CHAPTER 1

Churn: The Cause of Disruption

We hear more and more complaints about working in End-to-End Supply Chains,[1] and, even worse, we see more and more young people leaving and saying they are glad to have escaped. Throughout this book we will ex-

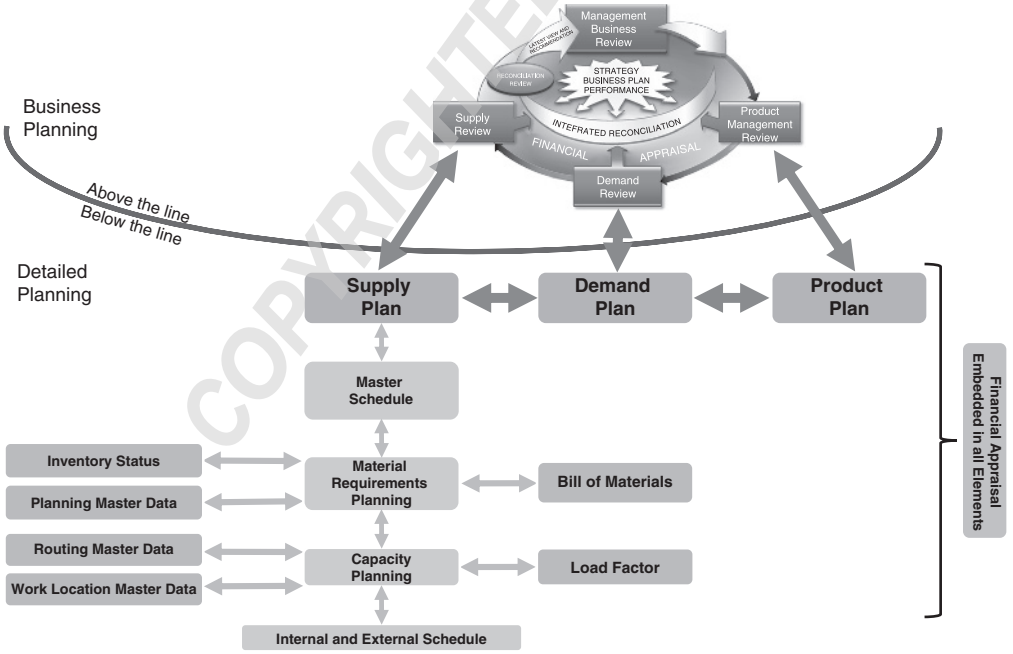

FIGURE 1.1 Business Excellence Planning

plore and identify the need to implement and use consistently Business Excellence Planning, Figure 1.1, through committed and engaged Leadership driving business processes with a team-based culture.

The youngest daughter of one of the authors recently said, after leaving a manufacturing company to start her own company, "I'm glad to be out of there! I do not mind working hard, but constantly scrambling because of poor planning and poor Leadership has caused me to be demotivated, tired, and frustrated. Instead of feeling any success I feel deflated and undervalued." What in the world is happening in companies? As one person told us, "You can never plan on anything because shortly after you arrive at work somebody drops a bomb in your planned daily schedule, and then you spend the rest of the day chasing your tail." All of the authors have experienced this, starting their careers many years ago, expecting things to get better over time, but, instead, seeing the disruption maintained or even getting worse.

A good term of reference to describe this constant disruption was not available until we met Wade Sheffer, the Managing Director at GM Ventures. As Oliver Wight coaches, we were doing an assessment at General Motors when we first met Wade, who at the time was the project leader for improving supplier capacity planning. He used the word *churn* to describe the chaos that occurs in supply, but we also see the same symptoms in process-based and service-based companies. We asked Wade for a definition, and he said, "An unanticipated change in direction, plan, and/or strategy." He also made the point that "Churn, in and of itself, drives significant waste in all organizations, big or small, and should be avoided." This was a perfect description of the situation. We had always called it firefighting, but churn is better. It is what we have been seeing for years in many other companies, and coaching them to sustainably eliminate, but we did not have the right term or words to describe what is all too common.

A former colleague of ours, who still works in Supply, recently said something even more descriptive. He said, "Most supply leaders have a mentality that nothing is fast enough, and no one has enough work on their plate. They tend to chase single-point solutions instead of big-picture solutions uncovering the root problems (poor planning). It is almost like they enjoy adding stress to the environment, making it toxic. Their competitive nature is only temporarily satisfied by the ability of their employees to execute the tasks faster – not with efficiency but with brute force. Meanwhile, the rest of the organization is

operating less efficiently because of the churn." That is a brutal statement, but certainly describes the situation in too many companies.

Companies need an excellent planning process to thrive. Planning processes can only operate when they have accurate data, good information, and are managed properly. When someone does not do their job correctly and makes changes in isolation, their failure, lack of knowledge, and integration causes the plan to change, and the churn begins. When multiple people/departments drive errors into the planning process, the churn causes job dissatisfaction, consumes everyone, including customers, and erodes bottom-line results.

How does churn cause job dissatisfaction? Let us count the ways:

1. **Increases frustration:** not being able to do a quality job, few daily successes, and always dealing with issues.
2. **Undermines job satisfaction:** feeling bad at the end of the day; we all need some success.
3. **Lack of recognition:** even when you do something right, it is overwhelmed by the bad things that have happened.
4. **Constant belittling and bullying:** because you seem to be blamed for all the things that go wrong, being tired increases the possibility for more human error.
5. **Being overworked:** spending long hours trying to make things right in the middle of churn.
6. **Unacceptable attitude:** giving up trying to make things right and just getting through the day; not feeling valued.
7. **Lack of understanding and listening:** up and down the organization.
8. **Tell and do:** an environment with no empowerment or delegated authority; we're just a number.
9. **Eroding teamwork:** driving people to be individualistic and not team members often results in blame.

Many readers will have experienced at least some of these during their career. Jim Correll distinctly remembers one of the worst periods of his career:

> *I had just moved from Quality Control Manager to Machine Shop Manager. My new boss said that the General Manager had forced him to take me, and told me that I would not survive three months. I was told the reason the job was vacant was because the previous manager did not have a "sense of*

FIGURE 1.2 Supply Chain Personnel – Frustration

urgency." Every day started with prepping with the Scheduler, for the 1½ hour shortage meeting. The Machine Shop had between 100 and 200 shortages every day and we were expected to give dates for resolution of each of the shortages with delivery within a day or two. I struggled with my Scheduler because he certainly did not have a "sense of urgency," but he was not the one being dragged over the coals during the meeting because the dates were never good enough. Name calling and anger occurred every day, and I bore the brunt of most of it. My machine shop made a lot of gears for the assemblies; many of these gears had 10-plus operations, meaning long Supply Lead Times. Being on the receiving end of the anger and name calling was not fun! [Recognize the "Face of Churn" in Figure 1.2.] One morning the Scheduler did not show up until I was already en route to the shortage meeting. At the shortage meeting the usual berating started and, since I did not have dates for many of the items, it was even worse. At this point, I had had enough and responded with a "will advise" for all the shortage items, even those for which I had dates. It was clear that I was upset and was not to be messed with that morning. The bullied person suddenly turned into the

bully. My boss looked at me and said, "Well, it looks like you might make it after all." I was just praised for my bad behavior.

This story has a happy ending. Six months later, the company had installed an excellent planning system, as we describe in the following chapters, and we implemented them in the Machine Shop. Unfortunately, the other production managers had not implemented the Unparalleled Business Planning and Execution Practices. One morning, instead of showing up early to the shortage meeting, I hid out of sight until it started. When my boss said, "Where's Correll?" I stepped in and said, "I have no reason to attend today." Before my boss could explode, I said, "I do not have any shortages." He looked at the rest of the people in the meeting and said, "If the rest of you performed like Correll, we would not have to have this meeting!" Not exactly his words, because I have removed his expletives. Did we have shortage meetings after the rest of the production department implemented the Unparalleled Business Planning and Execution Practices? Yes – but they were 10 minutes with no "bull," belittling, and name calling; just action plans to handle the few potential delays. These new shortage sessions became the norm.

A different type of churn was demonstrated one Christmas at a well-known frozen food confectionery. The last production before the Christmas shutdown was a chocolate torte with a thick layer of cream on top. This was a top seller, produced every 10 days or so. During the manufacturing run, the operation ran out of cream. Upon investigation, it was discovered that cream was not in the system's torte recipe. The last recipe change recorded was 18 months earlier. How could this be the case? The torte was made every 10 days. As it turned out, every 10 days there was insufficient cream. Every 10 days production chased the warehouse and the warehouse chased purchasing and purchasing chased the supplier. Every 10 days the supplier reacted, pulling forward the next day's cream delivery. Consequently, the day after torte production, there was a shortage of cream, and the same churn re-occurred. The cream scheduler was provided a message from the system to purchase more cream and obliged. At the end of the month a variance was reported. Everyone blamed everyone else, but it was "just the way it is here" and the root cause was hidden by many other causes of churn. No one had the time to find the cause, because they were consumed by coping with it and other shortages.

At another company, the shortage meeting was referred to as the "daily prayer meeting." It got its name because those who had to attend prayed for a suitable answer.

At yet another company, the leader of the shortage meeting had a fantastic solution: "Let's get it automated!" When we suggested that the right solution would be to eliminate the shortages, he said, "Never been done in my time and never will be!" Maybe his experience drove him to think he was right; however, once he understood the solution, he realized that spending less than 15 minutes to be sure everything was integrated drove his shortages down. This has been done in many companies that followed the Unparalleled Business Planning/Execution Practices.

So, how can we solve churn? To fix churn, Leadership must recognize the problem, have a vision of life without churn, and be committed to eliminating it. Oliver Wight illustrated commitment by explaining the difference in participation between a chicken and a pig for breakfast. He said the chicken was involved and the pig was committed! Knowledgeable commitment is what is required by Leadership to achieve the required behavior changes because so many areas must perform well in order to achieve Class A. What gets measured gets done and can be managed more effectively; the Class A Standard provides the recommended measures.

The term *Class A* has been mentioned several times. This is a good time to provide a definition to understand Class A and its relationship to Business Maturity. The concept of Business Maturity has been around since the early 1990s, when the Oliver Wight organization was invited by Harvard Business School to commercialize a theoretical study they had completed on Beretta, the Italian gun company, that had won an order to supply the United States Army with weapons, in preference to Smith & Wesson.

This resulted in the Four Phases of Business Maturity (see Figure 1.3), which Oliver Wight continues to use to benchmark companies, following an Oliver Wight assessment of their processes, procedures, culture, and performance:

Phase 1: As a company progresses from the bottom to the top of Phase 1, behaviors, processes, and tools are improved sufficiently to gain control and eliminate unplanned events, thus delivering a minimum performance level of 95% for schedules that are completed on time within agreed time and quantity tolerances.

FIGURE 1.3 Business Maturity – Four Phases

Source: © Oliver Wight International.

Phase 2: Once Phase 1 has been achieved and can be sustained, the next step on the journey is simplification and removal of process waste, while increasing customer service levels. At the top of Phase 2, companies operate at a Six Sigma 250 parts per million defect opportunities.

Phase 3: Phase 3 focuses on taking knowledge-based business processes and, where appropriate (based on the required investment and market needs), automates them to further increase velocity and reduce the need for manual intervention. This results in a further step change in performance. Phase 3 maturity must be defined and agreed for each company, according to their strategy, business plan, and strategic business objectives.

Phase 4: Finally, in Phase 4, automated business processes are fully integrated with technology; this is often characterized by "lights-out factories," where robots have replaced traditional blue-collar teams. Again, this change in maturity must be based on competitive advantage as well as a cost-effective response to customer needs and a real understanding of the value they require.

Business Maturity has also "matured" since the Beretta case study and has seen many of the attributes of Phases 3 and 4 collapse into Phases 1 and 2. As the world moves on with ever-increasing technological advances, Maturity must reflect this progress. Consequently, Phases 1 and 2 today include, within their scope, automation and integration, effectively meaning that Phases 3 and

4 have become more of a focus on market and technology disruptors, especially those that a company must focus on to support their strategic goals. The Oliver Wight organization, as the Thought Leaders of Business Maturity, are constantly reviewing Business Maturity and the associated Maturity Transitions, as is done with all the material, so they are often updated to reflect current trends and thinking.

Oliver Wight's message over the years has evolved to enable a focus in the first two Phases of Business Maturity to drive KPI performance levels to near-perfection at the top of Phase 2. At this maturity level, use of percentages at 98% is not beneficial. Therefore, performance is discussed in terms of Six Sigma and the use of Statistical Process Control techniques.

Oliver Wight is a learning organization and through this approach has been thought leaders in the development and implementation of Detailed and Business Planning approaches. For 50 years the Detailed Planning hierarchy shown in Figure 1.1 has been refined and optimized with all the elements displayed playing a key role. MRPI and MRPII (Manufacturing Resource Planning), from their original conception in the early 1970s, were the basis for this evolution, and the resulting structures for detailed planning work best when they are all used as shown.

A more detailed and general description of business maturity from the bottom of Phase 1 to the top of Phase 2 are outlined in Figure 1.4.

Churn is the state of being in an organization that is operating at the bottom of Phase 1.

So, if you are a company somewhere toward the bottom of Phase 1, you have significant opportunities for improvement. Often companies have Phase 1 Business Maturity but still generate significant profit. This is often due to the market accepting very high prices that cover the inefficiencies of the processes delivering the customers' products. Oliver Wight's position is that profitability is often an enemy of excellence.

From Figure 1.4, improvement is effectively a journey, and companies need to transition from one level of maturity to the next. For a journey from the bottom of Phase 1 to the top of Phase 2, a company will travel through five transitions, which are shown in Figure 1.5. Understanding transitions is very important, as a company cannot just jump from Transition 1 (the bottom of Phase 1) to Transition 3 (the top of Phase 1) as it will not be sustainable because the foundations provided by Transition 2 have not been established and achieved. Figure 1.4 shows a general picture for the journey; however, Oliver

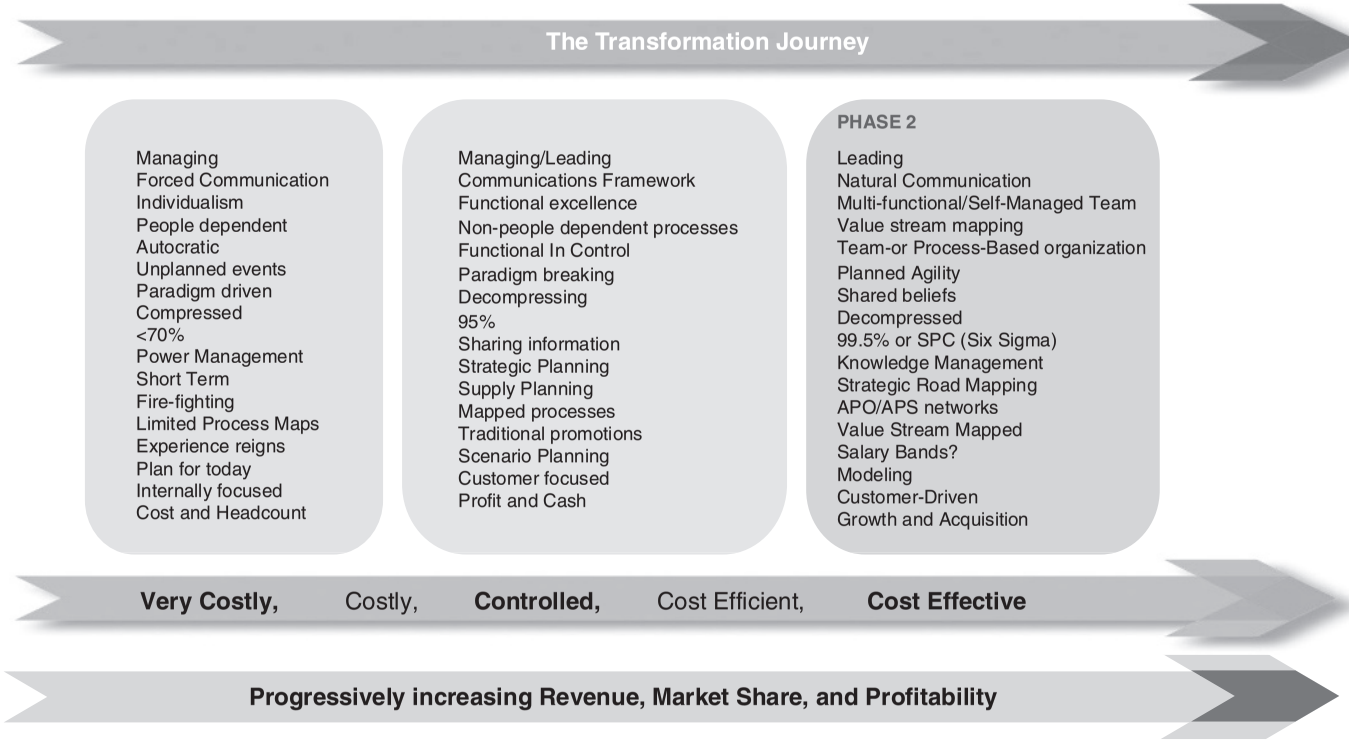

FIGURE 1.4 General Descriptions of Phase 1 to Phase 2 Business Maturity

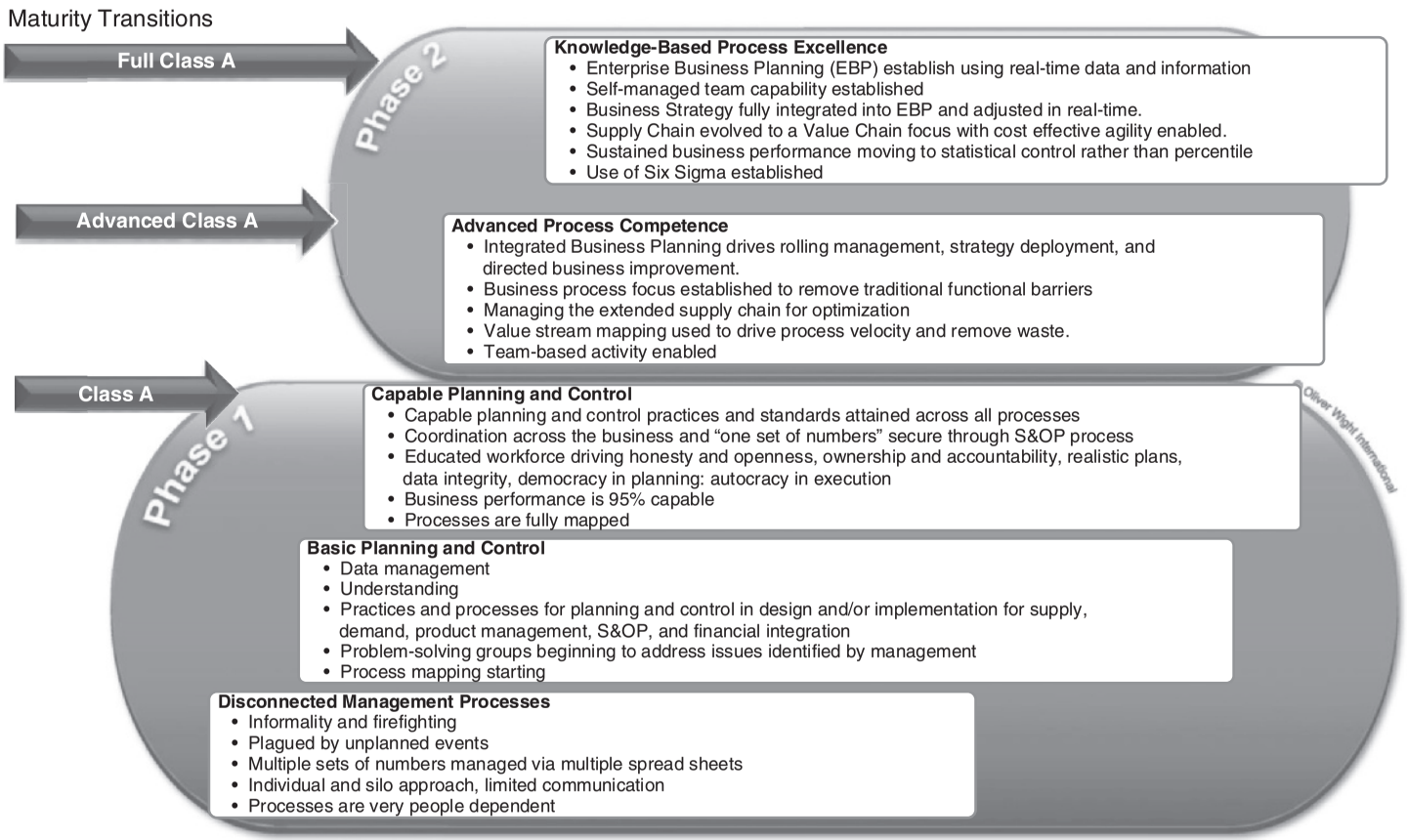

FIGURE 1.5 The Journey – Through Phases 1 and 2

Wight has developed Maturity Transitions for some 35 to 40 key business processes that are used to support an improvement or transformation journey in more detail for specific business requirements. Figure 1.5 shows one example.

From the early 1970s, clients frequently asked Oliver Wight himself, "How well are we doing?" That question became the catalyst for developing the first Checklist. In its initial version it was a single piece of paper listing 20 questions to be answered "yes" or "no" by the client. If all questions were answered "yes," the client was confirmed as being in "good shape."

Since that initial version of the Checklist, there have been six further evolutions, bringing us up to date with *The Oliver Wight Standard for Business Excellence*, seventh edition (Figure 1.6).

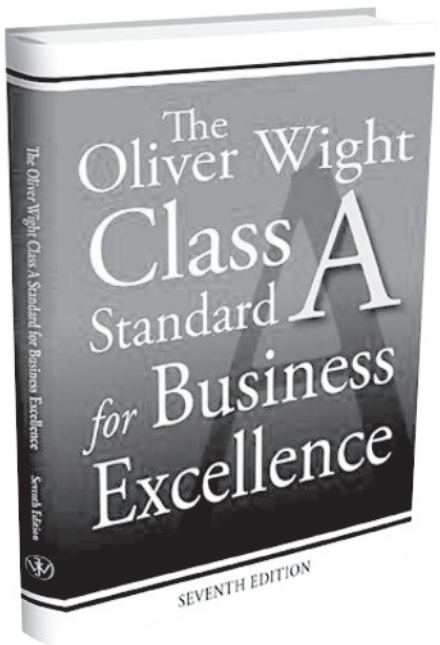

FIGURE 1.6 The Oliver Wight Class A Standard for Business Excellence

In contrast to the first version's 20 questions, the seventh edition has nine chapters, which include approximately 750 Business Maturity definitions and descriptions that are positioned at the top of Phase 2.

The Standard today is too expansive to be implemented in a single improvement initiative. To enable a laser-like focus on business processes that are in the greatest need of improvement, the Class A Standard has been

organized into Class A Milestones; these are explained in more detail in Chapter 19, Implementation.

Now, let us go back to the topic of churn and consider some of its fundamental causes.

Inventory Accuracy: When an item quantity of 10 is received but the transaction incorrectly records 100 (see Figure 1.7), the planning system believes that 100 have been received and does not recommend reordering until it calculates that the 100 in inventory will be depleted. However, when the 11th unit is needed, churn begins in earnest. The Material Planner must break their daily routine to expedite an emergency order for the item. If it is an externally sourced item and there is a material shortage, Purchasing must jump through hoops to get the material delivered. When Production gets the material, they will suboptimize their schedule to make the part while under constant pressure from their internal customer, the assembly area. The result is that the build schedule will not be completed on time and Customer Service will miss a customer shipment. Churn has started!

FIGURE 1.7 The Need for Trusted Data Accuracy

Bill of Material Accuracy: Consider the same part. The Bill of Material states usage of one part per assembly, but the assembly requires two. Because the part is normally ordered in large quantities, the incorrect Bill of Material is not usually a problem; Assembly knows of the error and keeps extra parts at the assembly line. But when there is a large assembly order and the part inventory is low, churn begins. Like the inventory accuracy example, everyone blames everyone else, but the real issue, Bill of Material accuracy, is never addressed. Churn spreads geometrically! Churn can be even worse when companies use an engineering design bill instead of Bills of Material structured for Supply, owned by Supply and constantly updated to reflect reality.

Material Planner: A Material Planner who is not properly educated, trained, or managed simply react to individual planning system messages and not consider the bigger picture. This frequently leads to changes in safety stock settings, on all items, because of a shortage; add to this Leadership pressure to reduce material inventory, then churn never ends. Because of the churn, the Material Planner receives thousands of planning system messages daily, in this case to "reschedule in," which causes the Planner to expedite these parts. At the same time, the Planner could also receive thousands of messages to "reschedule out," which the Planner ignores. John Proud, a highly regarded manufacturing process educator and Oliver Wight Principal, emphases that "reschedule out" messages should be prioritized. Why? Because this provides the capacity to successfully execute the reschedule-in messages. Since they cannot possibly respond to 2,000-plus messages, Planners do the 'best they can' which is usually to react only to the reschedule-in messages and leave the other messages uncleared in the system. Because the planners are only maintaining part of the planning system this leads to ever increasing 'Churn'. Without the time to correctly analyze the re-schedule in messages it is only a matter of time before some of this become a shortage, then Leadership becomes involved causing everybody to scramble around even more, hence 'Churn' accelerates.

Master Scheduler: If a Master Scheduler position exists[3] but the individual does not fully understand the primary purpose of Master Scheduling (i.e., matching supply to demand), then churn will explode. Matching supply to demand means the Master Scheduler takes control away from the planning system for all orders (planned, firm planned, and released) out through the cumulative lead time. How does the

Master Scheduler demonstrate they are in control? By decoupling supply from demand. When a demand requirement suddenly appears inside the agreed-upon lead time, the Master Scheduler should investigate whether it can be accepted as requested through discussions with Internal Supply and/or External Sourcing to see if the new requirement can be achieved. Every time the Master Scheduler releases an order inside lead time without first ensuring availability from Internal Supply and/or External Sourcing, churn begins. Sometimes it affects only a few items, but when exploded through the Bill of Material it could affect thousands of items and result in countless reschedule-in and reschedule-out action/exception messages that overwhelm Material Planners. Churn explodes!

Integrated Business Planning: Where there is an Integrated Business Planning (IBP)[4] process in place, it must be owned and driven by Leadership with a focus on decision-making extending out into the future, far enough to enable long-range decisions, such as equipment acquisition or physical facility changes – typically the horizon is 4 to 24 or 36 months. When required decisions out through this time frame are not identified, resolved, and implemented with adequate lead time, they become near-term crises. This leads to churn of the greatest volume and business impact. It is like a set of gears with one large gear (IBP), a medium size gear (Master Schedule), and a small gear (MRP). One half revolution of the large gear sends the smallest gear flying. The large gear represents Leaderships decisions, and the smallest gear represents Material Planning, External Sourcing, and Internal Supply. Living in a reactive company culture, instead of a proactive change culture, is the norm when Leadership does not understand the impact of its decisions to change aggregate plans without adequately planning lead time. The old mindset of just "do your best to make it happen" just does not work anymore. Changes without understanding the impact causes unmanageable churn!

Demand Planning: The Demand Plan starts off as an Unconstrained Demand Plan (see the Demand Planning chapter) that Sales and Marketing bring to Integrated Business Planning monthly. When the Supply Chain confirms it can support the unconstrained plan, and it is approved by the owner of the IBP process, the President, it becomes the new, approved Demand Plan.

The process of Demand Management starts with understanding market assumptions, including prices and volumes, and the development of an Aggregate Demand Plan by product family, by month over the full planning horizon of 4 to 24 or 36 months before worrying about the detail of end items and their resulting financials. Next, following plan approval, is the detailed demand for the end items. There is now a focus on options by week, by ship point, and on the near term, normally three to four months, in both volume and financial terms.

One of our clients demonstrated accuracy within ±0.5% in dollars every month but only 76% accuracy by mix of end items.[5] Accurate Demand Planning, especially planning the mix, is one of the most difficult tasks to perform in any company, but it drives all supporting plans. Nobody gets a perfect forecast except by sheer luck, but good, reliable, and useful forecasts are achievable. Companies that use only algorithms to predict the future based on past results never achieve good forecasts at the end item level and are also seldom successful at aggregate levels. Algorithms provide a useful starting point for a Demand Plan, but incorporating input from Product Managers, Sales Representatives, Marketing, Customers, and any other sources that can provide insight to the cause of demand, will result in the best Aggregate Demand Plans and detailed end item forecasts and schedules.

By formally identifying and tracking assumptions, risks, and opportunities for each product family, the entire demand picture can be seen, the best decisions can be made resulting in the most accurate forecasts possible. With clear knowledge and understanding around the assumptions that have been incorporated, documented, and communicated, the Supply Chain can appropriately prepare to support the Demand Plan. Inaccurate and disjointed Demand Plans drive churn into Integrated Business Planning and throughout the End-to-End Supply Chain. As stated earlier, there are no perfect forecasts, but improving accuracy and having a good understanding of what has been factored in gives Leadership, Master Schedulers, and MRP Planners an opportunity to provide the safety stocks and safety capacities required to protect against any demand and supply variation.

In brief, the Demand Plan needs to be a clear statement of what is believed will happen in the marketplace over the planning horizon and the plan has been developed based on “truth as we know it.” Then churn will be reduced significantly (Figure 1.8).

FIGURE 1.8 Reduce Churn

As you read this you might think that Wade Sheffer, who was quoted earlier, and others mentioned, along with the authors, do not like Supply Chain organizations or people. That is not true at all. In fact, we love helping companies with the challenges they face. There are solutions, all of them proven time and again, for every problem. You can never eliminate churn completely but resolving the underlying issues that you can control will ensure that the amount of churn is reduced to a fraction of what it was. This will ensure that there is a stable and manageable environment. As you read the remaining chapters, you will find solutions to all the churn and problems identified earlier, and many more. The solutions often require a change in the culture of the company and always require good discipline. That kind of change must be led and driven by Leadership. Education to understand the "why" and training to understand the "how" are required to sustainably reduce churn to a minimal level, if not eliminate it.

Summary

To get people to want to stay in End-to-End Supply Chains, there must be a change in how they operate. Being bullied to perform better is not acceptable, and making money is a requirement of all businesses. The rest of the chapters explain how to create a workplace that performs at an extremely high level with an environment that allows people to perform at their highest levels and to go home with a feeling of satisfaction and of a job well done.

For additional but more specific reading please visit the Oliver Wight Website and gain access to the extensive library of White Papers.

Notes

1. The End-to-End Supply Chain includes Customers, Sales, Marketing, Engineering, Planning, Production, Purchasing, Suppliers, Warehousing, and Distribution; see Chapter 14.
2. "Doing the best you can" is for Little League. In business and manufacturing it is not acceptable. Ask your customer when the shipment shows up late if "We did the best we could" is an acceptable response. Successful companies discover the problem, find a solution, and then implement it (too many companies are still not as successful as they should be).
3. All companies need a Master Scheduler, and, in many companies, there is a need for multiple Master Schedulers. Master Scheduling is not a clerical job; a Master Scheduler's most important skill is the ability to communicate with all the functional resource managers the reasons (such as requirements driven by IBP, resource limitations identified by RCCP, etc.) supporting or justifying the what, when, and how much product is required per period in the Master Schedule.
4. All companies need a properly operating Integrated Business Planning (Advanced Sales and Operations Planning) process.
5. 76% forecast accuracy by Master Scheduled item is close to world class according to Institute of Business Forecasting benchmarking. This high level of accuracy was achieved because the client followed the Unparalleled Business Planning and Execution Practices recommendations.