ZIBA Design and the FedEx Project
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This paper starts with the question of how great products get made. While the question may not be entirely answerable, the exploration provides a useful understanding of how the art of design unfolds in practice. The vital connection between theory and practice is not immediately evident to all in the design community and, as a result, it often has gone unexplored. This paper seeks to rectify the situation, at least in one example. Building upon the model of the case study, which has proved a useful tool in connecting theory and practice in fields as diverse as law, business, and medicine, this paper uses an original exploratory case study on ZIBA Design (a product design company) and a series of projects they did for FedEx as a starting point for thinking about how design works in practice when it moves from traditional areas of communication and industrial design into human interaction and organizational change, what Richard Buchanan calls the third- and fourth-orders of design.[1]

Anyone who has had to send a package and waited too late for a scheduled pickup by an express delivery service may have found himself or herself in a FedEx retail center. These centers, which FedEx calls "World Service Centers" (WSC), display the chaotic nature of their business right where everyone can see it. Enter close to cutoff time, and one finds lines of people, questioning looks, hurried scribbling, and stacks of boxes rising towards the ceiling.

FedEx was going through a process of updating these facilities in November 1998. The WSCs typically are updated every seven to eight years, and this was the first redesign since FedEx's big branding evolution in 1994, when they officially changed the name of the company from Federal Express to FedEx and redesigned the logo. As part of a company review, the brand identity group at FedEx was invited to look at the plans.

The redesign was spearheaded by the Facilities Division, which put most of the emphasis on logistical and technical updates designed to get customers' packages to where they were going faster and more efficiently. For a long time, the fact that FedEx could deliver a package overnight was all it needed to set it apart. But in the years since its founding in 1971, the company had seen an increase in competitors such as the U.S. Postal Service, UPS, and Airborne Express, as well as changes in the marketplace from new technologies including fax, e-mail, and the Internet. When the brand identity group reviewed the new plans, they were not focused on the myriad of new ways FedEx was improving the shipping business.

1   Richard Buchanan, "Design Research and the New Learning," *Design Issues* 17: 4 (Autumn 2001): 10–12.

They were most struck by what had been missing from FedEx WSCs for a long time: the customer.

The brand identity group had been working to integrate the human element into FedEx's products for some time, and they had turned to ZIBA Design, a Portland, Oregon product design company, for help. The problem was that the brand group often did not get involved until a product was near completion. This meant that ZIBA's efforts were limited to bringing a product into alignment with the FedEx brand principles, which were mainly focused on the logo and establishing some usability guidelines. However, this WSC project was different. It was still in the review stages so they had an opportunity to get involved earlier in the process. The brand identity group asked ZIBA to come to Memphis and review the design of the World Service Centers.

ZIBA went to FedEx Headquarters, and watched the presentation by the Facilities Division. Returning to Portland, they prepared a report highlighting what they believed were the missed opportunities in the redesign project. Their primary critique was that FedEx was missing this chance to leverage and enhance their brand within the retail area. The report itself presents ZIBA's case as succinctly as possible:

> A significant amount of time and energy has gone into FedEx's current World Service Center prototype. Particular attention has been paid to solving logistical and technical issues. However, when it comes to leveraging these solutions to build brand equity, the current proposal for the WSC falls short on both appearance and interaction criteria.

As a result of the report, FedEx asked ZIBA to assist in redesigning the FedEx WSCs. The three-phase project began in January 1999.

Over the last ten years, practitioners of product development have ridden a wave of changes into what looks like a completely different place. Academic settings and job listings herald the introduction of new sub-disciplines with names such as "interaction design," "information design," and "design strategy." Design research and the idea of connecting with users has become an acknowledged, if underused, value. Waning is our image of a skill-specific designer working in a solitary studio, emerging with unexplainable, but somehow knowable, greatness. Now the key to great products is widely thought to be collaboration among a diverse set of disciplines which can include visual designers, programmers, industrial designers, architects, engineers, anthropologists, researchers, and sometimes even users themselves.

The nature of design is changing. We sense the shift in the products, people, and companies that surround us. We see traces in our language and processes. We feel that design is different, and yet the forces of change remain largely hidden and out of reach. How exactly are we designing differently, and why? The guiding prin-

ciples behind change hold the key to harnessing it as a tool for the designer. Until we understand them, the change leads design rather than design leading the change.

The products that surround us are our best clue to the principles working behind the scenes. Products are grounded by the thoughts and actions—the human and organizational experience—involved in their creation; not just their use. Recent products tell a story of shifting needs within the industry; not a desire to evolve design. This distinction is important because it means the forces for change came, at least partly, from outside the realm of design practice.

In the midst of change, many companies find themselves compelled to chart a new course. ZIBA Design is one of these companies. And its work with FedEx has all the qualities of an epic tale from this era; with products ranging from communication pieces to in-depth environments, innovative research, and articulated strategy. Woven throughout their story are three recurring themes, each with a deep connection to this new idea of design: brand, research, and argument. Like an archeological dig, the story of design's changing nature can be read in reverse. Start with a product that embodies the change, and in its story find hints as to how and why it came to be.

Brand

Brand has been changing almost as quickly as design. It first became a part of the modern corporate lexicon as a way to talk about a company's logotype, which was seen as the primary vehicle for corporate communication. Over time, more products meant more competition. Companies had to say more in order to differentiate themselves. To help companies figure out what they should be saying, brand evolved from being a thing (a logo) to an idea. Today, "brand" means talking about a company's values, goals, history, and traits: in short, a company's entire narrative. In a world in which every contact with the customer or prospective customer is a chance for a conversation, brand has become what the company is trying to say. But this extension of brand comes with a price. As an idea, brand has lost its clarity of direction for a particular form. What says "stability" in print communication is not the same thing that says "stability" in a physical form. Brand has become an idea in search of a translator.

Part of the shift in design thinking over the last decade has been the idea that design can embody a strategy. Historically, design has been seen as a set of skills and universal design principles tied to a specific form. Designers blended a client's desires with their interpretation of these principles for representation in a particular medium. But seeing design as a strategy requires something more detailed than universal principles and a client's whim. The products created from a strategic initiative should show that they contribute to an overall vision. But where does this vision come from? Since

design primarily is practiced in the service of clients and companies, the strategic vision often has roots outside the design world. Design, with a history of turning needs into products, has become a translator in search of an idea.

Bringing brand and design together is one of the fundamental shifts in thinking that guides design's recent changes. ZIBA had convinced FedEx that the WSCs were falling short in the areas of appearance and interaction.

Reimagining the World Service Centers meant dealing with many different forms within one space. Signage, displays, furniture, and environment all would have to speak with the same voice. To establish a foundation for the appearance criteria that could be used across multiple platforms, ZIBA's first course of action was a Visual Brand Study. The challenge came in three parts: articulate FedEx's brand strategy, transfer that strategy into the visual and verbal dimension, and establish design principles to guide a design language that would be applicable across an entire system.

First, ZIBA needed to know how FedEx defined its own brand. Starting with the brand work FedEx already had done, ZIBA held numerous brainstorming sessions internally and with FedEx to narrow the brand down to two continuums that would establish a frame of reference. One continuum was traditional versus modern. The other was dynamic versus stable. ZIBA used these to create a perceptual map, a graph allowing for brands or products to be plotted in relationship to each other using the same characteristics. ZIBA mapped FedEx's desires, and self-defined current and historical brand positions, onto this perceptual map. In essence, Ziba had FedEx define in very simple terms where it presently saw itself on these continuums, and where it saw itself going (Figure 1).

Once ZIBA knew where FedEx wanted to be, they started translating. It wasn't enough to know what FedEx thought about their brand. ZIBA needed to know what customers thought of the brand, and how customers would associate certain visual and verbal cues. Using these axis terms as the foundation, ZIBA developed a verbal exercise comprised of words describing personality characteristics and a visual component that dealt with assembled images. The act of translation is always a tricky one. Not only must it take into account what it being added and what it being taken away, it also has to consider how the very act of translation changes what is being said. In the verbal exercise, ZIBA sought out personality characteristics from sources such as Meyers-Briggs, VALS (a marketing tool that links personality traits and consumer behaviors), and FedEx's own brand attributes.

In planning for the visual exercise that would help ZIBA assign visual characteristics to each of the four quadrants on the perceptual map, they had to deal with the issue of content. While the content of the images was not the focus of the test, content that came with its own set of associations could distort the analysis of

the results. From an initial list that included categories as diverse as dogs, teapots, and automobiles, the group narrowed it down to three categories: architecture, materials, and products. The resulting images were cropped and abstracted to represent certain formal design principles without drawing associative bias.

Customers of FedEx and competing priority mail services then were asked to perform these verbal and visual sorting exercises. In the verbal exercise, customers associated personality characteristics with FedEx and its primary competitors: UPS, the U.S. Postal Service, and Airborne Express. The terms could be applied to any, all, or none of the companies. The personality characteristics were based on the perceptual map terms: traditional, modern, dynamic, and stable. For the visual exercise, customers were asked to sort the images under the four axis categories: dynamic, stable, traditional, and modern. Each image was presented as a pair, and the customer was asked to place each image on top of the axis descriptors. For example, an image pair could be placed on dynamic and modern. In total, one-hundred and eight customers were interviewed in three U.S. cities: New York, Los Angeles, and Chicago.

Once ZIBA had analyzed this data, they were able to do two things. First, they used the verbal component to develop brand personalities for FedEx and its competitors. These personalities then were charted on the perceptual map showing how customers' vision of FedEx related to the company's vision, as well as how FedEx looked compared to its competitors (Figure 2). The results were interesting in a number of ways. Customers saw FedEx with a much less focused brand personality than FedEx would have liked,
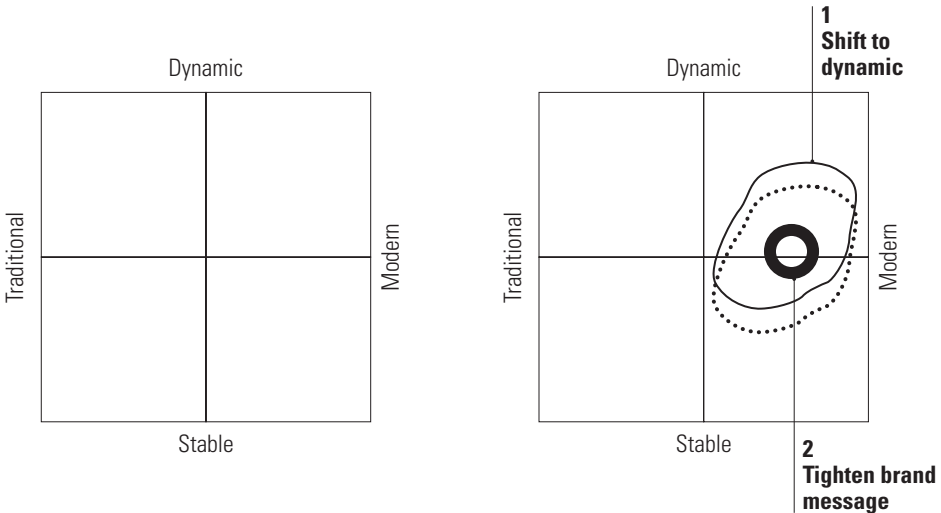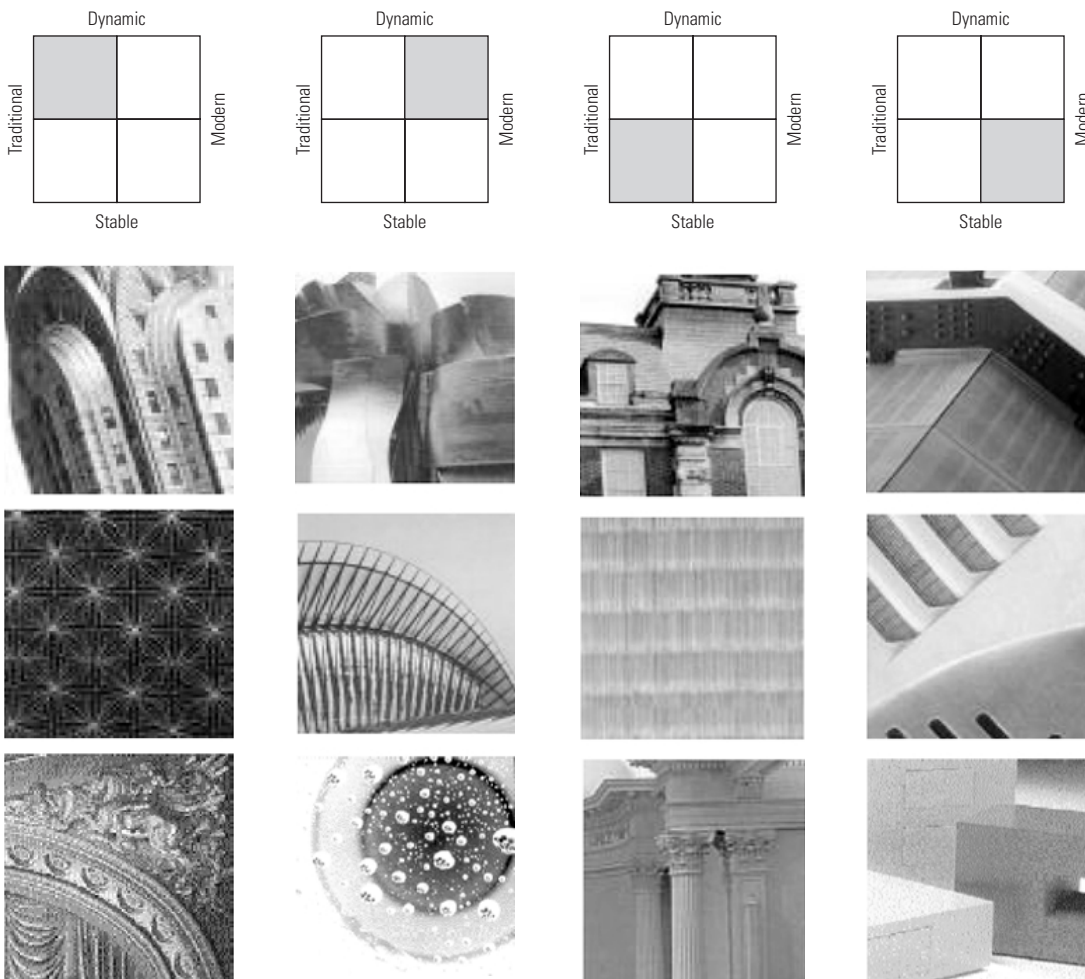

Figure 1
Perceptual map.

Figure 2
Findings charted on perceptual map.

and while they did apply some dynamic characteristics to FedEx, on the whole, they saw FedEx more entrenched in the stable characteristics. ZIBA's recommendation for changes to the brand message included shifting towards dynamic and an overall tightening of the brand message around the concept of modern.

The shift towards dynamic showcased one of the more interesting challenges for ZIBA in visualizing the brand: the desire to strike a balance between dynamic and stable. It was clear from the data that customers needed that balance. Companies perceived as too stable didn't have the necessary drive in a fast-changing business, and companies perceived as too dynamic made customers nervous about whether they could be trusted. So, visually and verbally, the FedEx brand would need to walk a line between opposites.
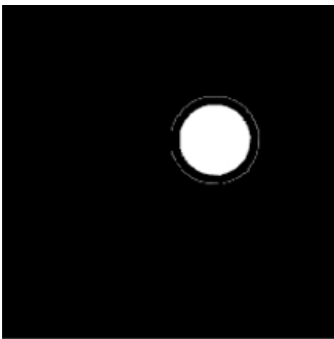
The visual component of the research allowed ZIBA to develop a visual and descriptive identity for each of the four quadrants on the perceptual map: traditional/stable, modern/stable, modern/dynamic, and traditional/dynamic. The development of these quadrant identities was a crucial step because it set the

Figure 3
Visual identities for the four quadrants.

Drama

Plurality

stage for the way ZIBA and FedEx would talk about the appearance choices for the rest of the project. In an interesting move, ZIBA did not shy away from terms and language more common to the design world, such as "controlled chaos" and "organic." They took this opportunity to bring FedEx along with them in translating the customers' voices into design principles, and it proved to be a vital step in maintaining a high-level discussion. The visual identities show how ZIBA used the images, design terminology, and personality characteristics to define each of the quadrants (Figure 3). Interestingly, during the visual component of the research, none of the participants put images on the dynamic/traditional quadrant. Lacking direct data, ZIBA created their own definition for that intersection of ideas so that the entire picture of the perceptual map would be available to FedEx.

Merging the visual and verbal research findings, ZIBA created the basis for Quantum, the design language they were developing for FedEx. The first step was to extrapolate some larger principles from the intersection of where FedEx wanted to be on the map, and what that place looked like. Numerous brainstorming sessions led them to settle on three principles: drama, plurality, and structured chaos. ZIBA visualized each principle with a created image that they felt embodied the idea, and they defined each principle in terms that included scale, tension, movement, perspective, structure, relationship, float, lightness, and experience (Figure 4). Again, at this phase, ZIBA did not shy away from more complex terminology and ideas. This not only helped to elevate the client's understanding of the brand personality, but also introduced terms and ideas that would be crucial to differentiating FedEx from its competitors. These principles became the basis for understanding FedEx's brand in visual terms, and would be embodied in the visual elements in the FedEx World Service Centers.
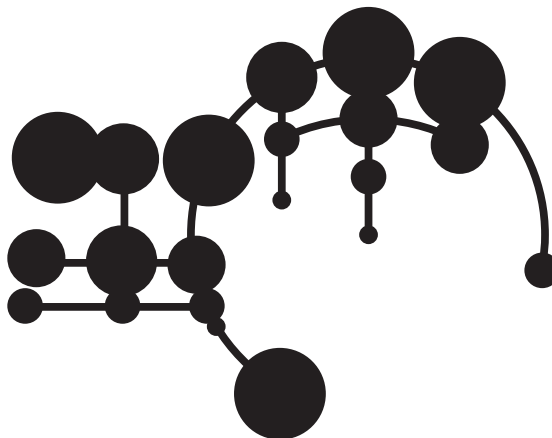
Structured Chaos

About halfway through the Visual Branding phase, FedEx came to ZIBA with another project. A different division had been working on designing a "PowerPad," which would be the next generation of signature-capture devices for FedEx couriers. The project largely was completed by the time it was shown to the brand manager of FedEx, and she turned to ZIBA for help in bringing the device into alignment with the brand and exploring the best way to capture digital signatures. ZIBA did what they could, exploring a number of options for digital signature and making recommendations to the product group, but the final changes to the PowerPad were minimal. In other respects, however, the interjection of the PowerPad project was incredibly fortuitous. It provided ZIBA with a vivid example of how appearance and interaction could be the foundations for product development instead of elements added as an afterthought. From this realization, the Courier Tools project was born.

ZIBA knew that the data gathered from the visual brand study were not specific to the WSCs. They were applicable to many aspects of the FedEx product line. ZIBA proposed that they use these principles to develop an additional design language for FedEx that then could be used as a foundation for the development of courier tools. Couriers and the tools they used were an important touchstone for the customer, but largely had been neglected in FedEx's brand strategy. FedEx was wary that another design document with color call outs and descriptive text would be useful to people within the company. For the project to be effective, it needed to show how the brand could take form in a product, and how interaction could inform the design. FedEx decided that ZIBA would design a set of courier tools to the final prototype stage. From that point on, the Courier Tools project would run concurrently with the WSC project, both building on the foundation of the visual brand study.

Research
As the idea of what can be designed expanded to include systems of products working together, people and their actions have played an increasing role. Understanding what people do, how they do it, and why they do it often is grouped together under the heading of research. Research can take many forms, including everything from surveys to observation, and often borrows from other disciplines. When research is conducted in the name of design, it usually is attempting to bring human motivation and need into the product development process.

While the value of research had been making inroads for a number of years, the reality of conducting research has met some resistance from clients' budgets and time frames. In the FedEx project, ZIBA advanced the cause by making research an integral, non-negotiable part of the work. When ZIBA told FedEx that the WSCs were falling short in the interaction realm, it meant that one of the

Figure 5
World Service Centers, before redesign.

Figure 6
Customer segmentation map.

primary criteria for judging the retail spaces should be what people were trying to do there. In establishing interaction as a foundational element in product development, ZIBA created an expectation that only research could fill.

In phase two of the WSC project, ZIBA began an interaction study. To define the interaction criteria for FedEx's WSCs, ZIBA employed a number of different approaches: video ethnography, behavior observation, environment mapping, "live the life" studies, and interviews with customers, agents, and couriers. The video ethnography component involved placing video cameras at four sites in New York, Chicago, and LA to capture daily activities at the WSC. Behavior observation took place in multiple cities over a three-week period, and included not only FedEx centers but also competitive spaces such as UPS Centers, USPS post offices, and the Postal Annex. In these observational instances, attention was paid to watching circulation and flow patterns, as well as user interactions with people and the space. With environmental mapping, the FedEx WSCs were diagrammed and photographed to capture wear patterns, wayfinding, spatial layout, graphics, and signage. In order to "live the life," ZIBA employees played the part of customers with different needs at FedEx centers and competitor sites. The interviews were done primarily as "nab" interviews in which ZIBA attempted to document the "life of the package" and the process involved in getting it shipped (Figure 5).

In attempting to analyze all this data, ZIBA eventually came up with six interaction criteria. Four of the criteria were definitions of the customer segmentations: "High Maintenancers," "Do-It-Yourselfers," "Confirmers," and "Frisbees." Each occupied a quadrant on the segmentation map created from the x axis of service (span self to agent) and a y axis of preparedness (span low to high) (Figure 6). A description of each customer type told the story of what they are looking for when they go to a FedEx WSC. The High Maintenancers arrived at the WSC completely unprepared.
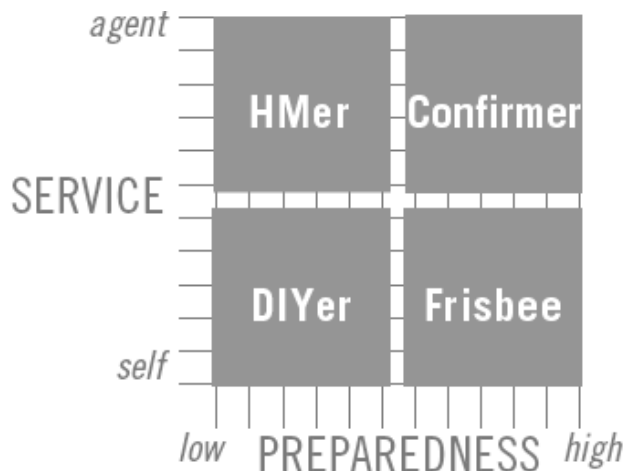
They didn't have anything packed or an airbill filled out. They required and requested a considerable amount of service. The Do-It-Yourselfers also arrived at the WSC with their packages unprepared, but they understood what needed to be done and planned to prepare the package for shipment on their own with minimal assistance. The Confirmers had their package all ready to go, but they needed confirmation from the agent that the service they had selected and the way they filled out their airbill would result in the delivery they needed. The Frisbees don't need any assistance at all. They arrive with their package all ready to go, and just plan to drop it off. The two additional interaction criteria were time-of-day, which dealt with the ebbs and flows of traffic into the space, and package size, with the goal of minimizing the multiple moves of large packages.

This initial customer segmentation was useful in a couple of ways. For one thing, it provided ZIBA and FedEx with a story and some personality for their different customer types. Giving them actions and goals allowed them to be referenced easily as ZIBA continued with the design process. Secondly, it provided the gateway to understand the activities that took place in a FedEx WSC. The activities analysis showed where the customer segments crossed over each other, and where they had their own specific needs. The six main activities defined by ZIBA were: Find, Enter/Orient, Wait, Pack 'n Prep, Trade-off, and Hand-off.

Concurrent with the WSC research, ZIBA was conducting interaction research for the Courier Tools project. FedEx initially asked ZIBA to explore the possibility of six tools: PDA, holster, printer, transmitter, cart, and bag. To get an understanding of how the tools would be used, ZIBA researchers spent time with couriers on their routes. The research spanned three cities and multiple types of routes, including those located in one building (Sears Tower in Chicago), and those that cover entire neighborhoods. The goal was to understand how couriers use their tools throughout the day, and then distill that information for the designers into criteria that defined what, when, where, why, and how each tool would be used. The analysis resulted in courier behaviors being grouped into four distinct categories, each with a goal and a set of activities: organize, transport, interact, and process. In addition, research found that couriers moved between these behaviors very quickly, sometimes performing two or more at the same time.

The distilled interaction data was used to develop multiple concepts for each tool. These concepts were developed in sketch form and each included multiple views, indicators of how the tool would be used, a description of the tool's purpose, an indicator of the behavioral focus for this tool, and the key design requirements. The behavioral focus indicator allowed FedEx to understand how a PDA focused on organizing would be different from a PDA focused on interacting. It also constantly reinforced the idea that ZIBA was

developing a set of tools: separate products with their own interaction requirements that ultimately would have to work together to cover a courier's full breadth of needs.

Argument

Argument is an underused and undervalued tool, often disregarded or forgotten in the design world. It is the argument, however, that sets up expectations and allows even client service designers to maintain control over a project. The argument framework must be open enough to allow for creativity, and structured enough to keep discussion and evaluation on track. If used effectively, argument also becomes a way of educating clients and the community of use about what should be valued in the design.

ZIBA established a powerful and simple framework for design from the first moment of discussion: appearance and interaction. As a tool, it was useful internally as a way of focusing and critiquing their work, and externally as a way of communicating to FedEx the power of an overall design language. In fact, the strategy was so successful that FedEx hired ZIBA, even before the WSC project was done, to do another project using the same framework: the Courier Tools. Having established the framework, ZIBA's challenge came in combining the appearance and interaction criteria into products that visually and functionally shared an underlying system.

Having identified the form and interaction requirements of the basic set of tools, ZIBA's goal was to integrate this information with Quantum in the development of the courier tool design principles. At this point, Quantum was still just a set of principles (drama, plurality, and structured chaos) and an understanding of FedEx's brand. The next phase was to integrate the interaction data and start producing actual physical models. The first initial set of ideas began as sketches. As they narrowed in on certain ideas, they moved to making physical models. The making of physical models early on in the process proved to be important for testing the interaction specifications, but also for evaluating the appearance principles. They realized as they were designing that, since the principles moved beyond color and shape, the ZIBA team needed their models to move beyond color and shape as well.

In this early phase, the ideas were allowed to run fairly free, and the designers took their guidance from the Quantum principles. In fact, the fairly esoteric terms, drama, structured chaos, and plurality became an incredibly useful way of checking the design direction. It gave them all a common language and reference point. Initially, the team created four different design languages, and took these out into the field to get feedback from couriers and customers. The results of that research informed the design of the final set of tools, which would exemplify Quantum. As the design became more focused, the need to justify every design decision became more evident.
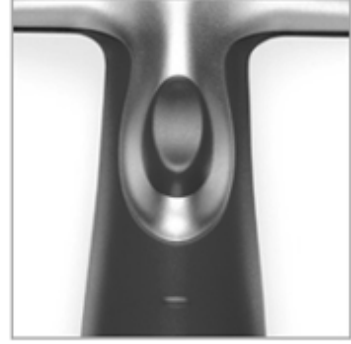
FUNCTIONAL FORMS

TRANSITIONAL FORMS

ONE-PLANE SYMMETRY

SURFACE ZONING

CONTINUOUS OUTLINES

SYMMETRIC PATTERNS

Figure 7
Courier Tools Design Language.

According to Bob Sweet, the project manager, "…choices really had to be questioned towards the end. We found ourselves asking questions like why is this logo small and on the front and this logo is three times bigger and on the back? There ultimately had to be a visual/appearance reason or an interaction reason for every decision in the product."

When it was finalized, the Quantum design language as interpreted for courier tools was comprised of six principles: functional forms, transitional forms, one-plane symmetry, surface zoning, continuous outlines, and symmetric patterns (Figure 7).

In a different corner of the ZIBA offices, interaction and brand data were merging in another way. To accommodate the many variations between centers, the design for the WSC focused on a kit of parts approach. This plan envisioned neutralizing the space, and then rolling in the furnishings. There would be certain elements that every WSC would have, and others that would be added depending on the space. It also allowed for the new design to be leveraged in partner sites.

The kit of parts itself was designed to accommodate certain general and specific customer needs. For example, a FedEx orange clock that extended perpendicularly from the building was designed to provide easier identification and orienting from outside. The digital menu board above the agent counter allowed for up-to-the-minute messaging and customization from store to store, which provided much-needed information for High Maintenancers and Confirmers. A drop slot right inside the door allowed Frisbees to get in and get out as quickly as possible. A glass front allowed all customers to orient themselves before they even entered the space. Drop slots in the wall behind the agent counter allowed Confirmers and all customers to feel confident that their package was on its way, and provided a protected area for agents to deal with the onslaught of processing that happens near cutoff times. The packaging area provided all of the materials and space necessary to prepare a package for shipment, a must for the Do-It-Yourselfers. The prototype World Service Center, built in a warehouse in Memphis, became a living example of the intersection of appearance and interaction.

At the end of the Courier Tools project, ZIBA delivered the prototypes of the tools, as well as reports detailing the courier tools guidelines to FedEx. These reports included detailed descriptions and diagrams of the work process and the methodology. Sensing that perhaps FedEx didn't fully understand the power of the design language they had just created, ZIBA decided to provide one, final example. Led by Sohrab Vossoughi, the team set out to redesign the "SuperTracker," FedEx's current scanning tool (Figure 9).
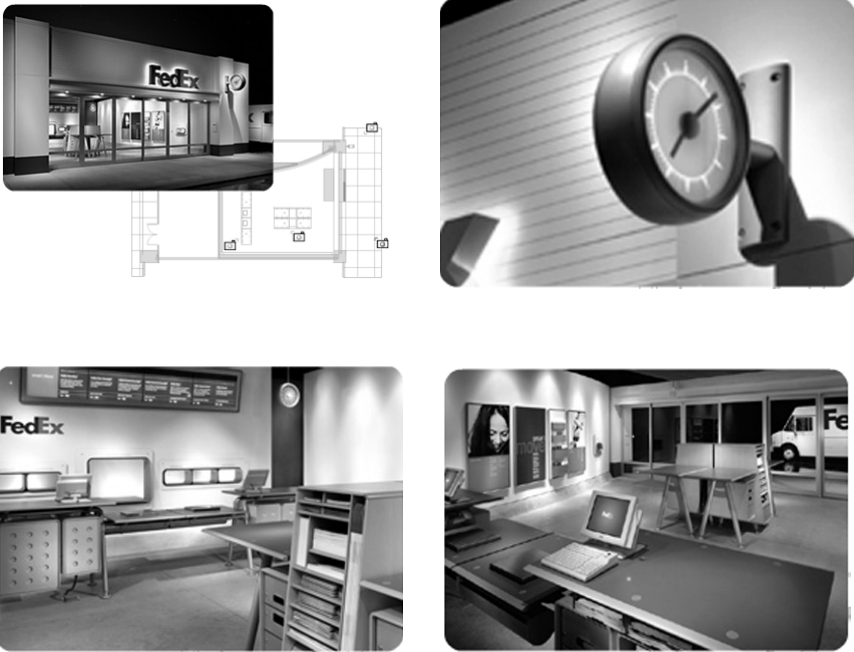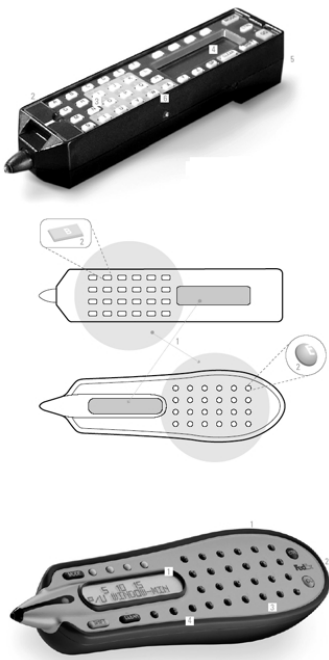
Figure 8
Prototype WSC.

In just three weeks, with no changes to the functionality, the ZIBA team redesigned the SuperTracker according to the newly devised design principles and interaction criteria. They improved the ergonomics, improved the usability; and brought the appearance of the tool into alignment with the FedEx brand and courier tool language. The resulting product is a powerful example not only of the impact design can have on an individual product, but also of the impact that strategic design can have on a company.

Conclusion

When designers even subtly change the framing of the problem they set out to solve, they change the nature of their practice.

ZIBA looked to brand as the foundation for an entire platform of products, and found themselves forging innovative methods in order to translate the brand concept into visual criteria they could use. ZIBA critiqued the interaction component of the WSC project, and research became a necessary and vital component of the redesign. They argued that interaction and appearance were valuable missing elements from the FedEx product development process, and the shift in perspective made the customer present in the retail environment and the courier an extension of the brand.

In each instance, the change to ZIBA's practice was influenced by a new way of thinking that then was translated into a new way of working. This distinction between the vision and the method is an important one. Adopting new methods does not mean much if the idea guiding the process is the same as before. In fact, a well-articulated vision can be more enduring than the resulting product. Trace the line from FedEx's old retail centers to their decision to purchase Kinko's in 2003. It runs right through an awakening to the customer's values.

The point in investigating the ZIBA / FedEx story is not to catalog exactly how design has shifted, and then formulate a new static definition of design. The great learning in this story is simply that design can shift. And designers and design organizations can be the force behind that change. In setting out to solve new problems, or to solve the same problems in a new way, designers will find they need different tools, different media, different people, and different ways of talking, but these things shouldn't be mistaken for the change. They are merely the signs that change is happening; that something is going on beneath the surface.[2]

2   Ibid., 60–61.