*Teaching Case*

# Joule Wafer: What's the Point in Sharing?

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## Abstract

This teaching case takes readers through the migration of a multi-divisional company to MS SharePoint. The story outlines difficulty with file maintenance and tracking, maintaining security and integrity of files, poor techniques in program management, training missteps, and the need for proper file permissions in sharing systems. This case is intended for use in the undergraduate IS strategy course (IS2010.7) or the Foundations of IS course (IS2010.1). It could also be used in a graduate level course on IS management or strategy in an MBA program.

**Keywords:** teaching case, information sharing, security, implementation

## 1. INTRODUCTION

The head of Joule Wafers' (JW) Energy Division was out of gas.  It was a warm July day and while Roger Sparks had only been on the job eight months, his patience was spent and his tenure would be too if he didn't win big in the upcoming round of bids.  Joule Wafers' west coast team spearheaded its presence as a premier supplier of batteries and fuel systems to commercial and government customers for a variety of industrial uses.

In a highly competitive industry with several sophisticated companies that comprised the top tier of power system providers, JW fell just outside the top tier.  JW had suffered from growing pains in the past decade but was teetering on the brink of growth and becoming a preferred provider by differentiating its product and improving brand positioning in the market. With much of the industry volume up for bid in the next three years, JW has the opportunity to experience sizable growth.

Roger Sparks was recruited with the specific intent of winning big in the next round of bids. His credentials alone gave strength to a proposal but his ability to leverage the R&D resources at JW to respond to and contribute to client innovation was to be JW's ticket to success. Sparks was appointed Director of Client Services and Contracting in November of 2012. By the summer of 2013, Sparks and his team of ten (See APP D, Organizational Chart) were actively engaged with at least five other departments including Research & Development, Finance, Engineering, Sourcing, and Logistics to evaluate and respond to the request for proposals (RFPs) issued within the market.

Though more than 85% of JW's ongoing contracts would be up for bid in the next 12 months, the most important bid, from Sparks' perspective, representing nearly 18% of the division's total annual receivables, was due in the coming week. Sparks knew the bidding client well and was well aware that such specific knowledge was an influencing factor in securing his current position.

Thursday afternoon Sparks met with his three lead proposal managers to a surprising end. The RFP documents had been manipulated and the originals were lost. The team's preparations, some of which contained sensitive information, may (or may not) have been accessed by three unauthorized individuals. If the appropriate documents were not recovered, recreating them would not be feasible by the due date, meaning an unsuccessful RFP and loss of significant revenue.

## 2. JOULE WAFERS

Joule Wafers is a full service provider of batteries, generators and fueling systems. Partners Rick Lawson and Jason Strongmire, two former Ford Motor Company engineers who were downsized during the economic downturn and energy crisis of the seventies, established JW in 1979 in Cincinnati, Ohio. They established JW to initially provide batteries and propane to the Big Three automakers. First year revenues were $78,000. Soon they were winning government contracts and expanded and diversified their corporate industry clientele. By 2000 JW had expanded to eight division offices with sales revenues of $120 million in sales annually.

The Energy Division operated the west coast office in San Diego, California. The location was responsible for approximately 32% of JW's gross revenue. The office was initially established to compete for battery and fuel system contracts to support the Navy shipyards on the coast. These early contracts helped JW make inroads with state and local governments within a short period of time. The west coast division sales have increased an average of 8% annually for the last twenty years.

### The Project Starting Point

Jamie Simpson was the Director of (IT) Implementation for JW and had met with Sparks in early 2012 to introduce an upcoming IT change designed to address workplace efficiency and to improve document and content security. Since their initial meeting, water cooler conversations had been the extent of their interactions.

The project was to implement Sharepoint, a document management system developed by Microsoft. SharePoint, launched in 2001, is a web-based framework for integration and management of content and documents. Some of the functionality included in the SharePoint software is presented in Appendix B and an example of how the software would support document flow management is given in Appendix C.

The new SharePoint system was projected to save significant storage space for the company because any user could copy and paste a URL (a URL is a link to another document or webpage) into the document instead of the actual file itself. With this change, the company estimated it reduce capital expenditures to upgrade computer hardware by upgrading about every three years as opposed to every 9-12 months.

After months of evaluation, the JW IT team proposed to implement SharePoint usage enterprise-wide to management. They explored several alternatives for document and filing sharing included using cloud-based services and other types of third-party offerings. They decided that a solution that could be managed and maintained "in-house" was the best fit for their need for confidential and secure document management and control.

Simpson had been hired after a consulting project where a thorough audit was conducted for all company documents. They found that JW was a prime candidate to realize the cost-savings and efficiency improvements from such a content manager. Her specific expertise was in the planning and implementation of these

types of projects designed to achieve administrative efficiencies, but had not previously led a SharePoint migration.

Simpson's team set out to establish a relatively straightforward migration plan, though fully aware the system would need fine-tuning during the first few weeks of user conversion. In the past, the IT department had used a general template that listed the main tasks involved in a deployment. Each plan was to be simplified into a phased approach that led up to a pilot of the software with a group of users and then on to full enterprise conversion. (See Appendix A). Simpson's team had been working for 14+ months on the deployment of the company's new SharePoint project.

## 3. ROLL OUT

During its initial rollout, which took place in March 2013 at JW's smallest division of 23 employees, users quickly adopted the new SharePoint system. The Division's IT staff had held three division-wide training sessions on content management, permissions, file access and other important user knowledge areas. The initial pilot was considered a success so IT moved forward with corporate-wide rollout, reaching the Energy Division second, in late April of 2013.

The Energy Division would transition from an old file sharing system using specific disk drives (e.g. K Drive, H Drive, etc.) and traditional folder style organization. As it was described to staff, not only would the new system be extremely user-friendly but it also added many additional capabilities to general document sharing. For example, multiple people could access a document at the same time, though only one could save changes to the file at one time to maintain file integrity.

Employees could determine who had made changes to the document or had made their final inputs. Several functions could manage independent calendars all in the same location. The new file sharing system had already been implemented successfully at two other divisions within the corporation and most of JW's competitors already had such systems. If the company wanted to remain competitive for new government business in the future, they needed to make a major shift in their IT file sharing system.

The initial conversion in the Energy Division was considered a success. The Division's IT Staff offered six training courses on the same topics of content management, permissions, file access and other important user knowledge areas. The training programs were open to up to 25 employees due to training room capacity and each addressed a specific training topic. The Division had a total staff of 80, meaning there was not adequate training space in advance of deployment for every employee to take each course but the courses were to be offered again one month after deployment and the IT staff assumed that peer training would fill any immediate gaps in user knowledge. With no serious issues by mid-May, the IT staff scheduled one more of each of the classes.

By early June, it was apparent the Energy Division migration was not going to be as smooth as expected. The managers and directors had noticed a substantial decrease in employee output. Users were seeking workarounds to features in the software, thought to be caused by their inexperience in SharePoint. They mostly were concerned about others editing or changing their documents without their knowledge.

Therefore, users were creating duplicates with coded names to prevent others from accessing shared documents – the exact opposite of a shared file system. At the request of managers, the IT Staff began to review the "open architecture" decision they had deployed. The Corporate IT team and Division IT staff had agreed at the outset of the project that properly trained users would require fewer controls and would respect the work of others and maintain protocols for sensitive data on classified projects.

Once SharePoint was rolled out to a division, the head of IT for each division was given the ultimate responsibility of "chief records guard" and was allowed to change system permissions based on what made sense for that particular business sector. For example, in the East Coast Battery Division, the Chief Engineer was given "view only" permissions for contract files and thus not allowed to change or modify any of these files. Similarly, the Director of Marketing could "view-only" engineering drawings she needed for the new marketing campaign and so could not modify or delete them. Within the Energy Division, only the most basic controls were put in place, with the intention of

"patching" any errors or omissions as they arose.

## 4. SHARING

A few days prior to Sparks' crisis, Jamie Simpson placed a call to Human Resources Director Jose Santos, inquiring if he was aware of any security breaches regarding the JW data. Simpson had just been informed that a recent new hire, Sales Consultant John Mukes, had abruptly resigned last week. An HR manager had heard by word of mouth that he left to rejoin a smaller competitor, Rand Energy, for whom he worked previously for four years. Mukes returned his JW-issued laptop only after being asked three times. HR immediately had PC Support sweep his laptop system usage. She specifically asked to filter out any communications with Rand Energy.

PC Support discovered numerous encrypted emails from a personal Hotmail account to Rand. Most emails were sent just after Mukes had accessed the SharePoint system. The documents reviewed were drafts of pending contract bids. In the week prior to his resignation, he submitted a help desk request and was granted full edit rights to the bidding folder. His system history shows he subsequently deleted two documents from the Bids in Process file.

Simpson informed Santos she needed to speak to her PC support manager and would get back with him. The normally mild mannered, Simpson cursed inwardly, livid she was not made aware of this potential security breach. She wondered just how far reaching this problem was.

With word spreading that documents were not safe and content could be viewed or edited throughout the Division, the IT staff was under a great deal of pressure to fix the permissions and controls so that sensitive information was only available to approved users. Management was more than alarmed at IT's apparent inability to gain control of permissions, which brought about multiple security concerns.

In their due diligence dealing with security issues, the IT staff also found other serious issues. The division's data storage was expanding at an alarming rate, and approaching its current, allocated server capacity much ahead of projected schedule – in less than 3 months rather than 3 years. This was almost entirely due to users saving documents in various locations to "hide" it from other users,

keeping them from editing their "master" documents.

Among other things, documents were getting misplaced because people were moving documents to locations they controlled, without notifying the rest of the team of the document's location. The company had missed several deadlines for government proposals valued over several million dollars in revenue due to the rework associated with misplaced documents.

## 5. CONCLUSION

After 14 months of implementation, the chief records guard and other executive leadership realized something must be done immediately to keep this problem from getting exponentially worse. Rumors were going around between employees about potential changes to the new SharePoint site. Employees all over Joule Wafers' Energy Division began saving documents to their desktops, PC's and other various places to ensure they weren't lost during changes or fixes to SharePoint. This was creating a severe storage space limitation on the shared disk drives which were beginning to approach capacity limits. The challenge was to convince employees not to create copies of the documents during the transition and ensure them it would be a smooth transition.

Meanwhile, Sparks was left hanging. His team had very little time to respond to a mission-critical bid, now knowing their competition likely had more information than they should. Sparks was also worried about signing the confidentiality agreement required for bid submission. The agreement required the signatory to commit that their organization had proper information controls in place to protect confidential information should they, by a long-shot, win the bid.

## 6. CLASS PREPARATION QUESTIONS

1. What advice would you give to Sparks? To Simpson? Whose responsibility is it to secure documents in an organization?

2. What are the risks of launching SharePoint before the entire staff had received training?

3. What types of controls and other security practices should be in place for confidential or proprietary information? How can these be determined for each document? Individual?

4. In terms of training, what should the company have done differently, a) pre-launch, b) first month of implementation, c) six months in, and d) once security breach was discovered?
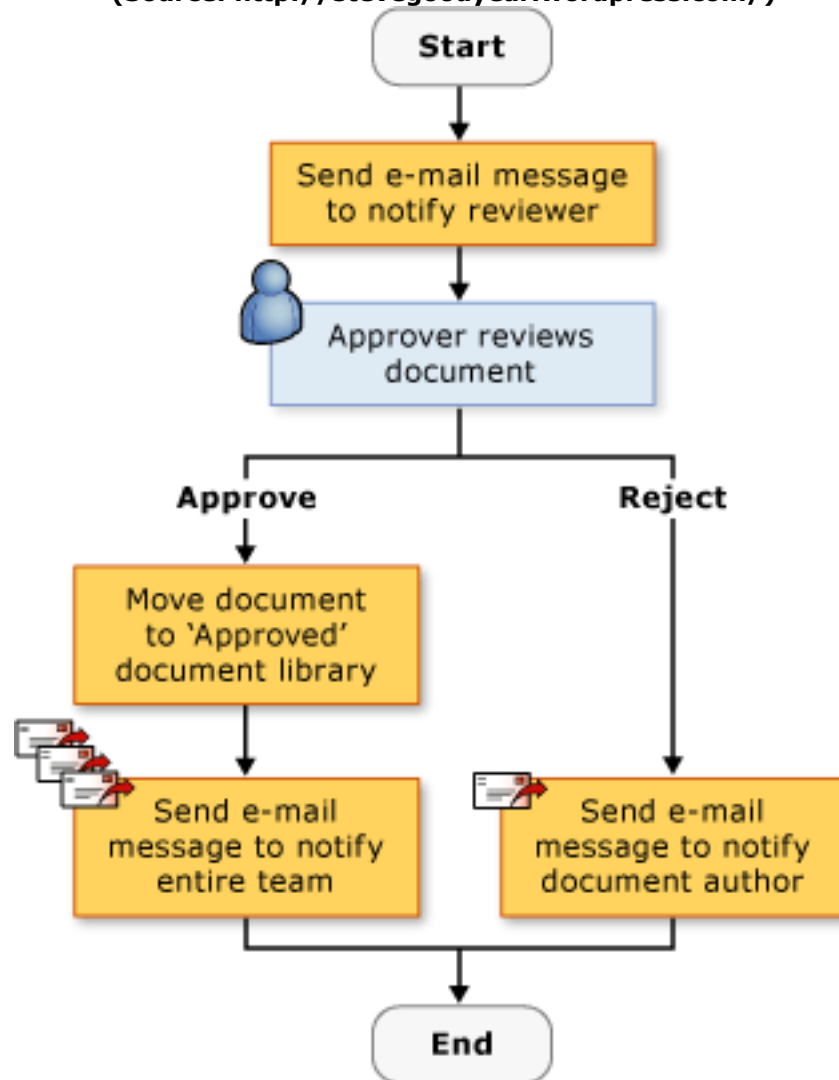
**APPENDIX A: PROJECT BREAKDOWN**

*JW's project had been broken down into these phases:*

Phase One:      Prerequisites and Project Planning (February 2012 - March 2012)
- Project Kick-off
- Corporate Wide Communications/Presentations
- Define Project Roles and Responsibilities

Phase Two:      Design Infrastructure Architecture (March 2012 - September 2012)
- Design capacity, constraints, and infrastructure
- Document server requirements
- Outline user requirements
- Hardware specifications
- Create user accounts

Phase Three:    Deploy Test Farm (September 2012 - February 2013)
- Install server
- Install SharePoint prerequisites
- Configure servers and apps
- Conduct security review

Phase Four:     Conduct Pilot/Prepare Training Materials (February 2013 - April 2013)
- Plan training strategy
- Develop reference guides
- Train IT service team
- Train the trainer via Division IT Staff
- Pilot at East Coast Wire Division (Total Staff of 23)

Phase Five:     Full Product Rollout (April 2013)
- User Training distributed to Divisions.  Division IT rep to conduct trainings
- Divisions transitioned on weekly basis
- Weekly re-cap on rollout success

**APPENDIX B: SHAREPOINT FUNCTIONALITY**
**(Source: http://www.1234micro.com/Development/SharePointAndInfoPath)**

**APPENDIX C: WORKFLOW SOLUTION FOR DOCUMENT APPROVALS**
**(Source: http://stevegoodyear.wordpress.com/)**

**APPENDIX D: ENERGY DIVISION ORGANIZATIONAL CHART**

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┌─────────────────────┐
│   Marshall Stevens,  │
│         COO          │
└─────────────────────┘
           │
┌─────────────────────┐
│   Robert Sparks,     │
│  Director of Client  │
│    Services and      │
│  Contracting  (CS&C) │
└─────────────────────┘
      ┌────┴────┐
┌──────────┐  ┌──────────┐
│ Proposal │  │ Proposal │
│   Lead   │  │   Lead   │
└──────────┘  └──────────┘
      │             │
┌──────────┐  ┌──────────┐
│ Team of 5│  │ Team of 4│
│ Contract │  │ Contract │
│Specialists│ │Specialists│
└──────────┘  └──────────┘
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