

Developing simple rules at Weima Maschinenbau (A)

By Donald Sull and Mohsin Drabu

Founded in 1986, Weima Maschinenbau GMBH designed and manufactured industrial shredders and briquetting presses (machines that pressed sawdust, woodchips or other loose materials into blocks that could be recycled, used for fuel, or disposed of more easily). The company, headquartered in Ilsfeld, Germany booked 2011 revenues of €38 million, with 80% of sales from exports. Weima employed approximately 200, and had overseas production and service facilities in the U.S., U.K., France, Poland and planned to open a Chinese facility in 2012. The U.S. was Weima's largest market in 2011, but management forecast China and Brazil would overtake the American market within five years.

Weima was one of a few companies in the world that produced both shredders and briquetting machines. The company designed and manufactured a wide range of products that processed diverse materials (e.g., wood, plastics, paper, metal, biomass, waste), served all industries, and offered machines ranging in price from €10,000 to €400,000. "Weima," according to Managing Director Martin Friz, "is a jack of all trades that sells to everyone from a one man wood shop to IKEA."

Approximately one-third of products were tailor-made to meet customer needs, and the remainder were standardized machines that the company sold-off-the-shelf. Weima manufactured the core shredding and briquetting unit—whether standard or customized. The company did not offer turn-key projects, which would have put Weima into direct competition with its major customers and required a wider range of capabilities including project engineering and planning.

The company's breadth of product line fuelled its 15% annual growth in sales, but also created challenges internally. In recent years, quality had suffered as the company diversified into uses outside its traditional expertise. In pursuing a range of applications, scarce engineering time was allocated to building prototypes for one-off products that were never sold again. A diverse product line also put strains on the service department, which had to maintain machines in unfamiliar applications or countries. Friz recalled:

We had one request for a company in North Africa looking for a shredding machine. We figured that a client is a client, and what's more, this is one in a new and interesting geography, so why not go ahead with it. But there was a factor that we did not account for, and that was the weather conditions which the machine would have to bear once out there. It was practically in the Sahara Desert, which meant a lot of sand getting into the machine and corroding it. This then burdened our service department hugely.

Laying the groundwork for simple rules

In the Fall of 2011, Friz along with Weima CFO Andreas Mack joined an active learning program organized by the Young Presidents' Organization (YPO) and the London Business School to help companies execute their strategy more effectively. Initially, Friz proposed that Mohsin Drabu, an MBA student assigned to Weima, build a comprehensive financial model to calculate the net present value (NPV) of each product request from customers.

In discussing the model, Friz, Mack, and Drabu agreed that calculating a NPV for each proposal would be impractical. Mack recalled a request—from an Indonesian firm to build a machine to shred coconut shells—that illustrated the obstacles to calculating an NPV :

In order to properly ascertain the net present value of building a specialized coconut shredding machine, we would have to calculate the size of the market for coconut shredding in Indonesia, as well as our likely market penetration, and ease of subsequently penetrating neighboring markets. Then we would need to estimate the sales price, cost to manufacture and service the machines, and figure out what competitors might do. Obtaining the data would be at best time consuming, and at worst impossible. So we needed an easier approach.

When Friz and Mack attended the kick-off session of the YPO program, they learned that companies could align resource allocation with strategy by applying a handful of simple rules to a critical process. In a typical year, Weima received approximately 10,000 requests from customers, declined to bid on approximately half of these, and in the end sold approximately 1,000 products. They decided to develop simple rules to screen new product requests to ensure they focused their limited resources on proposals that would leverage the company's technical capabilities and earn an attractive return.

As a first step, Mack and Drabu brainstormed broad categories of simple rules, without developing the specific rules. They agreed on five broad categories that the rules should cover.

- *Complexity.* They agreed that complex requests, such as the shredders in Indonesia or North Africa, were more likely to be unprofitable than simple requests that could be addressed with off-the-shelf products.
- *Financing terms.* Apparently profitable projects were less attractive when payment terms were taken into consideration. In some cases, the down payment on a product could be less than 10% while payment would stretch out over two years.
- *Hidden costs.* This category included expenses beyond production, including transportation, handling challenges, on-site installation, and service that could increase based on a country's political environment or weather.

Mack and Friz selected a cross-functional team of five members including a mix of veteran employees and new hires. The team included Markus Kaspar (salesman for spare parts), Florian Schütz (Service Manager), Stefan Roth (Chief Design Engineer), Kay Uwe Schulte (Sales Manager), and Oliver Sadrinna, who ensured signed orders entered the company's production queue. Drabu telephoned each team member, explaining the process and reviewing the preliminary categories of complexity, financing, and hidden costs. Schütz suggested they add a fourth category, testing, which could indicate the likelihood that customers would be satisfied with the product.

The simple rules workshop

The company held a simple rules workshop on the afternoon of 24th November 2011 in Ilsfeld Germany. Drabu opened the session by reviewing the simple rules approach and explaining the objective of the first afternoon was to validate the preliminary

categories and then develop simple rules for each agreed category. Team members challenged the category of complexity, arguing that Weima successfully handled many complex projects without incident, and that the real challenge was the company's experience with a specific product, material, or type of project. The team changed the first category from "complexity" to "experience." Friz questioned whether testing was always necessary. The team agreed that testing would be limited to projects that were borderline on the other parameters, and if the prototype failed the test the project would be rejected.

After separating the whiteboard into four sections, one for each category, Mack led a discussion where the team brainstormed rules. The group broke down each element into smaller headings. Experience-based rules, for example, were broken down into experience in terms of machine type, materials, and project. (Exhibit 1 summarizes the rules by category).

To test these rules, the team decided to create an Excel workbook, with a separate spreadsheet for each of the four elements that included a questionnaire where each rule was scored with one of three colors (i.e., green for completely meeting the rule, red for failing to satisfy the rule, and yellow in between). The responses to the individual rules within each sheet would then be aggregated into an overall score for each of the four categories of experience, financing, hidden costs, and testing. Each proposal would be allocated to one of four buckets, based on the coding:

- *Go ahead*: green scores on experience, finance, hidden costs and testing
- *Innovation zone*: Yellow on experience, green on everything else.
- *Management attention needed*. If there are any reds.
- *Go ahead but check the yellows*: Everything else

On the second day of the workshop, the team ran tested the model on a sample of past projects. In the process of testing, the team tweaked the rules, and adjusted the scoring for a few. The team then undertook test the rules more systematically on a sample of 50 past projects over the following few weeks to determine whether the model correctly distinguished between attractive, problematic, and unattractive projects.

As Mack and Friz left the session, they were satisfied by the comprehensiveness of the model, and discussed how it could be used throughout the company. How easy would it be to communicate the four categories and more than 40 rules to Weima's distributors and sales force? How easily could they use the model? Would they consistently fill out all the items on the extensive checklist for each request? How could they ensure that the company got the most value from the tool?

Appendix 1: Initial simple rules

- **Experience-based rules**
 - Machine
 - Shredder under 1500 mm diameter
 - Briquetter a C or a TH series
 - Weima selling > 10 per year
 - Option value < 10% of the contract value
 - Machine is a series ZM, an NZ or WLH
 - Part of the clients product line (versus selling the output)
 - Sales of this machine in the past 24 months
 - Material
 - Harder than the knife; or a mineral
 - Flexible
 - Low melting point
 - Contains moisture
 - Abrasive
 - Contaminated
 - Hazardous
 - Project complexity
 - Stand alone project
 - Add-ons >50% of the contract value
 - Industrial solution
- **Financing rules**
 - Down payment (TBD) $\geq 20\%$
 - Favourable discount (TBD)
 - Indirect client: Favourable discount (TBD)
 - Industrial application
- **Hidden costs rules**
 - Location
 - Within EU and drivable
 - Region safe
 - Environment
 - Inside
 - Temperature between 15-30C
 - Average humidity < 60%
 - Space restrictions
 - Inaccessible area
 - Temperature < -10C
 - Temperature > 40C
 - Contract
 - Contract in place
 - Contract complex
 - Delivery time
 - A stock item
 - Delivery conditions standard
 - Engineering costs
 - Standard
 - Additional drawings needed
 - Installation costs
 - Ex works standard solution
 - Service contract
 - Industrial project with installation
- **Testing rules**
 - "Material" score is green or yellow
 - Prototype
 - Industrial application
 - Testing approved by the client

Developing simple rules at Weima Maschinenbau (B)

By Donald Sull

On 11 January 2012, Martin Friz, Managing Director, and Andreas Mack, CFO, of Weima Maschinenbau discussed the simple rules that their company had adopted to prioritize project requests from customers at the second session of an active learning programme jointly sponsored by the Young Presidents' Organization and the London Business School.

Working with a London Business School MBA, Friz and Mack had developed an Excel spread sheet consisting of over 40 items across four categories-i.e., Weima's experience with the product, financing terms, hidden costs, and possibility to prototype and test the product. The feedback they received was that the model, while potentially useful, included too many items to serve as simple rules that Weima's sales force, dealers, and employees could easily remember and quickly use with limited data.

Friz and Mack decided to use the items in the Excel model as a list of potential rules that could be consolidated into a handful of rules. In early February, they reconvened the five person cross-functional team that had developed the original model. The team spent half a day discussing the original rules to cull them down to a handful of rules that would be easy to remember, communicate to dealers, and use.

Every year, Weima received over 10,000 customer requests, sold 1,000 machines, and estimated that management attention was needed for approximately 100 of the most complex bids. The team expressed reservations about evaluating each of the approximately 10,000 requests that Weima received every year. After discussion, they agreed to the following pre-sorting rule:

- If a request sells for a list price of less than €40,000 and requires little or no customization, then Weima would proceed directly with the offer.

All requests priced over €40,000 or requiring customization, would be evaluated against three additional rules, each of which would be coded yes or no:

- **Financial attractiveness:** Weima will collect at least 70% of the price before the unit leaves the factory and the product is discounted no more than 25%
- **Hidden costs:** The "hidden costs" of installing and servicing the machine (e.g., extreme climate, dangerous political environment, installation area) are limited
- **Experience:** Weima has sold or tested in the field a similar solution in the past 12 months

The team believed the rules struck the rules provided sufficient guidance while leaving room to harness the judgment and experience of dealers. Friz noted:

Our dealers and salesmen have a lot of street smarts, and know which installations are straightforward and which will cause us headaches down the line. So they can accurately assess hidden costs. But they sometimes try to push through projects with low prices or poor payment terms—the financial rule sets clear boundaries on what we will accept and what we won't.

If a request was yes on the financial, hidden cost, and experience rules, Weima would proceed with the offer. If a request had a negative score on any rule, it was passed on to top management for further review. Flagging complicated proposals early was critical, Friz noted, “because if management waits until the problems emerge, it is difficult and costly to fix them.”

The team tested the revised rules against a sample of 50 past requests, and found that they accurately sorted projects into those that should have been rejected, those that could be satisfied with a standard offer, and those that would require customized solutions. Friz planned to communicate the new rules to the sales force, dealers, and new employees and test them between February and April.