2015 was not the year of the TextBlade. The compact, collapsible keyboard for mobile devices was originally shown to the world in January of that year. It featured three main components that fitted together magnetically to form a wireless keyboard, all stored within a sleeve that doubled as a stand for a tablet or ‘phone.

TextBlade was attractive to many people. The spacing of the keys was the same as on a laptop, and (with practice) would allow for much faster typing than when using the screen alone. The components were a marvel of miniaturisation: the space bar also served as a rechargeable battery (good for a month of usage) and held a tiny USB charging device – and the collapsible nature of TextBlade made it fun to use. The user can’t help but feel a little bit like James Bond as they assemble the device from parts that literally ‘jump’ into position as a result of the strong magnets that hold it together.
WayTools LLC

Designing an innovative product and actually supplying it are two very different things. California-based WayTools LLC, the company behind the TextBlade, began accepting pre-orders for the $99 TextBlade in January 2015. Shipping to customers would begin in February, they said.

A year on, the only people who have got their hands on TextBlade are journalist reviewers. A Google search for ‘TextBlade’ delivers mostly positive reviews, but things have been getting ugly on social media and on tech forums, where disgruntled users are expressing their annoyance.

Belatedly, WayTools’ CEO Mark Knighton worked to explain the delay. In July 2015, tech website MacRumours (who had been the first to review the TextBlade) featured an article discussing some of the problems that the WayTools CEO had revealed to them. WayTools also used occasional posts on their blog to communicate news of development and production issues, but the precession of shipping dates doesn’t show the company in a good light.

Quality Problems

One of the things that happened was a textbook case of failing to assure quality. Early TextBlades had been extensively tested, but when WayTools scaled up production, one element in the supply chain let them down. The magnets that make the three main TextBlade parts snap together also provide electrical interconnection, and they must remain free from oxidation. For this, they’re plated... but some of the magnets in a large batch were improperly plated, which could lead to early product failure. These magnets had already been used to produce thousands of products, and WayTools knew of no way to determine which had inadequately plated magnets, so all products fitted with suspect magnets had to be scrapped – and all the unused magnets, too.

A backup magnet order ran into a separate (unspecified) problem, too.
Sometimes Perfect is the Enemy of ‘Good Enough’

There may also have been a problem with a culture of perfectionism at WayTools. A ‘production update’ on the company blog in March reported: “This month, Way Tools made changes to its manufacturing lines to further improve quality and performance.” It went on to say that TextBlades would begin shipping to customers in the last week of April. The change related to the ‘butterfly’ device that gives the keys their ‘travel’ – an important issue when looking for a good keyboard.

Here’s what the WayTools blog (in March 2015) had to say about a redesign, and retooling:

“Way Tools built the tooling for Text Blade over a 2-3 year period prior to announcement, in which we made high capacity multi-cavity moulds for all parts. This means that each time the moulding press injects resin, it actually produces many parts at once. Despite this planned capacity, initial demand for TextBlade has exceeded our projections, and the capacity had to be increased.

“For the butterfly part, we added a second full moulding line to produce it. A second source increases capacity, but it also increases reliability of supply, both of which are helpful.

“When we began the Butterfly mould upgrade described in our status log report, we also launched the second moulding line at the very same time. And for this second line, we specified a more sophisticated moulding system, with certain technical advantages.

“Way Tools invested heavily in a more advanced, much higher output tool ... Because it is more sophisticated however, the robotic mould had a longer completion track than the human-operated line. It is now nearing completion, and will be operational and online in about 2 weeks.

“Way Tools engineers ran validation tests to assess the human-operated mould. After completion of the tests, the results were analysed. Some engineering revisions were performed on the metal inserts for compatibility with the new mould. Those results were analysed.

“It was determined that some further changes to the steel inserts would be necessary, which would require more tooling revision time for the steel stamping die. That schedule was studied in comparison to the robotic mould schedule. It was determined that the robotic mould
would go online sooner, and so the final assembly work was rescheduled to take advantage of the robotically moulded butterfly parts ... Due to the nature of the robotic tooling process and its checkpoints, confidence is high that it will converge as expected. The other subassemblies in the system have gone well, so the primary gating item is when this new robotic tool comes online in mid April. It is therefore unlikely to require much time beyond the end of April to begin releasing shipments.”

More Delays

In May came news that the company’s Quality Assurance process had found “an issue with the final assembly process that could affect key feel and cycle life.” It was hoped that limited quantities of TextBlades would be shipped at the end of May. Meanwhile, the company said they were “continuing to build large quantities of the precursor subassemblies and parts that are unaffected by the final assembly modifications” – which would allow greater quantities of finished products to be shipped once all issues were resolved.

“We try hard to be transparent,” WayTools reported, “but we also don’t want to overstate the precision of our date forecasts. Even though we marked all our dates as estimates, folks generally ignore that and zero in on only one date. So until we’ve released the first shipments, it’s more reasonable to give a range, like May or June, and that’s how we’ll report it.”

In late May came news that the robotic production tooling was working well. They reported how they had changed from using nylon (the material found in the ‘butterfly’ parts in most laptop keyboards) to liquid crystal polymer. This, it was explained, offered a good ‘feel’ when typing, plus exceptional strength and long life.

Keep in mind that WayTools had demonstrated a perfectly functional product in January. They had attracted a large number of orders... and yet they chose to make multiple alterations to the product before a single one had been shipped to a paying customer.

Assembly Issues

WayTools soon discovered a new problem: the stronger ‘butterflies’ caused difficulties during assembly, deforming the polycarbonate material of the ‘keycaps’ when the two were fitted together. A special support tool had to be developed, to
ensure that assembly did not result in damage, leading to a shorter keyboard life.

Additionally, the WayTools blog reported:

“There were also other, smaller issues that needed attention as a result of the improved strength. One was that the new hardness of the material created an audible output that was more “clicky” than we had designed, so we had to adjust our acoustic damper elements. Another point was that the signal strength of our butterfly metal detectors was affected. With some nontrivial amount of work, we were able to get both of those features to even better performance than before we upgraded to the material. We’re currently working to manufacture those adjusted parts to include those improvements as well.”

Meanwhile, customers waited. For some months, updates on the WayTools blog were mostly concerned with variants of the TextBlade, offering ‘keycaps’ that were printed to show Korean characters, or the French ‘AZERTY’ keyboard layout, etc.

Tantalising images show that there are a lot of TextBlades in existence… but not enough to commence shipping, it seems.
While the article was accompanied by images of workers with reasonably large quantities of TextBlades, no shipping date was given. “We can’t ship until each detail is done, but we do believe we’re pretty close now,” they said in August.

Several blog posts about the TextBlade’s firmware followed. (That’s the more-or-less permanent software that is stored on board an electronic gadget, which tells it how to operate.)

A blog post in December reported that the company hoped to begin releasing TextBlades in the second half of January 2016. They also proudly released software for the TextBlade, via Apple’s App Store: software to interface with a product that nobody has, and which was by then almost a year overdue.

Discussion Points

- Are quality problems like the one with the magnets always going to be a risk, when a small company buys in components sourced overseas? Can suppliers’ quality control be guaranteed in any way?

- WayTools could be said to be a victim of their own success, in that they found themselves having to retool, with a robotic production system, in order to meet demand. How else might WayTools have responded to demand exceeding their expectations?

- A year is a very long time in the technology market. Speculate as to the harm that delays in shipping products have done to WayTools, both financially and in terms of their reputation.

- Throughout 2015, WayTools often targeted Apple users. They gave interviews to MacRumours staff; they compared their keyboard with those on Apple laptops; they use iPhones in their promotional pictures, and first released their software tool through Apple’s App Store. Why do you suppose WayTools have chosen to disregard the far larger Android user base?

- Those who pre-ordered TextBlades have criticised WayTools for their failure to provide greater ‘transparency’ as to the status of the product. What are the advantages and disadvantages of providing more updates? Would you recommend doing so?

- Some buyers have remarked upon WayTools’ apparent poor performance in first working through delays in achieving volume production of the hardware, and then having delays relating to the firmware. Is this kind of thing inevitable, or can things be done better in order to reduce the time before products are shipped?

http://capacify.wordpress.com