Experience has shown that changing the structure of a core team disrupts the continuity of the project, even if the replacement members are equally skilled. The knowledge base and team dynamic that existed within the DataTex project team was gone, as evidenced by the fact that conversations and activities subsequently focused on technical issues to the exclusion of other important factors. A new core team needed to be rebuilt, an effort that takes time and essentially requires a restart of the project (Graham and Englund, 103).

Lastly, instead of stepping forward to sponsor and offer support to the project, Select Software, Inc.'s approach was to finish the Muse Manager project quickly so valuable resources could be reallocated to other, more promising projects that were in line with the new company's focus. The prevailing attitude

from management was unsupportive to say the least. The organization's commitment to the Muse Manager project was almost nonexistent, as seen in response to the request for "additional" (that is, "extraneous") resources. While attitudes are perhaps more difficult to measure objectively, it has been noted that any negativity in the work environment can greatly impact motivation and thus "severely jeopardize" project success (Morris, 39, 46).

## Product Requirements and Objectives

In addition to the problems created by the DataTex/NetTrans merger, the Muse Manager project also encountered difficulties stemming from an incomplete definition of their customers' needs. Because the project team did not understand the problems their customers were trying to solve, the team also failed to identify the target audience for the Muse Manager product. Naturally, the project team's ignorance in the areas of customer problems and audience definition further advanced into ill-defined product requirements and objectives. Caroline's thought that the product had potential could have been true, but without first developing a solid understanding of the customers and establishing a business case for Muse Manager, the project was destined to fail.

Unfortunately, the poor planning observed in the Muse Manager project is one of the most common and preventable causes of project failure, the consequences of which are captured in the following statement from Morris:

"The extent to which the project's objectives are not clear, are complex, do not mesh with longer-term strategies, are not communicated clearly, or are not agreed upon, compromises the chances of project success...there will be confusion, uncertainty, changes, cost increases, and delays..." (41).

During the project's inception at DataTex, some "informal" conversations with marketing professionals helped the team identify a preliminary audience and to uncover some potential risks to the project's success. In their concept memo to Angus McDermott, the team indicated that there was a need for a product like Muse Manager, and presented some supporting information. While the project team believed they had accurately targeted their audience during this conceptual phase, they also did communicate the need for validation, additional strategic research, and planning.

Unfortunately for those on the Muse Manager project team, that additional research would never happen. Any "qualitative studies" started by marketing team members remained incomplete. Information that could have been obtained from other sources (the consulting services group, for example) was also not readily available because of resource constraints. Left to their own devices, the technically heavy project team assumed that their good idea was marketable based entirely on the preliminary information. The team also made the mistake of believing that their customers would see Muse Manager the same way they did, because after all, they were all software developers and this was an exciting new product! Nevertheless, the Muse Manager team was not solely to blame for this lack of planning; several times, the new Select Software, Inc. managers indicated that additional research would do nothing but slow the project down.

However, executing and examining the results of a detailed market analysis provides product designers with invaluable information. Namely, such studies illustrate the economic viability of a new product in the market (Morris, 43). If it is determined that there is no market need and thus product sales will be low, the organization can either adjust the project definition and try again, or simply accept the fact that the product is not appropriate for the target market. Moreover, projects typically do require more time for

planning and analysis in the beginning phases, and it is not uncommon for upper managers like those at Select Software, Inc. to become nervous when no actual work (that is, coding) is being done. Project teams can and should spend approximately 40-65% of the project duration performing design and analysis tasks (Zells, 367). The first 30% of the project duration has been described as the time when it is appropriate not only to decide *what* to do, but also to decide *whether* to do it (Roetzheim, 348). Some upper managers (and even some project managers) hesitate to allocate and use this time for planning because they feel it is wasteful and obviously, wasting time is equivalent to wasting money. However, what these managers do not recognize is that planning time is not wasted time, but time that is being saved! If a project is completely defined, coding (for the most part) should be a relatively simple task. Thorough planning saves both time and money because it prevents changes to the product later in the development cycle, when they are more difficult to execute. Additionally, planning builds quality into the final product, which may save a considerable amount on maintenance and support costs once the software is released (Graham and Englund, 69).

George's comment that the team had "a solution looking for a problem" was key. In fact, the tendency to define a solution before defining a problem is discussed at some length in Graham and Englund, and is directly attributed to a "lack of emphasis on planning" (68). The very idea that customers should "get used to" a product or would buy it after being cajoled by sales people is ludicrous. As the case demonstrated, even an offer of significant discounts will not encourage users to purchase a product they do not need. Zells aptly states, even "if the project is on time and within budget and it solves the wrong problem, it is not likely to be of much use to anyone (362). Sadly, the Muse Manager project is a prime example of a poorly planned project resulting in a practically useless software application. Select Software, Inc.'s decision to bundle Muse Manager with another product that no doubt had other audiences, goals and purposes, must have only further compounded the problem.

Although no documentation was mentioned in the case, it is obvious that some documentation regarding product requirements and objectives should have been written. The product requirements document would have provided a way for Muse Manager team members to focus on their customers' problems *before* devising a solution. Such a document would have helped them to identify where their assumptions may have been incorrect, as well as other important issues before the project was underway. Potential customers (both existing and new target audiences) could have worked with the team in some capacity to verify that the requirements were indeed correct (Whitten, 225-231). Only after this document was completed and agreed upon should the Muse Manager team have started to document a solution to address the customers' specific problems. The team's solution would provide a clear definition for what the product would include; only after both documents were completed and consensus was reached, should project "work" (as managers know it) have commenced (Whitten, 241-246). By following this planning strategy, Muse Manager might have actually satisfied an important marketing need.

## New Product Risk

Support for careful planning at the onset of each and every project is justified by the fact that all projects inherently require team members to accomplish something new (Roetzheim, 351). Even if the audience definition is the same, the customer problems it solves, and thus the product itself, can be and usually are very different. Most projects also involve the use of new technology, or combine existing technologies in unique ways. All this novelty adds uncertainty to a project, increases the risk associated with it, and thus increases the likelihood that the project will fail (Graham and Englund, 68). As evidenced in the latest CHAOS report (2000), projects that failed or were challenged (completed with significant difficulty) are still over 70% (Johnson). Not surprisingly, project novelty has been presented as a primary reason for this high failure rate (Graham and Englund, 74).

Caroline and the project team recognized that Muse Manager was a breakthrough product (introducing an entirely new concept), but failed to completely understand what that meant from a project point of view. While the team initially indicated that the “newly integrated technologies would create steep learning curves...downstream,” they did not have a plan for handling this (and other) risk issues. Given the few risk factors that were originally identified within DataTex, the appropriate course of action would have been for the project manager to conduct a thorough risk analysis. This analysis would consider all risk types (including technical, schedule, cost, and dependency risks) down to the level of individual tasks. The tasks associated with the highest risks should have been discussed in depth, and a plan devised that would enable the project team to account for, minimize, or possibly avoid these risks. Examples of risk avoidance activities include the frequent use of prototypes, and simply allowing more time in the schedule for high-risk tasks (Roetzheim, 351).

Lastly, the highly creative atmosphere at DataTex that resulted in the unique Muse Manager concept was not carried over into the new Select Software, Inc. organization. As Graham and Englund point out, creative work “must incubate,” and projects involving high levels of “learning and creativity” will only thrive in environments that can support them. Often, the beginning stages of a creative project produce few concrete results, making managers nervous that the project efforts are wasted because nothing is being produced (77-78). As discussed in the previous section, this reaction by managers disrupts the group dynamic and forces the project team to produce tangible results, when they should focus on planning efforts. Such behavior only increases the project’s risks, obstructs risk avoidance measures, and greatly diminishes creativity.

## ***New World Computing, Inc. Case Analysis***

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Like many of the dot-com organizations now beginning to struggle in the marketplace, New World Computing, Inc. encounters many severe project management-related difficulties that threaten the very existence of the business. For the purposes of this discussion, however, these issues will be limited to:

- Poor leadership.
- Mismanagement of the project pipeline.

The remaining sections in this case analysis address each of these problems and present specific suggestions for improvement.

### **Leadership**

Although it is often overlooked, effective leadership is a critical component that significantly affects the outcome of projects and thus, the overall success of an organization (Whitten, 60). One can measure a good leader by his or her ability to perform a number of difficult and somewhat intangible tasks, such as:

- Being decisive (taking action).
- Seeking assistance when it is needed.
- Meeting commitments.
- Being flexible.
- Empowering others (Graham and Englund, 188; Whitten, 61).

Leaving the backgrounds of the two New World Computing, Inc. managers aside for a moment, it is clear to see from Al Rosenberg-Minsker and Anthony Maglioni's behaviors that they are deficient in every one of these important qualities.

Whitten quotes Donald McGannon's statement "leadership is action, not position," which is perhaps the simplest way of saying that decision-making is crucial to good leadership (59). Because Al and Tony formed the company, they had position but were not leaders in this respect. Neither Al nor Tony was very decisive about anything related to their new software business. The initial matters of the PULSE system's price, payment arrangements, and marketing approaches are just a few situations where Al and Tony failed to make proactive decisions. Al's reluctance to respond to his clients' concerns and establish ground rules even later in the case is also illustrative of his indecisive nature. Regardless of whether Al and Tony neglected to take action because they believed the issues would "just go away" or because they were fearful of making the wrong choices, management's procrastination only added fuel to the fires. Among other consequences, Al and Tony's indecisive behavior resulted in an organization that lacked energy, exuded inefficiency, and had persistent communications issues (Whitten, 63-64, 80). The obvious recommendation is for Al and Tony to have made *some* decisions regarding New World Computing, Inc. Even if erroneous in hindsight, Al and Tony's decisions would have provided these new managers with valuable lessons to draw upon in future decision-making situations (Whitten, 62). On the other hand, if Al and Tony's *informed* decisions were correct, they could have averted other, more serious problems down the road.

When feeling incapable or inexperienced, these entrepreneurs should have sought assistance from others who had the experience and skill they lacked because, as Whitten states, "tapping into the potential of another leaves you both to gain from the experience" (78). New World Computing, Inc.'s management could have greatly benefited and learned from individuals with marketing, sales, legal, finance, and project management experience. The obvious gaps in these areas not only made decision-making difficult, but also resulted in a highly unbalanced and disadvantaged team, making the entire organization vulnerable. Such gaps are typically harmful to team dynamics because they burden individuals with excessive pressure to perform (Royce, 43-44). Since the company was small and payment for such consultations was an issue, Al and Tony could have offered stock in exchange for services. Even if such an arrangement was not possible or acceptable, the money New World Consulting, Inc. could have saved (on the royalty rates, for example) by having a knowledgeable partner might have more than paid for any supporting services.

While both managers had numerous plans for the PULSE system and the market provided a good opportunity for the product's success, New World Computing, Inc.'s management was unable to meet any of their commitments. Al and Tony were unable to satisfy their clients by delivering products on time and within budget, and were also unable to keep promises made to their employees. This inability to meet commitments fosters an atmosphere of distrust, which is severely detrimental to projects and team dynamics in any organization (Whitten, 66). Moreover, such behavior is in direct opposition to the responsibility managers have to all associates (including clients, partners, and employees) to build and maintain honest relationships (Graham and Englund, 75). It is this author's belief that the issues of commitment might have been avoided (or at least better controlled) if Al and Tony had more effectively managed their project workload. If New World Computing, Inc. had obtained services in areas where experience was lacking, determined which projects had the highest possibility for success and then carefully scoped these projects, the organization could have met small commitments, forming relationships that could have carried them well into the future.

In addition to their inability to meet commitments, management's failure to be flexible (that is, to compromise) and to empower employees also caused major problems for the New World Computing, Inc. organization. The concepts of flexibility and empowerment are closely related because both require

management to transfer some of their control to others. Al and Tony's mistakes in this area are most readily demonstrated when New World Computing, Inc.'s funds are low and management has the option of retaining employees by issuing more stock. Tony is the largest offender in this category, not wanting to part with company shares that could very well be worth nothing if larger issues are left unresolved. The case also indicates that Al had problems with the amount of control he would have to release in order to attract private investors. What both managers failed to recognize is that flexibility and compromise strengthen an organization and its management, not weaken it (Whitten, 82). By increasing their employees' stake in the success of the company, Al and Tony might have encouraged more creative solutions, increased motivation, and so on. By releasing some company shares New World Computing, Inc. may have obtained funding, allowing them to acquire experienced and desperately needed resources. Though requiring Al and Tony to give up some degree of control, either option could have improved the company's overall situation and increased their chances for success.

As another example of management's need to maintain control, most of the information about New World Computing, Inc. resided with Al and his wife, Sarah. When Laura needed this information to complete her assigned tasks (that would ensure the continued operation of the company), she often felt frustrated because she could not obtain it. Whether Al positioned himself as an information bottleneck because he did not want to relinquish any control or because he did not trust his employees with the information, his behavior resulted in much hardship for Laura and for New World Computing, Inc. Had Al empowered his employees by promptly providing them with the information they required to do their jobs (or by actively assisting them when documentation was unavailable), he would have reaped many benefits from this effective management practice (Whitten, 63).

Finally, successful leaders are not made overnight. Becoming an effective manager takes time, and as previously noted, involves some degree of learning from previous mistakes (Whitten, 61). However, both Tony and Al had little experience as leaders, and they lacked the knowledge required to successfully run a software company. The first evidence of this is seen in Al's background, which is the German language. Working toward a master's degree, a Ph.D., and teaching the language for 8 years means that Al's wealth of experience is in this area. The time he spent working in a liberal arts discipline significantly outweighs the approximately 5 years he spent learning and working in a technical field. Furthermore, Al's propensity toward the creative, unorganized "hippie counterculture" was probably better suited to the liberal arts than it is to the sciences. The fact that Al never finished his Ph.D. program requirements could indicate that Al has difficulty following through with commitments or completing undertakings. Second, although Al did receive a master's degree in computer science, this author can say from experience that such degrees typically do not prepare one for the real world of software development. Oftentimes, the technologies learned are obsolete by graduation, and most schools offer few courses that go beyond hardware and coding skills. (Of course, this may be different now.) While some of Al's experience is computer-related, working as a systems administrator is very different from working in software development (or owning and managing a business, for that matter). Though Al may have successfully coded one prototype (with an undisclosed amount of assistance from a graduate assistant), this hardly makes him an expert in this specialized technical discipline.

Tony's background in Physics presents similar problems, although his scientific background may have provided some benefit when dealing with medical professionals. However, it is the mention of Tony's two prior business ventures that is the most interesting aspect of his biography. While one might think that Tony could contribute his prior experience as an entrepreneur, the case provides no information about the success of his other ventures. If New World Computing, Inc. is anything like the start-up company this student encountered, it would not be surprising to learn that Tony's other ventures also had unsuccessful outcomes.

## Management of the Project Pipeline

Ironically, Al's primary strength of convincing clients that they should work with New World Computing, Inc. may have only compounded his problems. Although "endless possibilities" can exist with many products, the combination of Al's salesmanship, exaggeration of the company's capabilities, failure to plan for project execution, and lack of resources (in all areas) quickly resulted in project overload for the small company. Instead of having a core team comprised of many people per project, one person (if that) was allocated to each project. As [Graham and Englund](#) point out, projects should not enter the pipeline until "resources are available to staff them adequately" (83). Successful managers should excel at selling their company's cutting-edge products, but must also be sure to communicate strategies, priorities and decisions to manage their clients' expectations ([Royce, 46](#)). An overly optimistic attitude in the initial stages of a project, without any objective checks and balances on its feasibility, only increases the project's risk factor ([Morris, 47-48](#)). Thus, the project overload that was in many ways encouraged by New World Computing, Inc.'s management only decreased the company's ability to meet its commitments, hurting its overall reputation and chances for survival.

To make matters worse, each New World Computing, Inc. project seemed to have different audiences, different scopes, and different goals. Al's plans for the PULSE system were "far-reaching", which might have been acceptable as a long-term strategy rather than a mandate for instantaneous success. His goal was to expand PULSE for use within any branch of medicine, while also expanding its capabilities ten-fold. Instead of planning for smaller projects, managing quality, and establishing trust with his clients day-by-day, Al seemed to want everything to happen immediately and without much effort on his part. Both Al and Tony had big dreams, but feared that detailed planning would restrict their creativity. Unfortunately for New World Computing, Inc., Al and Tony did not realize that detailed planning is exactly what was necessary to establish an environment in which creativity (and their organization) could flourish ([Graham and Englund, 77](#)).

## **Synthesis**

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Interestingly, what first appear to be unique cases with unique project management issues actually have quite a bit in common. Though general, these issues exist at the very heart of the project management discipline and therefore have far-reaching implications for project success. The difficulties our fictional characters encountered in their respective project efforts were primarily the consequence of instability in the following areas:

- Project planning and process.
- Project team.
- Project alignment.

Although the degree of instability varies in each of these areas and in each case, and numerous other factors contributed to project difficulties, these areas represent the core project management issues. At Southwestern State University, there was little planning or process for working with outside vendors, educating employees, standardizing communications, escalating issues, identifying risks, and so on. There was no dedicated project manager, nor a core project team consisting of individuals with a wide range of important skills that were assigned roles based on personal strengths. At Select Software, Inc., product requirements and objectives were neglected, leading to the production of software that could have offered so much, but ultimately provided so little to its users. Project team members were jostled by a reorganization that also shifted corporate strategies, and new managers ignored the necessity to re-align

projects with long-term goals. At New World Computing, detailed planning was taboo and projects were accepted on a whim, even though the teams that were required to complete them did not exist.

The obvious recommendation that would alleviate these situations is for each company to obtain a qualified and dedicated project manager as soon as possible. Once this person is an employee, he or she can more closely access any project-related issues plaguing the company and devise a plan for minimizing or eliminating these issues. Such a plan would most likely consist of small activities that work within the particular constraints of the organization, while slowly building up the processes that would encourage discipline and the personnel that would be required to more effectively deal with project problems. This is not an easy task, but even little changes can yield noticeable results.

## ***Conclusion***

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As the Southwestern State University, Select Software, Inc., and New World Computing Inc. cases have demonstrated, the potential for serious issues to arise during projects is constant. However, these organizations also reveal amazing similarities with regard to the nature and source of seemingly unrelated project difficulties. It would not be uncommon for everyone in the Managing the Development of Information Products course to identify with these cases and issues because unfortunately, we have experienced these situations time and time again. If most people can recognize and relate to these circumstances, why is it that we cannot adequately halt the downward spiral?

If nothing else, the organizations discussed in this paper effectively illustrate how nonexistent or flawed project management practices can negatively affect everyone associated with a project. Unfortunately, the latter is often the case; managers believe they are doing right by implementing some techniques or following certain practices with which they feel comfortable. When a project becomes challenging, many prefer to abandon project management processes for more active or immediate resolutions. Although project management cannot always prevent typical issues like schedule changes, scope changes, and personnel changes, it can provide organizations with a way to manage these changes and minimize their damaging effects. In order to do this, however, each and every person must trust in the process and in each other, and then sustain the discipline needed to follow through to the very end.

## **References**

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Graham, Robert J. and Englund, Randall L. Creating an Environment for Successful Projects: The Quest to Manage Project Management. Jossey-Bass Inc., Publishers, 1997.

Greer, Michael. The Project Manager's Partner: A Step-by-Step Guide to Project Management. HRD Press, Inc. and the International Society for Performance Improvement, 1996.

Morris, Peter W.G. "Strategies for Managing Major Projects." The AMA Handbook of Project Management. Dinsmore, Paul C., editor. AMACOM - American Management Association, 1993.

Otto, Rainer, et. al. "Implementing Project Management in Large-Scale Information Technology Projects." The AMA Handbook of Project Management. Dinsmore, Paul C., editor. AMACOM - American Management Association, 1993.

Roetzheim, William H., "Managing Software Projects: Unique Problems and Requirements." The AMA Handbook of Project Management. Dinsmore, Paul C., editor. AMACOM – American Management Association, 1993.

Royce, Walker. Software Project Management: A Unified Framework. Addison-Wesley Publishers, 1998.

Whitten, Neal. Managing Software Development Projects. Second Edition. John Wiley & Sons, Inc. 1995.

Zells, Lois. "Project Management for Software Engineering." The AMA Handbook of Project Management. Dinsmore, Paul C., editor. AMACOM - American Management Association, 1993.