



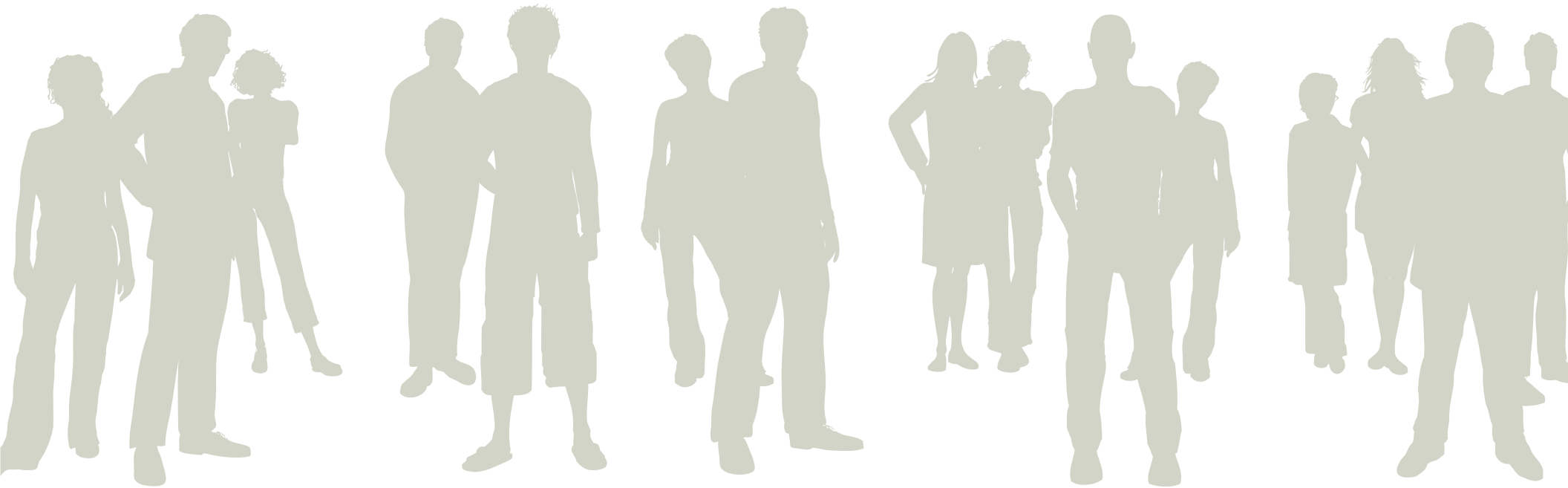
product development  
technologies, inc.

# PULSE

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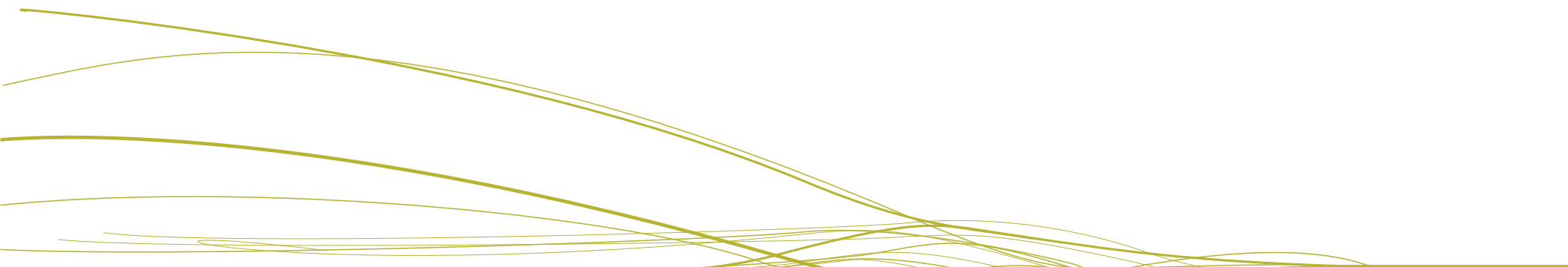
Issue 5

November/December 2008



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Polar Opposites: Get to Know our Design Team  
Designing for Durability



## IDSa 2008: Polar Opposites

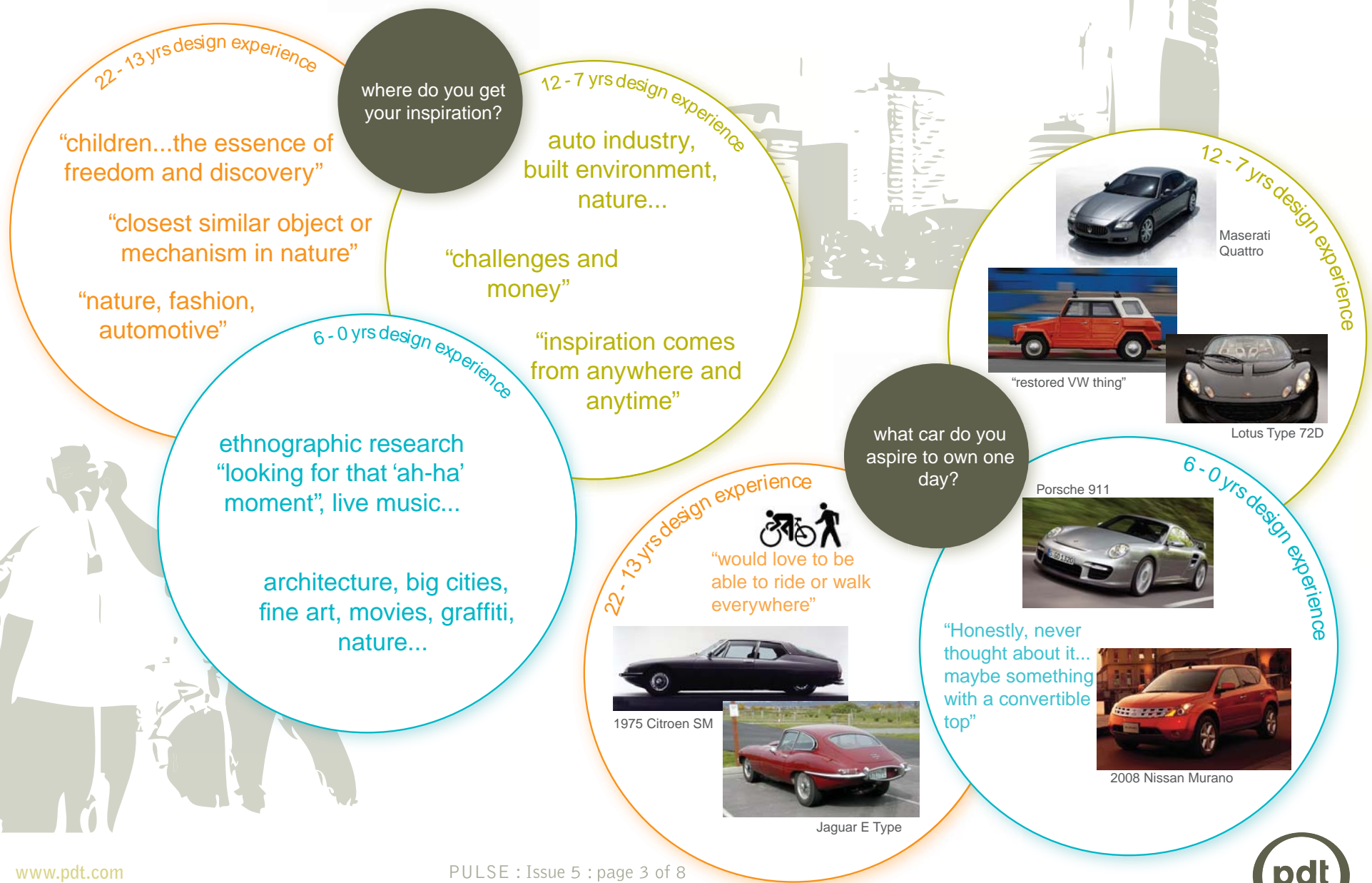
The design team at PDT has long been involved with the Industrial Designers Society of America (IDSA), an organization whose goal is to advance the quality and positive impact of design. Each year, IDSA holds a National Conference where designers from all over can connect, learn and be re-inspired. Earlier this year we had the opportunity to attend the 2008 National IDSA Conference in Phoenix, Arizona. The conference theme was “exploring polar opposite issues in design practice.” In keeping with this idea, one of the break-out sessions we attended was titled Bond versus Bourne: Designer’s Life Roundtables Featuring Young Design Hotshots and Their Seasoned Counterparts. The focus of this session was to bring young and seasoned design profession-

als together to learn from each other. We found it very interesting to sit together with new and veteran designers alike and discuss differences (and similarities) of all sorts- from thought processes, to skill sets, problem solving tactics and influences. As this session progressed, we realized we at PDT have this same diversity in our design team and decided to undertake an exercise to showcase the differences and similarities amongst our team. We split the design team into three major groups: those with 22 – 13 years of experience, those with 12 – 7 years of experience and those with 6 – 0 years of experience. We took a sampling from what we learned and graphed it over the next couple of pages.

-Sona Patadia and Goldie Gireesh



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what was considered a design leader when you started working in design?

22-13 yrs design experience



mitsubishi cell phone

espresso maker by Richard Sapper

NEXT computer by FROG



new VW Beetle

12-7 yrs design experience



BMW X-Coupe



Nokia cell phone

6-0 yrs design experience



MINI Cooper motion watch



Aston Martin DB9



MACbook AIR

12-7 yrs design experience



Audi



Apple iPhone



Method



what would you consider a design leader today?

22-13 yrs design experience



Apple iPhone



Tizio lamp



6-0 yrs design experience



Apple iPhone



One Laptop per Child





# Designing for Durability

How many times have we listened to a friend or a co-worker extol the virtues of shopping at a big box store for the holiday season? The main refrain always seems to be that “this place has the lowest price anywhere” and “I wouldn’t want to shop anywhere else in this economy”. As an industrial designer who’s been connected to the consumer goods industry for 10 years I question whether today’s discount economy provides real value in the long term and I am drawn to stand up for those who don’t mind paying a bit more for well-designed, durable products.

## The Shift from ‘Consumer Durables’ to ‘Consumables’

As recently as a decade ago, I’d take the longevity of a piece of furniture or an appliance for granted. If I bought a couch, I could rest assured that it would last for a good 10 years if I took care of it. I am sure we all have a story to tell about grandma’s trusty old refrigerator that holds extra beer in the basement, or the old Chevy that doesn’t have any trade in value but still hauls loads like a new truck.

But I rarely hear such stories about products of more recent origin. Today, a disproportionately large number of manufactured products get trashed every year compared to just 10 years ago, and this is perhaps most evident from electronic waste production data. According to the Washington Post, 50 million computers and 130 million cell phones get thrown away every year in the United States alone and this number is expected to rise to 400 million

electronic devices in 2010.

Computers and cell phones may be discarded so quickly because they are perceived as technologically obsolete. However, they account for only 10% of the 222 million tons of waste we produce every year in the United States. This means we must be discarding products and goods that have remained technologically the same for several decades such as lawn mowers, toasters and crock pots. What was the last product you disposed of? Could it be that we are trashing products at a rapid rate because they are not built to last? Have consumer durables become consumables?

I, like many of us, have a garage cluttered with products that stopped working way before their time—vacuum cleaners, telephones, an old TV and a couple of inkjet printers which were cheaper to replace than to buy refill cartridges for. I just don’t have the time or inclination to return them to the store so they are left in limbo waiting for repair, recycle or disposal. It’s not something I’m particularly proud of but I feel somewhat a victim of circumstance burdened with a responsibility



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seemingly caused by quality issues that should have been prevented by the manufacturer.

A walk down the aisles of any big box store will turn up products that barely last a season. Giles Slade points this out in his illuminating book from 2006, “Made to Break: Technology and Obsolescence in America,” in which he summarizes the rise of the concept of ‘planned obsolescence’; the story is the same whether it is furniture, toys, electronics, small appliances or consumer durables.

I know manufacturers are driven to keep the sticker price low so retailers can pass on the ‘savings’ to consumers and one way to do this is by considering a limited lifespan for their products and designing or manufacturing accordingly. This certainly makes competitive pricing achievable however in the long term it makes the cost per use higher as you will likely be replacing it with a newer model sooner rather than later. We all like shiny new objects but perhaps if you take the time to consider all the implications you may end up saving yourself time, money and frustration.

## The Case for ‘Made to Last’

Unfortunately, most consumer focused industries operate under similar strategies of cost reduction, therefore as a rule there is little incentive or inclination to step out of the paradigm. Recently, however, a long term client of PDT did just this resulting in a 48% increase in global sales. By focusing on design and build quality, PDT and Shoal Creative worked with Fellowes to develop innovative binding and laminating machines

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designed to last for years. User research drove features and expectations while a strong aesthetic appeal and consistent packaging completed the holistic approach to designing durable solutions. With new distribution gained on several continents, the Fellowes Binding and Lamination business is now enjoying consistent profitable trading. Staff morale has been boosted and with sales teams re-energized, a sense of pride and purpose has returned to the workforce. This may sound like an anomaly, but to me it simply verifies that there is still hope for us yet when it comes to kicking the paradigm of cost reductions and commoditization.

As a consumer, I can see many customer-side influences that have emerged to hopefully compel manufacturers to provide more durable, long-lasting products. As a designer, I am privy to the driving factors that may also support this desire.

### *“Word of Mouth” goes digital*

In the last five years, I can honestly say that I haven't bought a product worth over \$20 without first reading a mass of online reviews. I have spent more time reading reviews than actually shopping. Online retailers such as Amazon and NewEgg together with brick and mortar stores like Walmart or Target now give their consumers the ability to add a review of products, putting the consumer in a highly informed position. Whether they are simple one sentence comments in text or detailed HD video segments showing complete teardowns,

such reviews can now make or break the success of a product. It is not surprising that products that are more durable tend to get better reviews.

In the past, manufacturers and retailers could often ignore product failures until they became a crisis - and even then only recall the product with minimal long term damage. Not anymore. Just look at how quickly the top five laptop manufacturers recently recalled hazardous batteries. Online reviews are ensuring that there is no chance for covering up poor build quality as long as one person takes the time to upload a photo of a laptop on fire.

### *“Pre-owned” is the new “Brand New”*

I also draw your attention to the market for pre-owned goods – a more sanitized reference for ‘used’. We have all bought and sold used cars but e-commerce portals such as eBay and Amazon have made trading used consumer products clean, easy and gainful- if not lucrative. It is not uncommon for people to seek out and purchase a durable product knowing that it can be re-sold for almost the original price later in its life. Thanks to an internet economy that pairs consumers with products more efficiently, more products now have access to a second or even a third lease on life. Admittedly this may draw revenue from the sale of the new, but products that are inherently designed to be more durable will definitely have a better chance of success in the pre-owned market. Plus, your consumer is left with a good feeling of passing it on for profit rather than throwing it in the trashcan six months after purchase.

### *Brand Loyalty*

Olivia and Vizio were virtually unheard of just five years ago. Today they are leading contenders in the small to mid-size flat screen TV market. With a lot of Asian OEM manufacturers building their own brands and vying for shelf space, formerly unknown names like HTC, E-ten and Everex have managed to build a strong recognition through reliable product offerings comparable to well-established (and more expensive) brands. Durability and longevity are essential for even the most established names to differentiate and compete against such newcomers offering similar value and quality.

### *Shopping turns Greener*

There is no way I could debate the virtues of designing for durability over cost without touching upon today's favorite color – Green. Given a choice, people now attempt to buy ‘green’ or environmentally friendly products when they can. ‘Green’ products are still associated with a higher overall production cost, therefore manufacturers of ‘green’ products quite rightly emphasize the longevity of the product resulting in fewer units being tossed in the landfill. This can often be the deciding factor for green buying choices,



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demonstrating that consumers are growing a consciousness beyond their immediate needs.

### *Outsourced Customer Fulfillment*

Distribution supply chains and aftermarket service for most products are outsourced by leading manufacturers. Large laptop and hard disk manufacturers can afford to offer multi-year replacement warranties because product manufacturing, distribution, warranty and aftermarket services are handled entirely by OEM firms that bear the burden of after sales support and replenishment as part of their all-in-one contracts. Similarly, new products are stocked and distributed by huge warehousing companies across the country, keeping distribution costs low through economies of scale.

However, if a product is returned by a large percentage of consumers, the cost of returning the product, restocking, etc. gets significantly higher. Durable products are necessary to keep the cost of the OEM distribution and maintenance model low and viable.



### **How to Build to Last**

*Design can't be a line item in the manufacturing contract*

Consider design as an investment, not an overhead - the outsourcing of manufacturing and order fulfillment to Asia has also led to the same sources providing front-end product design services for free. If you are a major electronic retailer or manufacturer, you can have the OEM design the product for no cost as well as mass-produce and ship direct to your customer. This makes perfect sense to Product Managers from a dollars and cents perspective, since the cost of designing and tooling a product can be amortized over millions of units.

But the product design phase quickly becomes additional overhead for the already margin-pressed manufacturer. The longer the design phase lasts, the more upfront investment is needed from the manufacturer. As you might imagine, the economics of the situation do not lend themselves to designing particularly reliable products with all the kinks ironed out before launch. PDT sees too many products designed by production houses that come back for refinement due to problems that could have been addressed through an objectively structured design and review process.

### *Change the culture of fault tolerance*

A change is necessary where customers are not relied upon to find and report problems; bugs need to be worked out of the system in the design phase, not in the first year of production. There is no reason why we cannot reintroduce a zero-fault tolerant design mindset- the airline and medical industries are prime examples of zero-fault tolerance. If they can do it, so can we.

*'Project' timelines rather than reduce them*  
Today's development cycles are frequently less than half what they were only several years ago. This means that a new product is often designed before the old model becomes obsolete. For many electronic devices, project timelines have shrunk to a few months while the scale of manufacture has grown to millions of units - a product launch disaster waiting to happen if all defects are not caught early on. Iterative discovery and design time, prototyping, testing and quality control must be built into development schedules based on optimistic MTBF (mean time between failures) goals for designing a durable product.

Upon reflection, I am certainly fortunate to be in a position where I can raise awareness to our clients and demonstrate the value of designing to last, yet I am also vulnerable to becoming part of the cause as I am a consumer with a healthy appetite for 'the new.' How I balance both desires is a challenge in itself. However I do know I sleep better at night with the understanding that my work for PDT clients is more likely to end up on eBay or a friend's desk than in a landfill, and I, as I am sure you do, look forward to the day that I can reclaim my garage space from a wasteful collection of obsolete or broken down devices so I may once again reach grandma's trusty old refrigerator without dislodging a landslide of boxes.

-Goldie Gireesh

## About PDT

At PDT we believe the success of a project relies on our team members' insight into today's product development issues, advances, technologies and trends. We actively seek out the information needed to stay savvy to the issues and opportunities facing our clients, continually building a foundation of knowledge and inspiration that helps our team design products which spark desire, devotion and success in the global marketplace. We are happy to share just a few of our team members' insights, observations and opinions with you in this publication. For more information, please visit us at [www.pdt.com](http://www.pdt.com) or contact us.



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## This Issue's Contributors

**Goldie Gireesh** has a vast amount of experience in medical and consumer product development from his 10 years as a designer. Some of his special interests outside of work include intellectual property law, macro-economic theory, energy issues and DIY electronics and computer projects. He has been a part of the PDT team for three years since moving to Illinois from his native Bangalore, India.

**Sona Patadia** has discovered a passion for designing soft goods. She's had the opportunity to really begin to explore the freshness of working on soft products and discovered a keen interest in them. 'Design can be so many things, it would take a lifetime to discover them all...so take chances and push the limits of your knowledge base, you never know when it will lead to a new passion.'



Goldie Gireesh, Sona Patadia