



Design and Innovation through Storytelling

by

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Once upon a time, there was a company that made diapers.

Every day it worked hard on its technologies and processes to make diapers that managed wetness as well as possible. It invested in developing highly absorbent materials and in creating seals tight enough to keep wetness in, but not so tight as to harm the child. It used conjoint analysis to assure itself that every feature of its diapers and their packaging was accepted by customers.

Until, one day, it decided that it was tired of being the number two diaper company and that maybe it needed to think in some new directions in order to be able to grow.

Because of that it hired a design firm that proposed to go out and closely observe and interact with its customers – parents and other caregivers – and end users – children – to gather insights into diaper wearing that the company hadn't yet discovered. That design firm discovered that both parents and children prefer to think of diapers as clothing – rather than as waste control bandages, as the company thought of them.

Because of that there was much debate inside the company about this new way of viewing its work, and what it should do in response.

Until finally it introduced a new kind of diaper in the form of underpants that kids can pull on themselves.

And ever since the company has been number one in the disposable training pants market. The immense success of this product prompted the company to rethink its role in the lives of babies and toddlers as involving more than wetness control and thus to approach its markets in a very different way.

This story, presented here using the classic elements of story structure, is about the successful application of what some today call “design thinking”¹ to develop Huggies Pull-Ups at Kimberly-Clark. The story has been told in numerous venues and various media², even though the events that spawned the story happened more than ten years ago. That the story endures today as an iconic example of the role of design in innovation is a function of its salience – parts of the story are funny, it can be told succinctly, but with impact, and is emotionally connecting – and of our ability to connect with the story and make sense of it in our own lives.³

In this paper, we use the Kimberly-Clark story, in which one of the co-authors was a key protagonist, to describe and explore the role of stories in the design process and in forming and re-forming organizational culture. In particular, we focus on the roles of stories in design to both inform the design process and to inspire new thinking in an organization about how to better serve a customer.

¹See for example, Beckman, S. L., & Barry, M. (2007). Innovation as a Learning Process: Embedding Design Thinking. *California Management Review*, 50 (1), 25–56 and Brown, T. (2008). Design Thinking. *Harvard Business Review*, 84–92.

²See for example, Seelig, T. (2009). *What I Wish I Knew When I Was 20: A Crash Course on Making Your Place in the World*. HarperOne and Leonard, D. A., & Rayport, J. (1997). Spark Innovation Through Empathic Design. *Harvard Business Review*, 75 (6), 102–113.

³Brown, J. S., Denning, S., Groh, K., & Prusak, L. (2005). *Storytelling in Organizations: Why Storytelling is Transforming 21st Century Organizations and Management*. Burlington, MA: Elsevier Butterworth-Heinemann.

We begin with a little background on the role of stories in cognitive development, organizational development, and culture sharing and formation, and then move on to the specific role that stories play in design and innovation.

THE ROLE OF STORIES

Physiological psychologist Renée Fuller found that the presentation of miniature stories – composed first of just nouns, then of nouns and verbs—to severely mentally impaired subjects triggered dramatic growth in cognition. These miniature stories or “story engrams” underlie all languages, scientific discoveries, and descriptions of the world, and thus when used cause a primal reaction in people, even those with serious impairments.⁴

The fundamental construct of storytelling is likewise important in child development. Children learn how to “imagine a course of action, imagine its effects on others, and decide whether or not to do it” through the stories they hear in childhood.⁵ Thus, stories are at the heart of how our brains develop and how we learn at a very early age.

Storytelling is critical to the development of organizations as well. Stories are the means by which knowledge is exchanged and consolidated, and corporate cultures are developed and maintained. Multiple lenses on storytelling in organizations—social constructivism, organizational symbolism, critical theory—have been used over the years to gain insight into the role that storytelling plays, particularly in expressing organizational culture.⁶ Storytelling in organizations has been identified as a means to share norms and values, develop trust and commitment, share tacit knowledge, facilitate unlearning, and generate emotional connection.⁷ In a very practical sense, storytelling is recommended as a superior approach to executing, gaining buy-in for, and communicating strategic planning in organizations.⁸

Finally, storytelling is core to the formation and sharing of culture. In academic terms, the function of the story is to find an intentional state that mitigates or at least makes comprehensible a deviation from a canonical cultural pattern. The stories that explain such deviations provide insights into what normal and abnormal behaviors and phenomena are when we encounter them.⁹ For example, the stories people tell about the classic short story attributed to Hemingway – “for sale, baby shoes, never worn” — reveal insights into what we consider normal and abnormal in our culture. By sharing stories within a community, people make meaning both shared and public, ultimately creating what we call culture. Plato even went so far as to say that “Those who tell the stories rule society”.¹⁰

In the broadest sense, then, stories and storytelling are at the very heart of human cognition, of the interactions of humans with one another, and of the development of cultures in which humans thrive.

We turn now to a description of the design process, and use the Huggies Pull-Ups story to explicate the role of storytelling in that process.

SOME BACKGROUND ON THE HUGGIES PULL-UPS STORY

By the late 1980s, diapers had become a commodity business. The competitors in the diaper market had successfully applied their engineering talents to solve the problem of wetness control, but all of them had ended up in more or less the same place, so diapers were undifferentiated and cost had become the basis of competition. Worse, much of the specialized equipment used to produce superabsorbent diapers was then being sourced from Japan, making U.S. manufacturers dependent upon Japan for advances in process technology and less able to offer meaningfully differentiated products.

Kimberly Clark was no exception. It had some (but not nearly all) of the patents on the core technologies underlying diaper design. These highly-valued patents on a variety of diaper technologies allowed it to create superabsorbent diapers that kept liquids away from babies’ bottoms and controlled leaks with non-woven elastimers that gently sealed around little legs without causing redness. Kimberly Clark so valued its technologies and patents that it called them out as key features on its diaper

⁴Fuller, R. (1991). The Primacy of Story. *In Context* (27), 26–28.

⁵Shaw, G., Brown, R., & Bromiley, P. (1998). Strategic Stories: How 3M Is Rewriting Business Planning. *Harvard Business Review*, 76 (3), 41–50.

⁶Boyce, M. E. (1996). Organizational story and storytelling: a critical review. *Journal of Organizational Change Management*, 9, 5–26.

⁷Sole, D., & Wilson, D. G. (2002). *Storytelling in Organizations: The power and traps of using stories to share knowledge in organizations*. Harvard University, Graduate School of Education. Cambridge, MA: Learning Innovations Laboratory.

⁸Shaw, G., Brown, R., & Bromiley, P. (1998). Strategic Stories: How 3M Is Rewriting Business Planning. *Harvard Business Review*, 76 (3), 41–50.

⁹Bruner, J. (1990). *Acts of Meaning*. Cambridge, MA: Harvard University Press.

¹⁰Good Reads, Quotes by Plato, <http://www.goodreads.com/author/quotes/879.Plato>, copyright 2009, referenced 10/1/09

packaging so that consumers were fully informed. Unfortunately for Kimberly Clark, other manufacturers had solved the wetness control and leg seal problems as well, had protective patents of their own and provided customers the same basic functionality.

Kimberly Clark prided itself on what it believed was a deep understanding of its customers. Through an extensive series of photographic records, carefully doctored to protect the identity of the naked toddlers pictured, it measured and characterized baby bottoms. From this ergonomic examination, it designed a set of mannequins of different shapes and sizes, which it used in its labs for product development and testing. The mannequins pooped and peed and were outfitted with mechanical armatures that moved their legs so that diapers could be tested under the various conditions that might be imposed upon them by real toddlers.

Kimberly Clark's market research department supported this work with detailed conjoint analysis studies of the specific features of the diapers and the tradeoffs customers made among them. Interestingly, at the time, the Kimberly Clark marketing folks characterized businesses such as computers and television as "emotional businesses" that had some reason to connect with customers, but saw their own diaper business as "unemotional" and were thus content to understand their customers through an analytical lens.

This perspective or "frame" caused them to miss the opportunity to connect emotionally with their customers.

In 1988, Proctor and Gamble introduced gender-specific Luvs and changed the game. These diapers were designed to distinguish boys' from girls' diapers, suggesting that diapers could indeed be differentiated, and were not just commodity products. When, as a result, Proctor and Gamble took over the number one position in the marketplace, Kimberly Clark reacted. Bill Hanson, Director of Research and Engineering, decided that Kimberly Clark had to do something really different if it were to regain its number one position in the market. He engaged a California-based design firm, GVO (now Point Forward), to help him do that.

The following outline describes the steps in the design process they followed, as well as the journey on which GVO took Kimberly Clark that concluded with Huggies Pull-Ups and a new way of thinking inside Kimberly Clark.

THE DESIGN PROCESS

The design process depicted in Figure 1 entails both analytic and synthetic elements, and toggles between the theoretical (abstract) and practical (concrete) realms.¹¹ In this model, observations or experiences in the concrete world are converted to frameworks or insights through a process of reflection. Frameworks, in turn, become imperatives or ideas through a convergent thought process. Imperatives are then materialized in solutions by taking action in the concrete realm once again. This

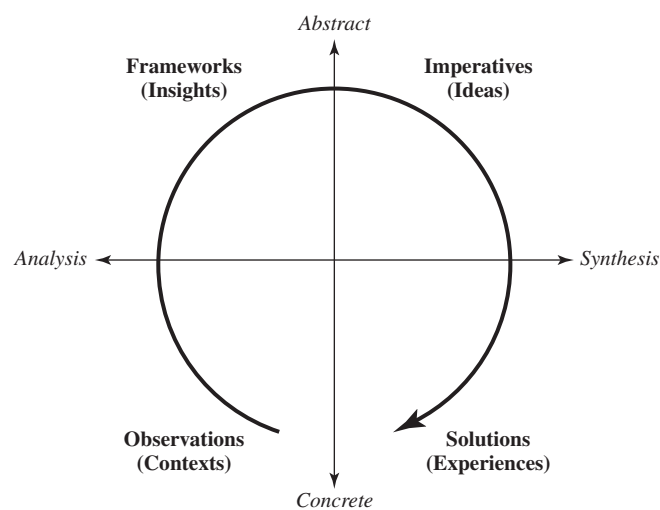


Figure 1. Design Thinking Cycle

¹¹See Beckman, S. L., & Barry, M. (2007). Innovation as a Learning Process: Embedding Design Thinking. *California Management Review*, 50 (1), 25–56 and Owen, C. (1993). Design Research: Building the Knowledge Base. *Design Processes Newsletter*, 5 (6).

model closely mirrors experiential learning theory models,¹² which suggest four learning styles associated with the steps of the design process: divergent learning styles are best suited to the observation task, assimilating styles to the framing task, converging styles to creating imperatives and accommodating styles to developing solutions.

Here we examine each of the four activities in the design process – observation, frameworks, imperatives, and solutions—in more detail, with the objective of making clear the role of storytelling throughout the process.

Observation

Observation is a need-finding process in which the explicit and implicit needs of those for whom the design (or redesign) is being undertaken are identified. Explicit needs show up directly in people's behaviors, and thus can be readily captured through direct observation of users performing the activities of interest in the use context and of the associated interactions and objects used.

Observing in the use context is particularly critical. "The time, place, conditions, and circumstances within which aspirations are conceived, decisions are made, and product usage takes place have an impact on the levels of satisfaction experienced in the aftermath. Research practice that ignores context is doomed to misunderstanding and misrepresentation".¹³

GVO, for example, spent time in stores watching people in the diaper aisles. They watched people puzzle over which size diapers to buy, and frequently observed opened packages with a single diaper lying on top, usually evidence, they later learned, that a father who wasn't sure what size diapers his child needed had been there.

Implicit needs, on the other hand, are more difficult to surface, as people are often unaware of them or cannot articulate them. Implicit needs emerge from deeper understanding of people's attitudes and values. To discover implicit needs requires asking people to explain why they do what they do, but often they cannot.

To find out what is going on in people's heads, then, researchers elicit and capture the stories that people tell to explain what they are doing, and from those stories extract the meaning behind people's behaviors.¹⁴ "The main task of ethnography is not only to watch, but also to decode human experience—to move from unstructured observations to discover the underlying meanings behind behavior; to understand feelings and intentions in order to deduce logical implications for strategic decisions."¹⁵ In short, design researchers seek to understand human experience and ultimately culture as well.

"Experience is meaningful, and human behavior is generated from and informed by this meaningfulness. Thus, the study of human behavior needs to include an exploration of the meaning systems that form human experience".¹⁶ We often refer to these meaning systems as culture. An understanding of *why* people do things must be "immersed in culture, it must be organized around those meaning-making and meaning-using processes that connect man to culture".¹⁷

And how is culture communicated? Through stories.

People take the events that they experience, and organize them together into stories. Every culture has a basic set of shared stories or frameworks that explain how the world works, and therefore explain *why* people do what they do. Deciding, for example, what type of product one will purchase to clean one's face depends upon culturally based norms and values about cleanliness and how and where cleaning oneself should take place.¹⁸ It is the shared stories that expose common human experiences and cultural needs that observation seeks to elicit.

When GVO began exploring the use of diapers, its designers spent a lot of time watching parents take care of their infants and toddlers in a broad range of circumstances. What they quickly learned is that the

¹²Kolb, D. A. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, NJ: Prentice-Hall.

¹³Mariampolski, H. (2001). *Qualitative Market Research: A Comprehensive Guide*. Sage Publications.

¹⁴Elliot, R., & Jankel, N. (2003). Using Ethnography in Strategic Consumer Research. *Qualitative Market Research: An International Journal* , 6 (4), 215–223.

¹⁵Mariampolski, H. (2001). *Qualitative Market Research: A Comprehensive Guide*. Sage Publications.

¹⁶Polkinghorne, D. (1988). *Narrative Knowing and the Human Sciences*. Albany, NY: SUNY Press.

¹⁷Bruner, J. (1990). *Acts of Meaning*. Cambridge, MA: Harvard University Press, pages 11–13.

¹⁸Holt, D. (1997). Poststructuralist lifestyle analysis: conceptualizing the social patterning of consumption. *Journal of Consumer Research* , 23 (4), 326–350 and Thompson, C., & Troester, M. (2002). Consumer value systems in the age of postmodern fragmentation. *Journal of Consumer Research* , 28 (4), 550–572.

stories that were important to customers were not the stories that were important to Kimberly Clark.

Kimberly Clark's stories were all about fluidics experiments and the resulting "hazardous waste disposal devices" they sold as diapers. These stories were in stark contrast to the stories parents told about nurturing and caring for their children.

Parents viewed diapers as a means of keeping their children comfortable, and included diapers in stories told about nurturing their children. Parents complained, for example, that diapers were too much like little shower caps that rustled when the children moved and made their children feel less cuddly.

GVO also heard stories about the aspirations and fears parents held for their children. One such story, told as the cameras were being shut down and put away, conveyed the great embarrassment of one mother upon being asked by her neighbor "is your child still in diapers?" This story, repeated over several observations, eventually yielded the core insight leading to Huggies Pull-Ups.

Frameworks

Framing, in the upper left-hand quadrant of Figure 1, involves sifting through all the qualitative materials gathered in the observation stage to identify interesting nuggets of information, find patterns of behavior, and see what is missing for those observed. In particular, it involves identifying the narratives—the common stories that are told over and over again—as well as the contradictions, norms, successes/failures, and workarounds that are indicators of unmet needs. Framing often results in a narrative that describes how users solve the problem in question today, how they incorporate the present solution in their lives, and what symbolic meanings that solution holds for them.

Broadly, a narrative is "understood as a spoken or written text giving an account of an event/action or series of events/actions, chronologically connected".¹⁹ Narratives include "personal and social histories, myths, fairy tales, novels and the everyday stories we use to explain our own and others' actions".²⁰ Narratives organize our experiences and make them memorable, are the means by which meaning is communicated, maintained and changed, and put knowledge into frameworks that are lifelike and true to our day-to-day expectations. They are factually indifferent: the fact that someone may be saying something fictional is less important than the nature of the fiction they choose to communicate. For those engaged in design thinking, narratives are made up of stories that are heard over and over again, and include experiences of characters, change, predicaments, and responses. They define what is normal and acceptable. In particular, narratives of failure or contradiction describe dramatic events, and point to unresolved or unmet needs.

The ultimate purpose of this step is to provide the inputs to a design team to come up with a new story to tell about how the user might solve his or her problem or to come up with a new way of seeing the problem, which in turn will allow the team to come up with new solutions.²¹ Although there are many tools that can be used to accomplish framing and reframing, including the simple effort of asking why, stories and narratives inevitably play an important role.

Two primary narratives emerged from the Kimberly Clark work. The first was the story of diapers as clothing, and not "waste control bandages" as they had been conceived at Kimberly Clark. Customers (parents) and users (children) alike viewed diapers as clothing, and clothing in turn as a symbol of future success. The second was the story about the frustrations of toilet training. Many parents divulged their fears that they were "doing it all wrong," which framed for Kimberly Clark an enormous opportunity to help parents negotiate the uncertainties of toilet training. It was these two narratives that informed the design work that would ultimately lead to Huggies Pull-Ups.

Imperatives

From the exercise of framing and reframing the customer and user needs data, the design process moves to synthesize a set of imperatives that expresses in some fashion the most important goals to be accomplished by the solution. This is a convergent act, still in the abstract realm, but involving synthesis, that takes place in the upper right-hand quadrant of Figure 1.

In marketing parlance, imperatives are value propositions that describe the tangible benefits that customers will derive from using the solution.²² They do *not* describe the specific features or

¹⁹Czarniawska-Joerges, B. (2004). *Narratives in Social Science Research*. Thousand Oaks, CA: SAGE.

²⁰Polkinghorne, D. (1988). *Narrative Knowing and the Human Sciences*. Albany, NY: SUNY Press.

²¹Hey, J., Joyce, C., & Beckman, S. (2007). Framing Innovation: Negotiating Shared Frames during Early Design Phases. *Journal of Design Research*, 6 (1), 79–99.

²²Treacy, M., & Wiersema, F. (1995). *The Discipline of market Leaders: Choose Your Customers, Narrow Your Focus*. Reading, MA: Addison-Wesley.

capabilities the solution must have to deliver those benefits. Instead, imperatives boil down the insights from the framing activity to the essence of what the solution *must* achieve.

One of the best ways to create and communicate imperatives is through stories. While observation and framing focus on understanding the story as it is experienced by the user in the present, stories told in the imperatives and solutions portion of the design thinking cycle tell a new story of how a user's life might be improved in the future. In simple terms, by recasting the user's story, "You might actually make your customers feel like heroes".²³

The stories created in the imperatives stage of the design cycle play an important role in guiding the organization as it creates new solutions to make the customers "feel like heroes". Storytelling in organizations serves, among other purposes, to develop trust and commitment, share tacit knowledge in an efficient exchange that "detonates understanding in the mind of the listener," reshape perspectives in order to rethink the how and why of opportunities, and generate emotional connections.²⁴ Stories provide "simulation (knowledge about how to act) and inspiration (motivation to act). . . . the right stories make people act".²⁵ A story created in the imperatives phase of the innovation process, thus, can play an important role in rallying the organization around new ways of thinking about serving customer needs. It can, in short, inspire the organization to improve the customer experience in some perhaps significant way.

Imperatives—whether stated as a small set of selected user needs, a list of design principles, in the form of a value proposition, or as the new story to be created for users—provide a very high level, not a detailed, specification for the design of a solution. They provide a guiding vision to the innovation team for the remaining activities in the innovation process. In the Kimberly Clark case, the guiding story became one of how a diaper could become a symbol of success rather than of failure, particularly as it pertained to the negotiation of toilet training.

At the levels of use and usability, this new story was to be told in the form of wetness control in a disposable "clothing like" embodiment that was clearly differentiated from diapers. At the meaning level,²⁶ the solution was to show itself as children's clothing, and as a symbol of success and physical control, not failure. Ultimately, this new story was spun by the advertising agency as "I'm a big kid now!", which transformed the sense of failure into a positive story.

Solutions

The innovation process returns to the concrete realm in the lower right-hand quadrant of Figure 1. Here the job is to generate solutions, choose the ones that best meet the imperatives, and test them with potential customers or users. This part of the innovation cycle is, perhaps, the best documented and exercised in practice. Based on the imperatives, which firmly connect back to the observational research, the innovation team can use a wide range of concept generation techniques to come up with alternative solutions, a well-documented set of techniques to choose the solutions they wish to take forward, and then a variety of mechanisms for soliciting feedback from potential users.

In short, the solutions activity can best be described as one of—usually hands-on—experimentation and learning.²⁷

At the core of solutions development and experimentation are prototypes. Prototypes may be in the form of doodles, drawings, sketches, physical implementations of a concept, skits, storyboards, or webpage wireframes, among many others. Used throughout the design process, the fundamental purpose of prototyping is to engage in play,²⁸ explore boundaries, and test the hypotheses that drive towards fuller understanding of customer and user needs, and ultimately of the best new story that can be told.

Using prototypes and storyboards, Kimberly Clark eventually arrived at a clear idea for Pull-Ups as a cross between a diaper and underwear. The new product story would emphasize that switching from

²³Kelley, T., & Littman, J. (2001). *The Art of Innovation: Lessons in Creativity from IDEO, America's Leading Design Firm*. New York: Doubleday, page 51.

²⁴Sole, D., & Wilson, D. G. (2002). *Storytelling in Organizations: The power and traps of using stories to share knowledge in organizations*. Harvard University, Graduate School of Education. Cambridge, MA: Learning Innovations Laboratory.

²⁵Heath, C., & Heath, D. (2007). *Made to Stick: Why Some Ideas Survive and Others Die*. New York: Random House, page 206.

²⁶Diller, S., Shedroff, N., & Rhea, D. (2006). *Making Meaning: How Successful Businesses Delivery Meaningful Customer Experiences*. Berkeley, CA: New Riders.

²⁷Thomke, S. (2003). *Experimentation Matters: Unlocking the Potential of New Technologies for Innovation*. Boston, MA: Harvard Business School Press.

²⁸Kelley, T., & Littman, J. (2001). *The Art of Innovation: Lessons in Creativity from IDEO, America's Leading Design Firm*. New York: Doubleday.

diapers to Pull-Ups marked a significant milestone for both children and parents. A child could put on a Pull-Up without help, and feel proud of the accomplishment. Despite considerable pushback within Kimberly Clark, particularly around the fear that Pull-Ups would cannibalize large-size diaper sales, the new category of “disposable underwear” for toilet training was ultimately born.

While it took the availability of a similar product coming from Japan that Kimberly Clark was able to evaluate in focus group settings to push the product through the company, today Huggies provides over a billion dollars per year of incremental revenue to Kimberly Clark, and gave the company a nice lead on its competition.

STORYTELLING IN DESIGN

Throughout our description of the design process, we’ve emphasized the role of stories and storytelling. We’ve suggested that the first half of the design process entails figuring out the story as it exists for users in the present, which in turn informs those participating in the design process. The second half of the process involves telling a new story, a story that inspires the design team on behalf of the customer. This shift (Figure 2) is at the heart of the design process—first framing the situation as it is, and then reframing it to make things better.

Next we take a quick look at these two types of stories – those that inform and those than inspire.

Stories that Inform

Informative stories surface contradictions, spoken and unspoken norms, and the successes and failures that are core to really understanding needs. Contradictions appear in a number of design and innovation methodologies, such as TRIZ.²⁹ Contradictions in users’ stories can yield interesting insights into how people think. Parents, for example, who say that they always make their children eat a healthy breakfast, but are observed doing otherwise, provide insights into what parents *want* to believe about how they are raising their children, whether or not that desire matches the reality of their actions.³⁰ This insight about what parents want to feel there are providing for their children might help a breakfast food company imagine a different set of solutions, such as “healthy” cereal bars that can be eaten on the run, or re-positioning of its existing solutions.

Informative stories also yield insights about spoken and unspoken norms and how they are or are not being followed. Clothing that sounds and feels like a shower cap doesn’t match with norms around how cuddly babies should feel, or about how to communicate their future prospects for success.

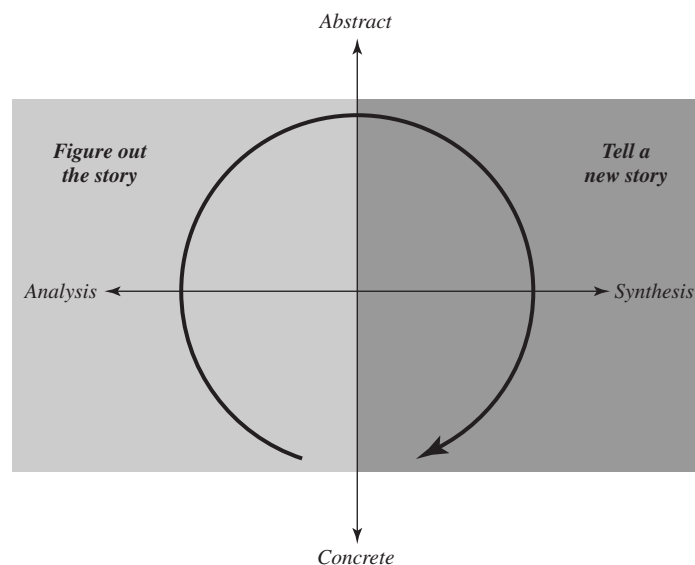


Figure 2. Design as Storytelling

²⁹Terninko, J., Zusman, A., & Zlotin, B. (1998). *Systematic Innovation: An Introduction to TRIZ; (theory of Inventive Problem Solving)*. Lincoln: St. Lucie Press.

³⁰Fellman, M. (1999). Breaking Tradition. *Marketing Research*, 11 (3), 20–25.

In some cases, a new solution design may have to follow existing norms. In other cases, it may lead an effort to change these norms. Consider the evolution of norms around greeting cards. The first people to send electronic holiday greeting cards were looked upon with some disdain for having taken a shortcut, or being miserly and not taking the time to write a note, lick a stamp and mail a letter; today, however, electronic greeting cards are routine and businesses have grown up around making them acceptable.

Failure is often the impetus for improved designs. Whether learning from engineering failure,³¹ or simply learning through a series of prototyping cycles in the design process,³² failure can be a significant source of inspiration. Thus, informative stories may also include users' stories of failure. The most significant of these stories are around failures at the meaning level, about solutions that are just fine on the use and usability front, but fail in connecting at the meaning level. Failure stories – about parents' fear of failure in helping their children negotiate the transition from diapers to underwear, and about their sense of failure when their children were last in the neighborhood to be out of diapers – were central insights that led to Pull-Ups' success.

Thus, stories that inform – about contradictions, workarounds, normative, and success or failure—are the input to the design process (Figure 3). Stories that inspire are its output.

Stories That Inspire

Stories that inspire are those that motivate a design team to imagine new and interesting solutions and, if told outside the company, inspire customers and users to participate in the new story. Although there is a wide range of stories that can be formulated and told, the most inspiring stories appear to follow three primary dramatic plot structures: the challenge plot, the connection plot, and the creativity plot.³³

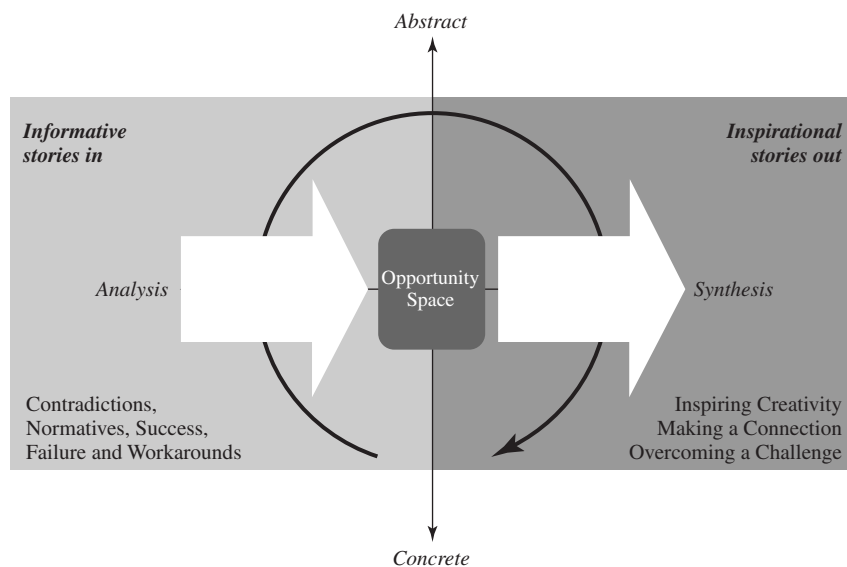


Figure 3. Informative and Inspirational Stories

Stories depicting a protagonist overcoming a formidable challenge, variations of which include underdog stories, rags-to-riches stories, and the triumph of willpower over adversity stories, are rife in our culture. These “David and Goliath” stories inspire creative teams to help users or customers to overcome adversity.

At Kimberly Clark, the story that inspired the design team that ultimately came up with Pull-Ups was focused on helping parents overcome the difficulties of toilet training. Although the ad agency ultimately spun the story with a more positive angle – “I’m a big kid now!” – the original story was very much one of a parent overcoming a formidable challenge.

Stories of creating a connection, characterized by the “Good Samaritan” story, include classic romance stories, as well as stories of reaching out to bridge a racial, class, ethnic, or other type of

³¹Petroski, H. (1985). *To Engineer is Human—The Role of Failure in Successful Design*. New York: St. Martin's Press.

³²Kelley, T., & Littman, J. (2001). *The Art of Innovation: Lessons in Creativity from IDEO, America's Leading Design Firm*. New York: Doubleday.

³³Heath, C., & Heath, D. (2007). *Made to Stick: Why Some Ideas Survive and Others Die*. New York: Random House.

divide. Social networking tools, the many nonprofits that support third world development, and even cafes where people hang out are examples of designs that have responded in some way to a story of desired connection.

Stories of creativity involve “someone making a mental breakthrough, solving a long-standing puzzle, or attacking a problem in an innovative way” (Heath and Heath 2007, 229). The Apple that Steve Jobs created not only operates in a highly creative way itself, but strives to inspire creativity in others who use its products. While there are a number of stories that Apple tells through its products and its brand, creativity is certainly a central one.

Arguably, in the diaper industry at large, the story shifted from one focused on creativity and innovation to one focused on connection. In 1982, the Japanese company Unicharm first introduced the magic of superabsorbent diapers to the world. By 1988, however, the magic had worn off, and customers were no longer interested in stories of wetness control, which by then they considered insignificant. Pull-Ups told a different story, one based on creating a new connection with the child, and supporting their toileting development. And everybody wanted in on this story!

The desire to help with the toilet training process inspired the internal design team at Kimberly Clark to come up with the Pull-Ups solution. The external “I’m a big kid now!” campaign inspired consumers to buy into the story, and created the market for Pull-Ups.

This new story also led to fundamental change inside the company. As noted, Kimberly Clark was highly focused on its technologies and patents, and on an analytical view of its customers and users. It cringed at the notion that it might be a player in the fashion industry, which is what the idea that diapers might be clothing suggested. It argued that its market could be fully characterized by numbers, and that “emotional needs” were largely irrelevant in its commodity-market setting.

The new story that developed around the creation of Pull-Ups led to a significant change in thinking inside the organization, and ultimately to new ways of developing and presenting products. Kimberly Clark began to realize that it could play an important role in child development, and with this view began to understand that technologies were not the only critical inputs to the product development process. With the successful introduction of Pull-Ups to the marketplace it learned a number of lessons about what really mattered to its customers, and about how it might shift its thinking internally to better focus on what really mattered.

The associated cultural shift in the company did not come easily. Bill Hanson, who initiated the original research that led to Pull-Ups, struck out on his own by setting up a lab in a building apart from the rest of the research group. He hired new people who were less focused on technology and patents, and more willing to consider user needs in parallel with technology development. The story that “we can help parents negotiate toilet-training” morphed to the “I’m a big kid now” story and then morphed again to a story about “customers as people, not numbers” and “technology is not the only game in town.” These “sticky” stories permeated the organization, facilitating unlearning,³⁴ and allowing the organization to change.

CONCLUSION

Stories are important to the design process. The stories collected during observation and analyzed during framing can inform a design team about customers and users, and the contradictions, norms, and failures in their lives. The stories developed to express imperatives and drive the development of solutions can inspire designers to help users overcome their underdog status, create connections with others, and to be creative, among other goals. These stories may describe use and usability needs or characteristics, but most importantly express meaning-based needs or create emotional connection with potential customers. Both types of stories – those that inform and those that inspire – may not only allow an organization to develop new and interesting solutions for customers, but they may also stimulate a company to change as they did at Kimberly Clark.

At Kimberly Clark, the informative stories around diapers as clothing and the process of negotiating toilet training led them to develop an entirely new category for toilet training toddlers. As summarized in Figure 4, the company started with a view of its customers as numbers and fluidics experiments, and then went to learning of their views of diapers as clothing, and understanding the trials and tribulations of toilet training. Using this new information about customers, it ultimately developed the inspiring story of “I’m a big kid now” and embodied that story in Huggies Pull-Ups.

³⁴Sole, D., & Wilson, D. G. (2002). *Storytelling in Organizations: The power and traps of using stories to share knowledge in organizations*. Harvard University, Graduate School of Education, Cambridge, MA: Learning Innovations Laboratory.

The more important story for us, however, is the story of the transformation of Kimberly Clark's own culture. Figure 5 depicts the innovation process in which the company implicitly engaged to redesign its own culture. Informed by the notion that customers are more than fluidics experiments, the company began to be able to tell a more inspiring story about its role in supporting child development, one that allowed the organization to change and better balance customer focus with technology focus in its product design and development processes.

Stories have an important role to play in design. Customer and user stories inform the design process, while stories about new possibilities inspire the process. Stories also play a larger role in the life of an organization, sometimes spawning organizational change as they did at Kimberly Clark. Thus, being thoughtful about the creation, and perhaps more importantly the communication of stories in an organization can have significant benefits.

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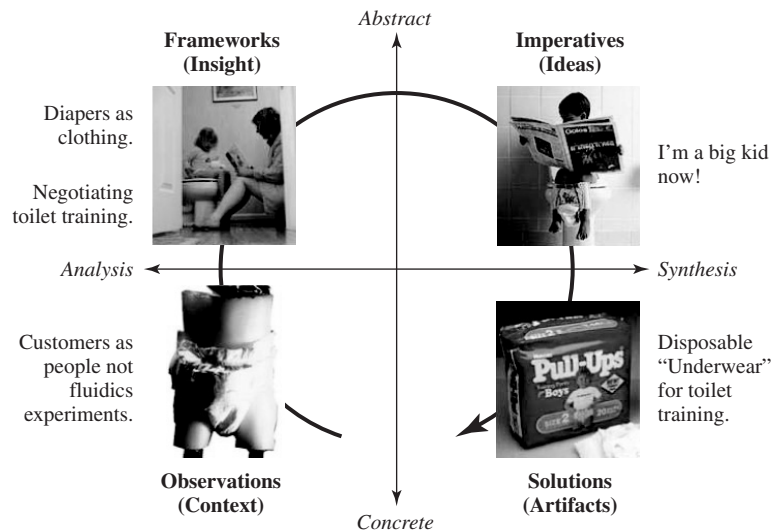


Figure 4. The Kimberly Clark Huggies Pull-Ups Story

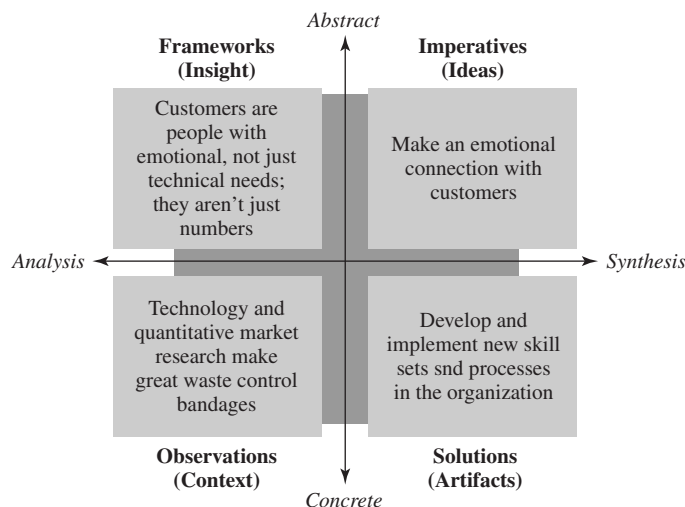


Figure 5. The Kimberly Clark Organizational Change Story