

# My name is **Drew Meehan**

I am a human-centered **Design Researcher**, **Service** and **UX Designer** with over 20 years of multi-disciplinary work experience, ranging from automotive and UX design to technical illustration. I stubbornly believe that good design can make the world a better place for everyone.

In a world of commoditized technology, good design relies on rigorous ethnographic and user-centric research to not only develop the products we make, but also the services we offer and the way customers perceive our brand. It is these services that will differentiate brands as markets shift from traditional ownership to shared and subscription services.

Trained as a car designer, I have spent nearly 20 years working in User Experience, Design Strategy, Design Research, and Graphic Design. My technical skills, ranging from Photoshop to the newest prototyping tools like Sketch and InVision, are expert level.

But it's my cultural empathy that enables me to create personas, journeys, and scenarios that connect the dots between a simple interface and a complete brand experience.



Full name: **Andrew Joseph Meehan**  
Date of birth: **13 July 1974**  
Nationality: **American (USA)**



**Me (right) conducting design feedback interviews in French at the Paris launch of a Japanese OEM concept**

# UX skills

## Research

- › Ethnographic interviews
- › Question laddering
- › User testing
- › Customer and internal workshops
- › Quantitative and qualitative surveys

## User mapping

- › Persona creation
- › User flows
- › User scenarios
- › Journey maps
- › Touchpoint maps

## Competitive analysis

- › Trend Reporting
- › Market research
- › Benchmarking



# Technical skills

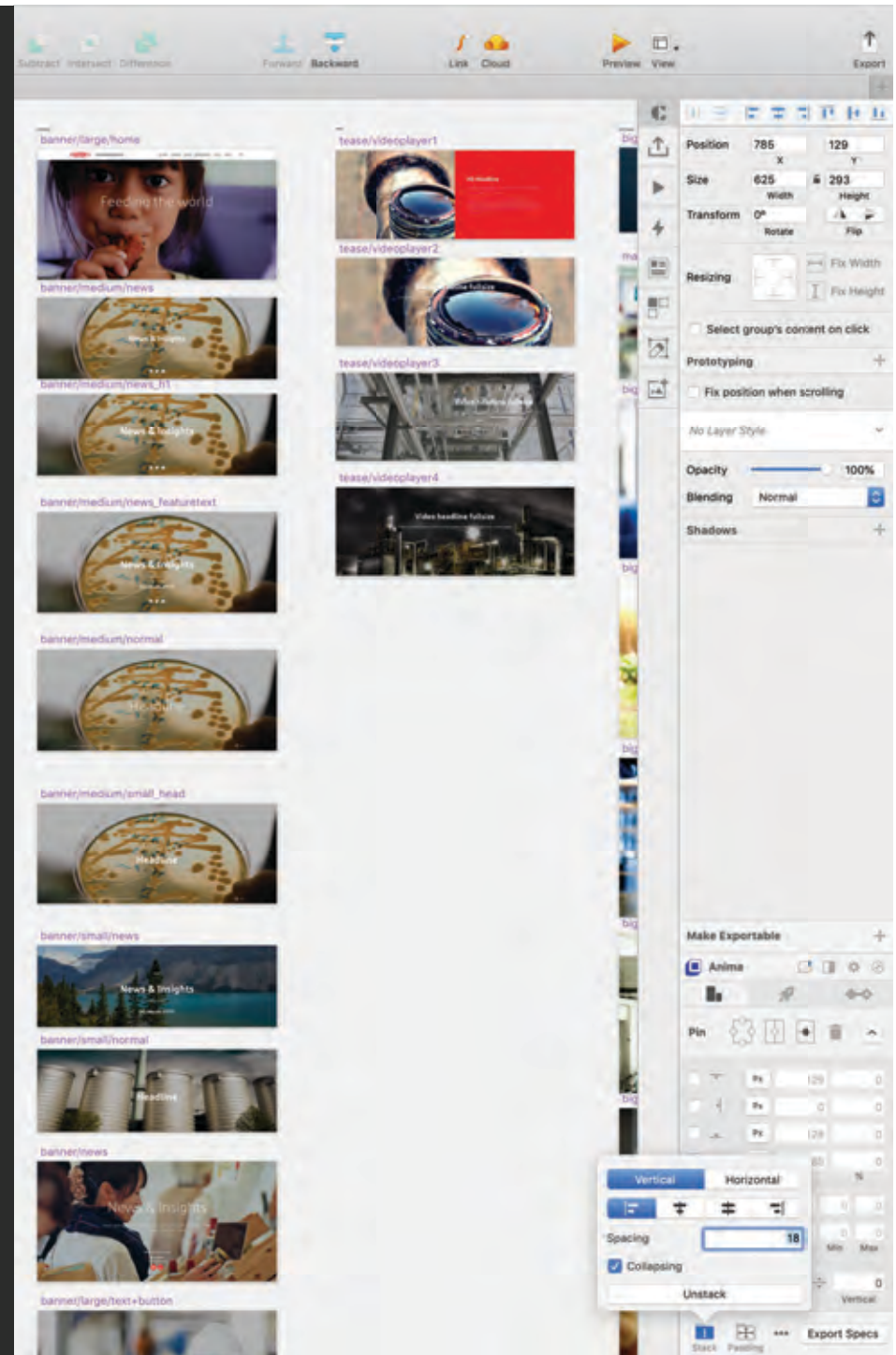
## Sketching and rendering

- Over 25 years' professional experience creating both analog and digital sketches, technical illustrations and renderings for automotive, scientific and user experience projects.

## Mockups and prototyping

- 18 years+ experience designing UX mockups and prototypes across several industries. Highly proficient in all major software applications including:
  - Adobe Photoshop, Illustrator, Lightroom, InDesign, After Effects, Premiere
  - Sketch, Principle, Anima, Marvel
  - InVision (Studio + web app)
  - Final Cut Pro X
  - MS Office Suite and Apple iWork

I have presented to Design Leaders and Executives from some of the world's top automakers. With over 20 years experience with PowerPoint and Keynote, I can create engaging presentations that make an impact in the design studio and the C-Suite.





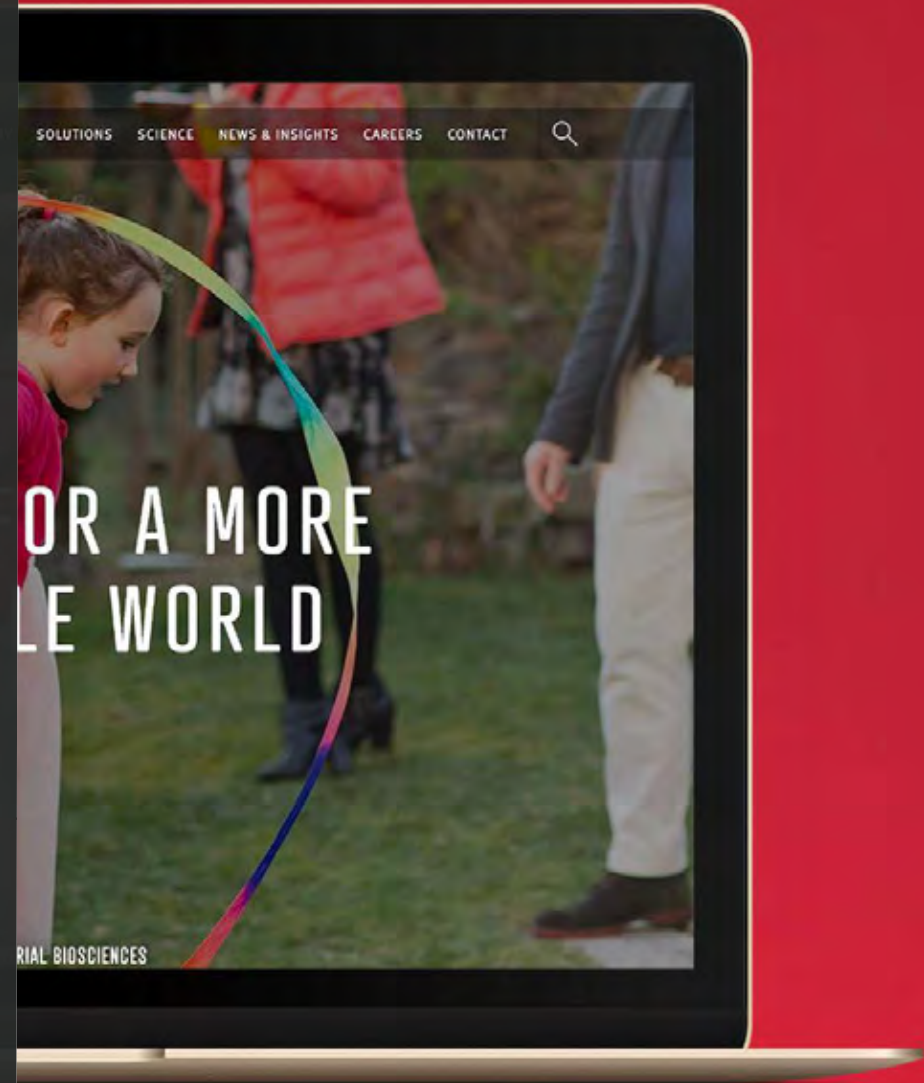
# Non-automotive UX work

Alongside my automotive design, I've continued to craft user experiences, infographics and technical illustrations for non-automotive clients, including corporate, startups and media.

# Responding to **change**

DuPont Industrial Biosciences needed to build a modern, responsive website to help them raise their profile and better manage an upcoming merger. As part of a cross-functional team, I delivered a site that would adapt both to screen sizes—and changing business needs.

- > User flow
- > Wireframing
- > Pixel-perfect mockups
- > Design + delivery

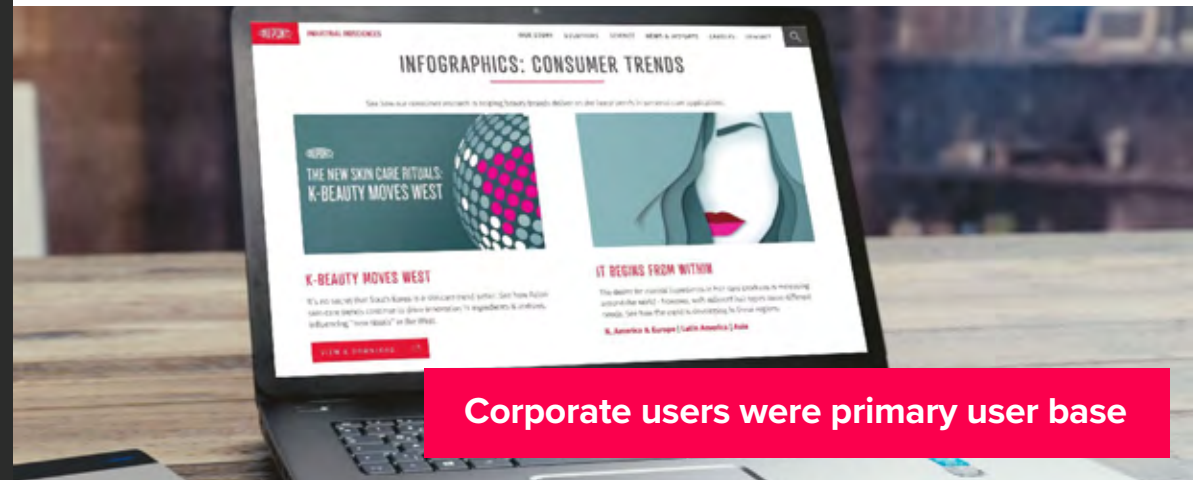




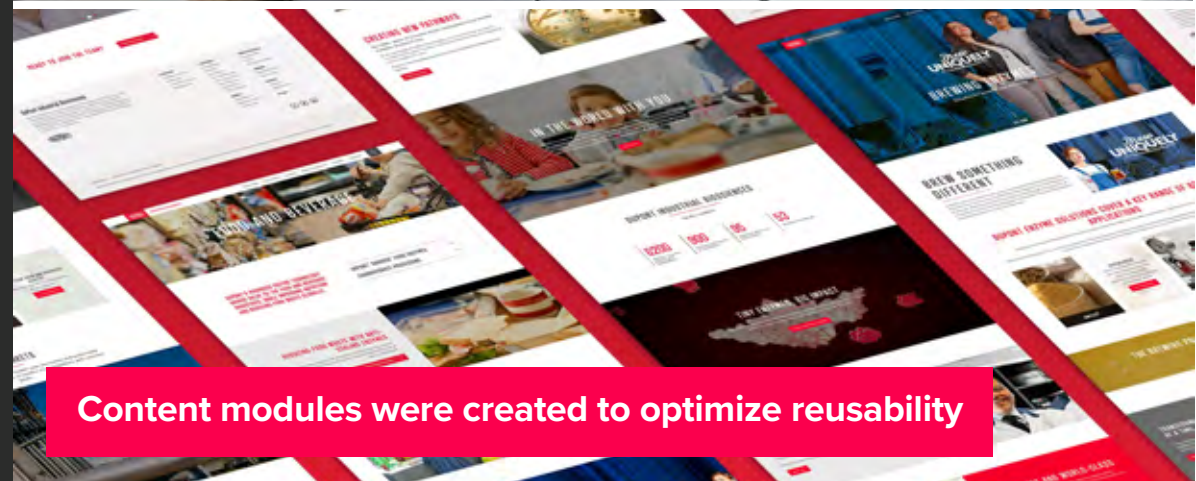
# Responding to change

- Worked with DuPont's digital marketing team to determine optimal user experience for site visitors while developing a bespoke CMS for site editors that balanced brand consistency with ease-of-use.
- Designed a flexible "design system" that could be easily re-skinned for product or business-unit subsites
- Wireframed overall layout to determine final "content modules" to be fully developed, and to ensure compatibility with existing and future business needs
- Designed pixel-perfect mockups for over 100 different on-screen elements and content blocks
- Created bespoke icon svg files and style guide for final development
- Provided detailed CSS and design guidelines to external development team for final build of both front- and back-end site

Sketch was used to manage the complex site



Corporate users were primary user base



Content modules were created to optimize reusability

# A brand with a plan

As Design Lead for automotive design and strategy consultancy Car Design Research, I created the first design system for the 15-year old company—as well as a new website, business cards and Powerpoint templates—to lead the way as we pushed into new directions and sought new clients beyond the original scope and reach of the company.

- › Wireframing
- › Pixel-perfect mockups
- › Powerpoint templates
- › Production of print and web collateral

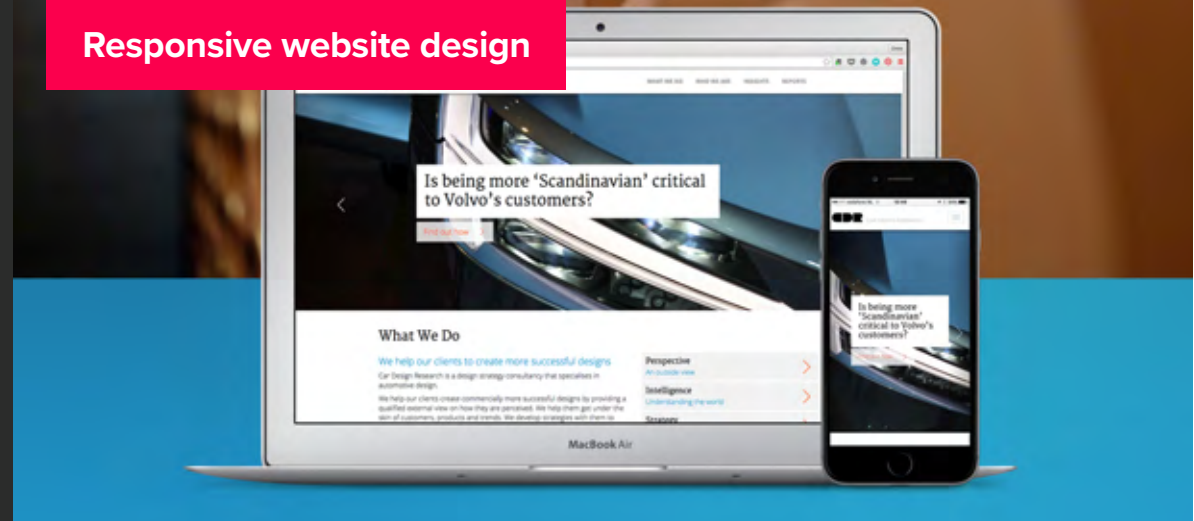




# A brand with a plan

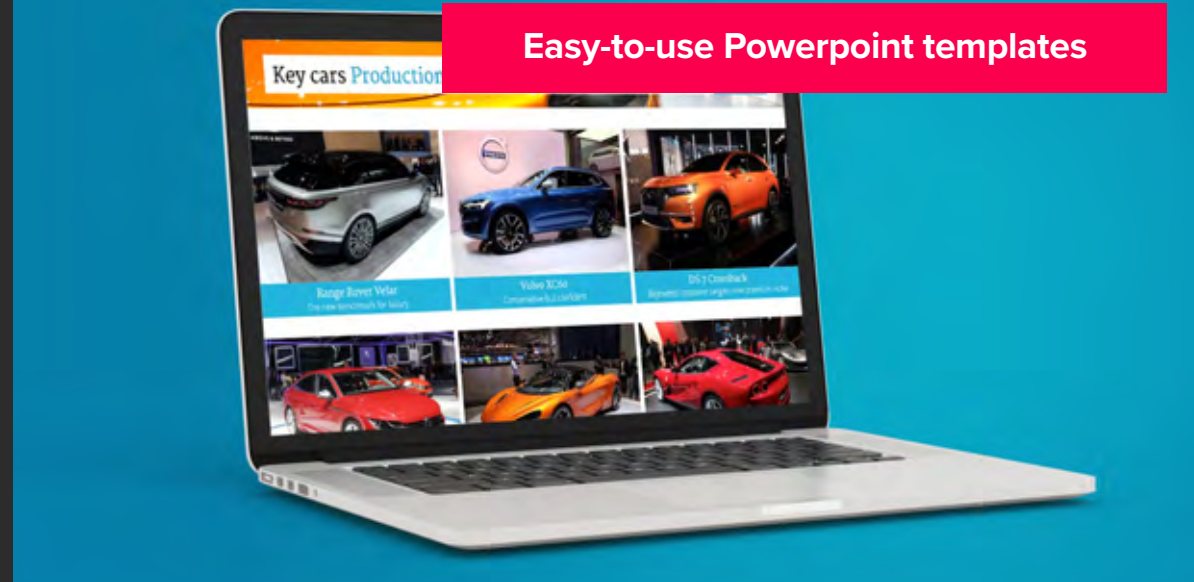
- Worked with the three partners to create a new brand identity that fit the agency's future plans, without disturbing loyal clients
- Wireframed website layout to ensure all elements of brand and story fit together into a cohesive whole
- Collaborated with web developers to create easy-to-use backend elements that would be reusable and responsive to future needs
- Provided detailed CSS and design guidelines to external development team for final build of both front- and back-end of website
- Designed pixel-perfect mockups and style guide that were used to create additional elements such as business cards
- Created easy-to-use powerpoint templates for all primary internal uses, including proposals, company overview and trend report to improve efficiency and consistency of presentations

## Responsive website design



## Print collateral

## Easy-to-use Powerpoint templates

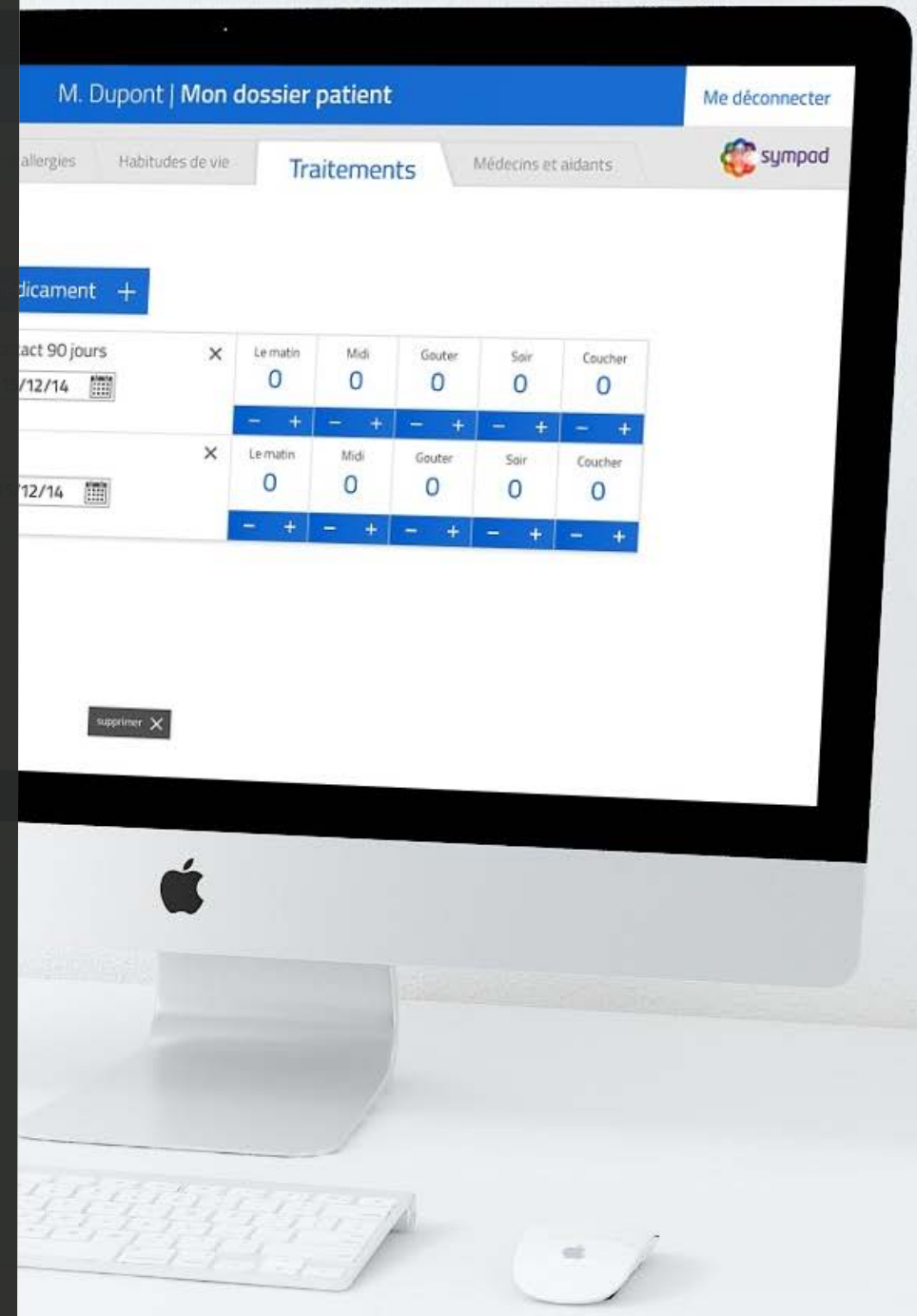




# Bringing **telemedicine** to the pharmacy

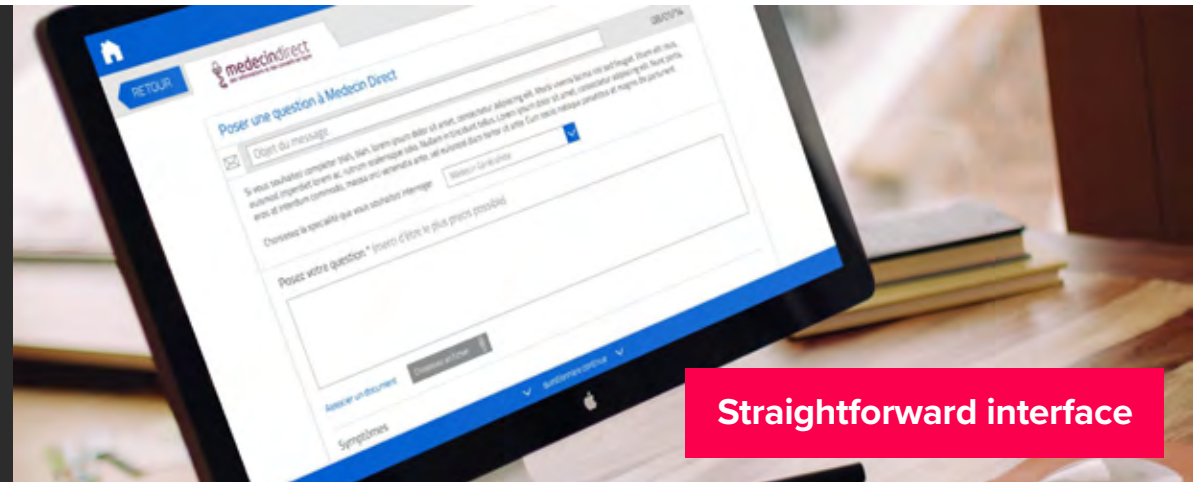
A French telemedicine startup asked me to design the interface for their new in-pharmacy medical follow-up system. With an older user base—as well as doctor and pharmacist modules—the design needed to be user friendly, highly legible, and extremely versatile, despite its complex requirements.

- User flow creation
- Wireframing
- User testing
- Pixel-perfect mockups



# Bringing telemedicine to the pharmacy

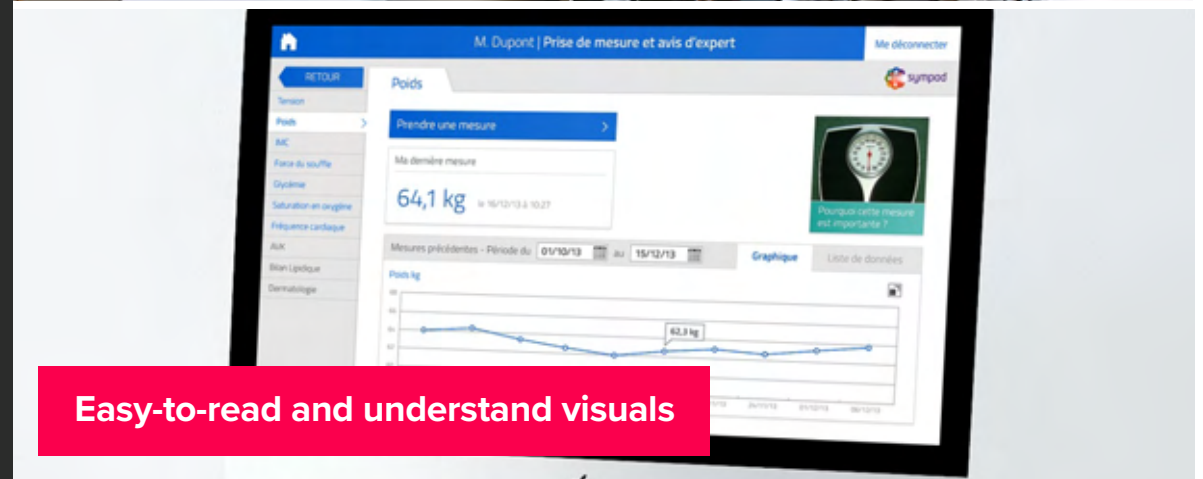
- Created a user flow based on system requirements and user personas
- Designed wireframes to flesh out the fundamental layout across different user and information scenarios
- Designed pixel-perfect mockups for over 50 specific screen and user types
- Did small-scale A/B testing with Doctors and Pharmacists to determine best approach to complicated information screens and communication interface
- Provided detailed CSS and design guidelines to the development team for final build



**Straightforward interface**



**Modules for different user groups**



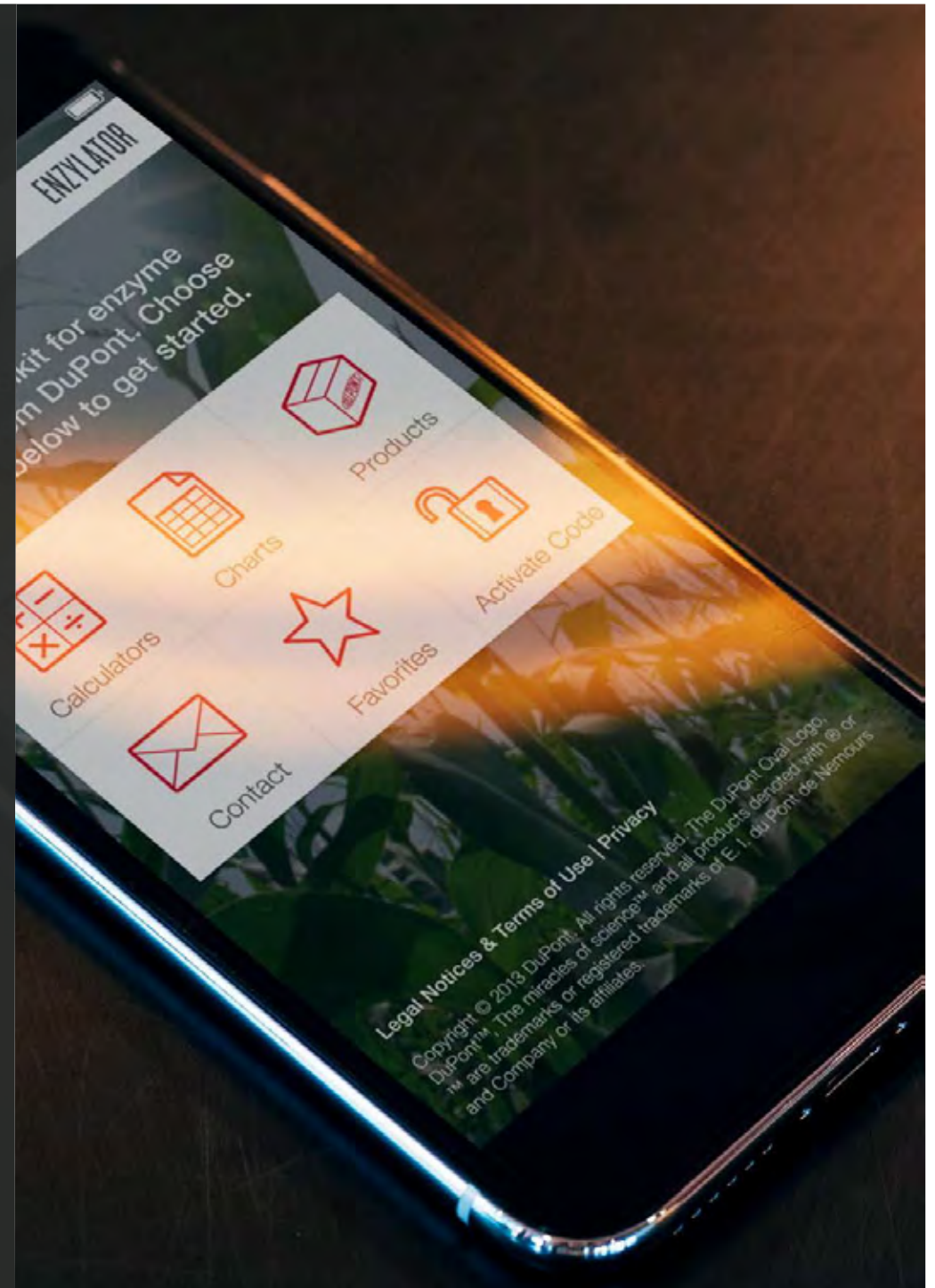
**Easy-to-read and understand visuals**



# Calculating customer value

DuPont Industrial Biosciences was looking to connect directly with the users of their enzyme products on processing plant floors, rather than just managers in offices. I designed this app to be easy for workers to use, and easy for product managers to explain during short interactions.

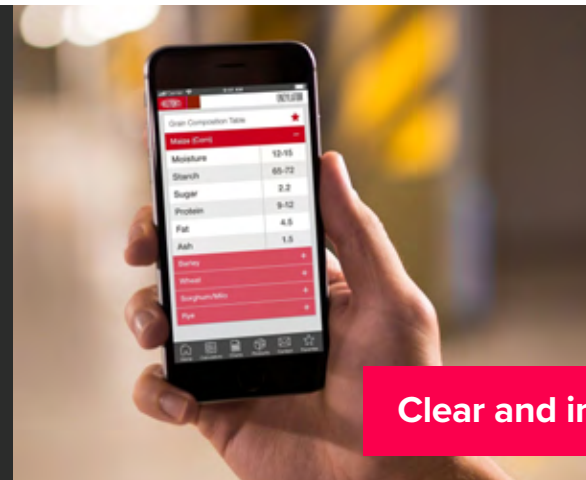
- User flow creation
- Wireframing
- Pixel-perfect mockups
- Design + delivery



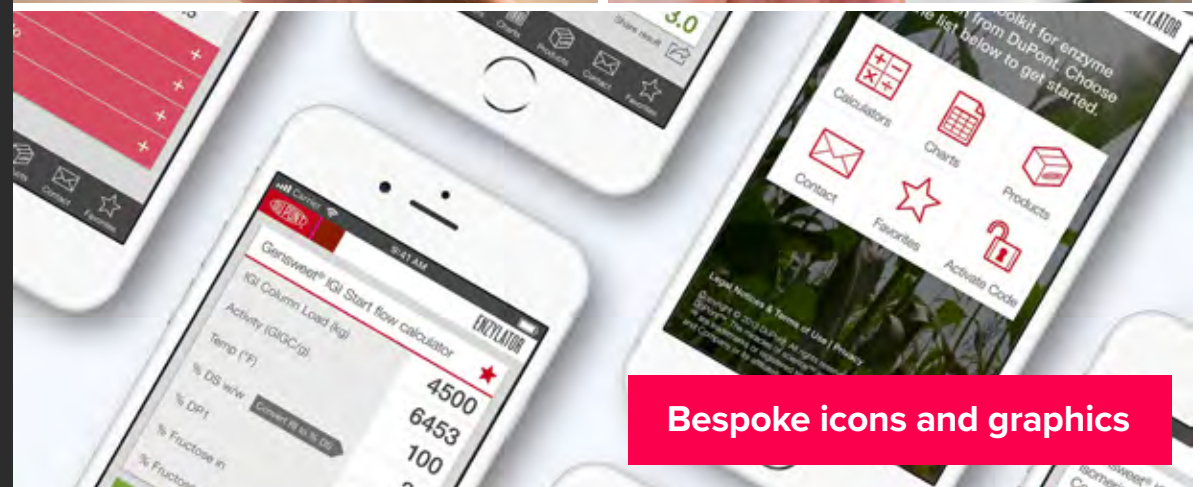
# Calculating customer value

The layout is designed to walk users through the calculations in an intuitive way, verifying their input against known values for minimal errors. The calculators use large bold numbers so that readings from equipment is easily checked against the calculator's data.

- Created user flow based on system requirements and existing customer personas
- Wireframed main layouts to find optimal balance of calculator and sales functions
- Designed pixel-perfect mockups for different screen types, including design of bespoke icon set and typeface requirements
- Provided detailed CSS and design guidelines to the development team for final build



Clear and intuitive layout



Bespoke icons and graphics



One-handed use

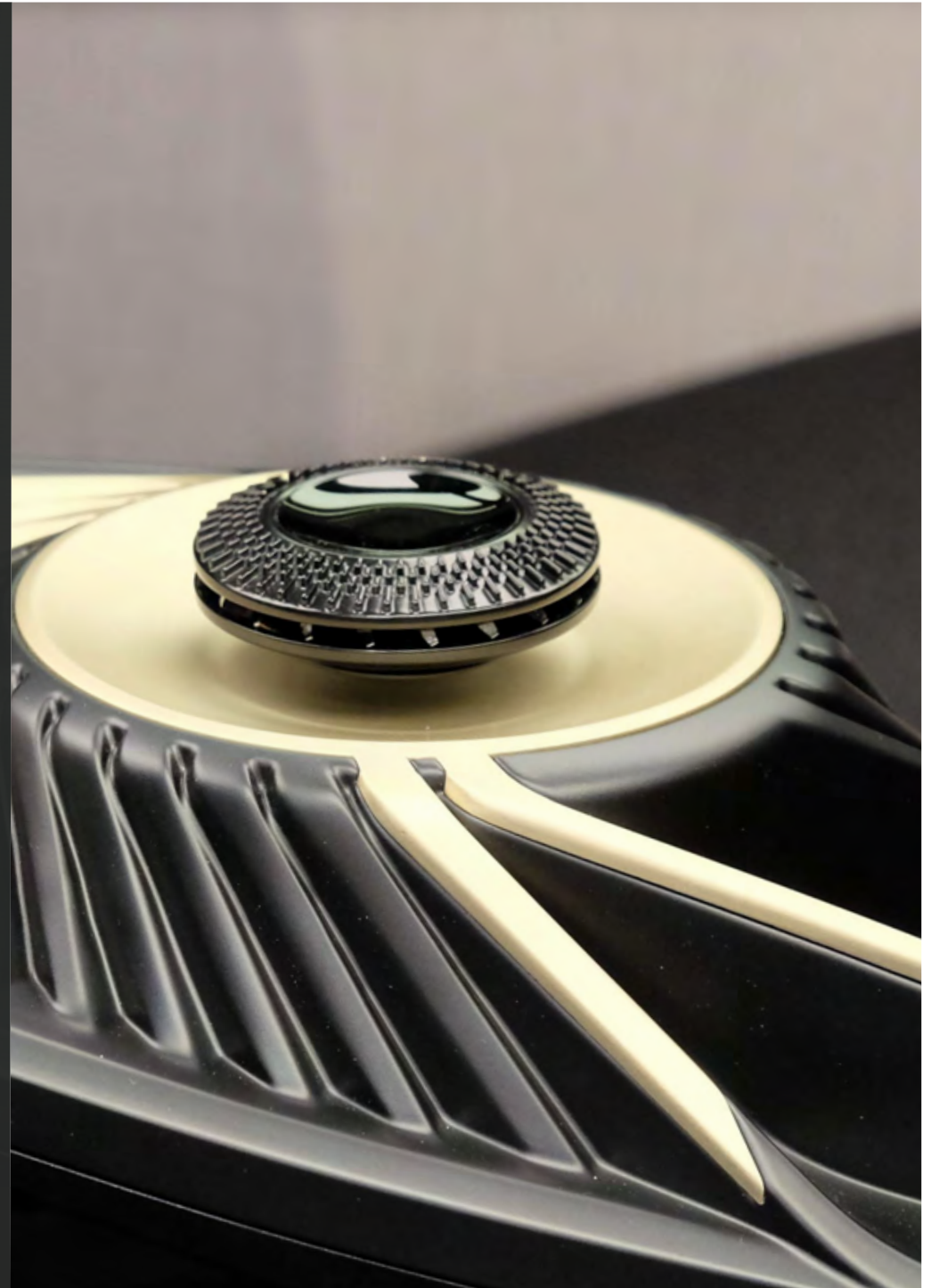


# Seeing the **future**

Since 2012, I have been creating trend reports from nearly every Auto Show around the world, as well as major Consumer Electronics shows.

Trendspotting is crucial in understanding the direction that design and technology are going, and by creating trend reports I can be confident that I always stay on the cutting edge, and so do my clients.

- > **Field research**
- > **Photography**
- > **Analysis**
- > **Presentation**



# Seeing the future

- Photograph all of the top concepts and highlights from major Auto and Consumer Electronics Shows (CES, IFA)
- Speak to designers, journalists, and insiders to better understand the relevance and development cycle of technology and concepts
- Gather photography and analysis into a visually-compelling digital/print report that highlights the leading trends, CMF design, technology and ideas from each show



mensen

## Geneva Motor Show 2019 Trends

5-6 March 2019

LIFESTYLE TRENDS

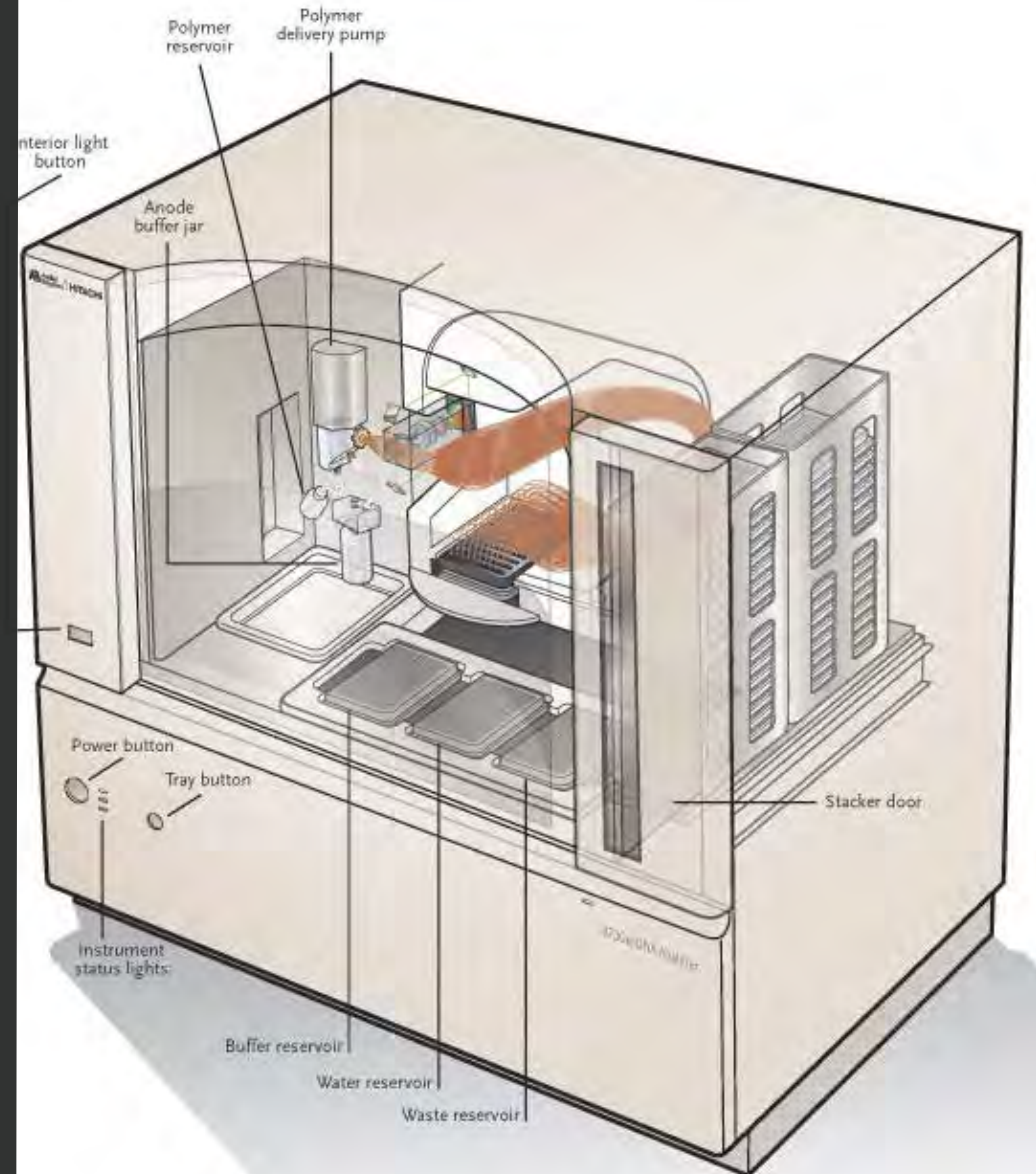




# Cutting through complexity

For years I had a regular feature illustrating complex laboratory instruments and methodologies for scientific journal *The Scientist*. I worked directly with manufacturers and journalists to understand and distill intricate machines into understandable, visually appealing—and scientifically accurate—technical illustrations

- > Research
- > Concept distillation
- > Technical illustration



# Cutting through complexity

- Devices were chosen by editors as subject matter for articles, then I contacted laboratory users and manufacturers to get access to machines directly for research
- I photographed and interviewed users to better understand the technology and how it's used
- I researched the fundamental science behind each machine to ensure complete understanding of the methodologies and mechanisms at work
- I hand sketched rough layouts for approval by the art department and editorial staff
- I would then create final artwork as editable vector illustrations in Adobe Illustrator and send to art department and editors for final placement and captioning

Additional work for The Scientist can be found on the [journal's website](#)

## TECHNOLOGY HOW IT WORKS

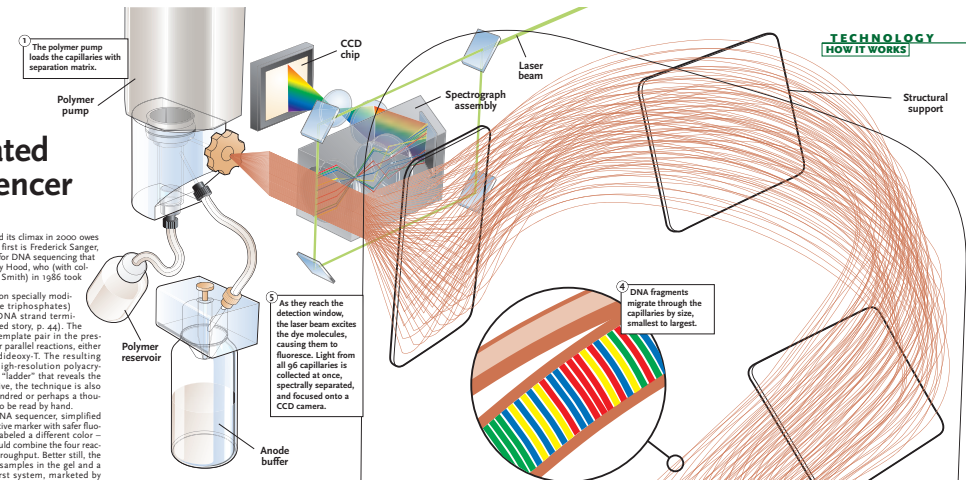
### An Automated DNA Sequencer

By Jeffrey M. Perkel

The genomics revolution that reached its climax in 2000 owes its very existence to two men. The first is Frederick Sanger, who in 1977 developed the method for DNA sequencing that now bears his name. The second is Leroy Hood, who (with colleagues Michael Hunkapiller and Lloyd Smith) in 1986 took Sanger's method and made it better.

Sanger's enzymatic approach relies on specially modified reagents (2',3'-dideoxynucleotide triphosphates) whose incorporation into a growing DNA strand terminates the extension reaction (see related story, p. 44). The method calls for extending a primer-template pair in the presence of a radioactive marker and, in four parallel reactions, either dideoxy-A, dideoxy-C, dideoxy-G, or dideoxy-T. The resulting products can then be resolved on a high-resolution polyacrylamide gel to produce a four-lane-wide "ladder" that reveals the template's sequence. Brilliantly inventive, the technique is also painfully laborious, producing a few hundred or perhaps a thousand bases at a time, which then have to be read by hand.

Hood's invention, the automated DNA sequencer, simplified the process first by replacing the radioactive marker with safer fluorescent ones. As each terminator was labeled a different color—red, green, yellow, or blue—scientists could combine the four reactions into one, increasing the per gel throughput. Better still, the design used a laser to interrogate the samples in the gel and a computer to read the results. That first system, marketed by



### MALDI-TOF/TOF Mass Spectrometer

By Jeffrey M. Perkel

Perhaps no tool has been as instrumental to the proteomics revolution as the mass spectrometer. With the ability to deconvolute highly complex mixtures over a wide range of abundance levels, these machines enable researchers to identify and quantify proteins and to determine if and how those proteins have been post-translationally modified.

The basic mass spectrometer measures an ion's mass-to-charge ratio only. This enables peptide mass fingerprinting, which is the identification of a protein based on the specific group of peptide masses it produces. But tandem devices, the so-called MS/MS instruments, can provide peptide sequence information as well. The key components shown on these pages demonstrate one of these instruments: the 4000 Proteomics Analyzer made by Applied Biosystems of Foster City, Calif., which features a MALDI (matrix-assisted laser desorption/ionization) source and tandem time-of-flight (TOF) (TOF) mass analysis.

1 The proteins typically digest with a protease (e.g., trypsin) into a 10- to 20-peptide range. The peptides are enzymatically treated (e.g., with trypsin), mixed with matrix (typically alpha-cyano-4-hydroxycinnamic acid or 2,5-dihydroxybenzoic acid), and allowed to dry. The dried matrix-peptide mixture is then mounted on a metal target plate, and allowed to dry. The plates contain high-throughput matrices, sometimes holding several hundred samples at once. Equipping the instrument with an autohandler increases the dry gel of each assay automation.

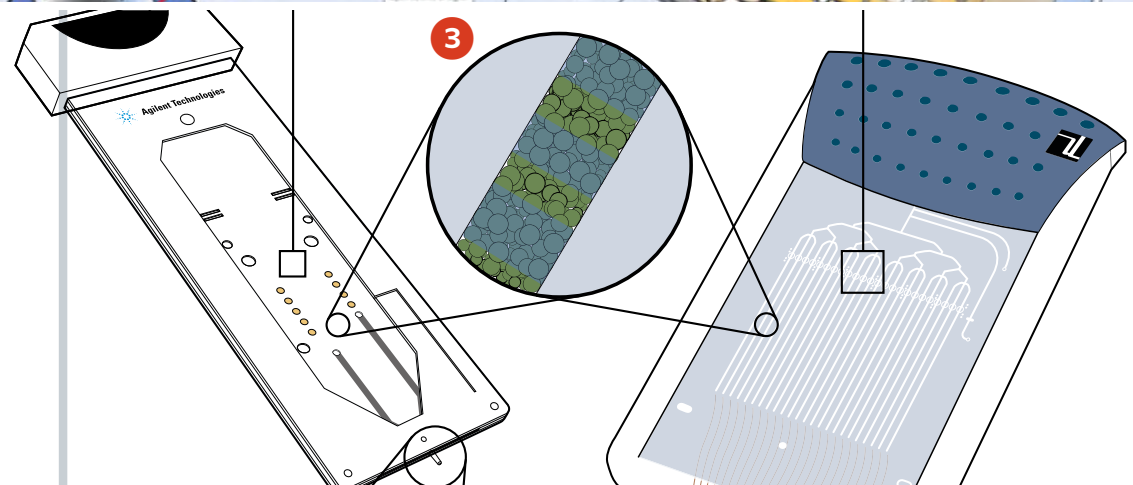
2 Once on a 96-well plate, the laser charge has passed through a specific spot, an ultraviolet laser (or, in some cases, a Nd:YAG laser at 1064 nm, for ionization) strikes the sample. The matrix material absorbs this light energy, generating enough heat to evaporate and ionize the peptide sample, generally with a charge of +1.

3 As an ion starts down the flight tube, its speed is a function of the ratio of its mass to its charge. A particle's m/z ratio is measured based upon the time of flight.

4 The ions are accelerated through a series of ion optics, including a series of electrostatic lenses and a series of ion mirrors, to a detector. The detector measures the ion's position, producing a graph of intensity versus m/z ratio.

5 The detector measures the ion's position, producing a graph of intensity versus m/z ratio.

6 The detector measures the ion's position, producing a graph of intensity versus m/z ratio.







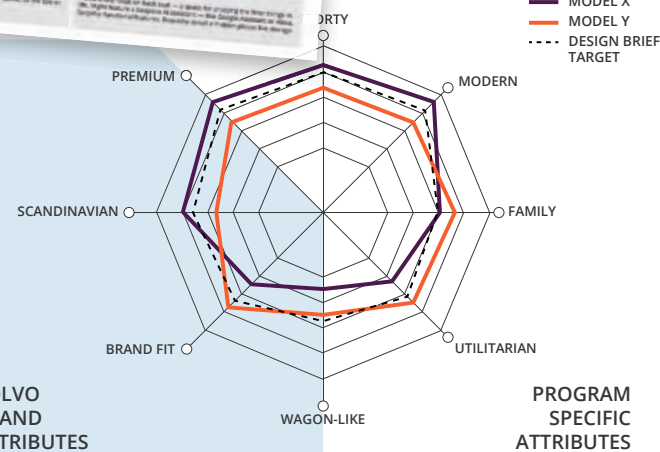
# Automotive UX work

I've worked with design studios, product planning and executives from some of the world's top automakers to craft award-winning design strategies and products, as well as to guide brands through the complex changes coming to the industry.

# Volvo projects

Since 2011, I have worked on many projects for Volvo Design, including user research, design strategy, and explorations of future market changes

- Brand design strategy for Thomas Ingenlath upon his arrival at Volvo
- Customer clinic observation and feedback recommendations
- Research and design recommendations for the next-generation V40
- Journalist feedback and analysis for Concepts 40.1 and 40.2
- New usership model scenarios and concepts (360C Concept)
- Polestar Identity research
- New model expert interviews and analysis



## QUOTES FROM PARTICIPANTS:

### MODEL X

"It looks like a Porsche Cayenne"  
 "It's much more premium than the current XC60"  
 "The taillights just don't say Volvo"  
 "The grill is clearly chasing Audi"  
 "The front is too aggressive for a Volvo"  
 "It's definitely not for families"

### MODEL Y

"It looks like the natural progression of the current car"  
 "The taillights instantly make it a Volvo"  
 "The side details are so fussy, it looks pre-dented"  
 "The rear window would have good visibility"  
 "It's a car for a young family man"



# Understanding the **future of car ownership**

A rising Scandinavian OEM wanted to find out how the brand could continue to grow its thought leadership—and customer base—in an autonomous, shared-car world.

We used extensive research, user scenarios, expert interviews and more to find the answer.

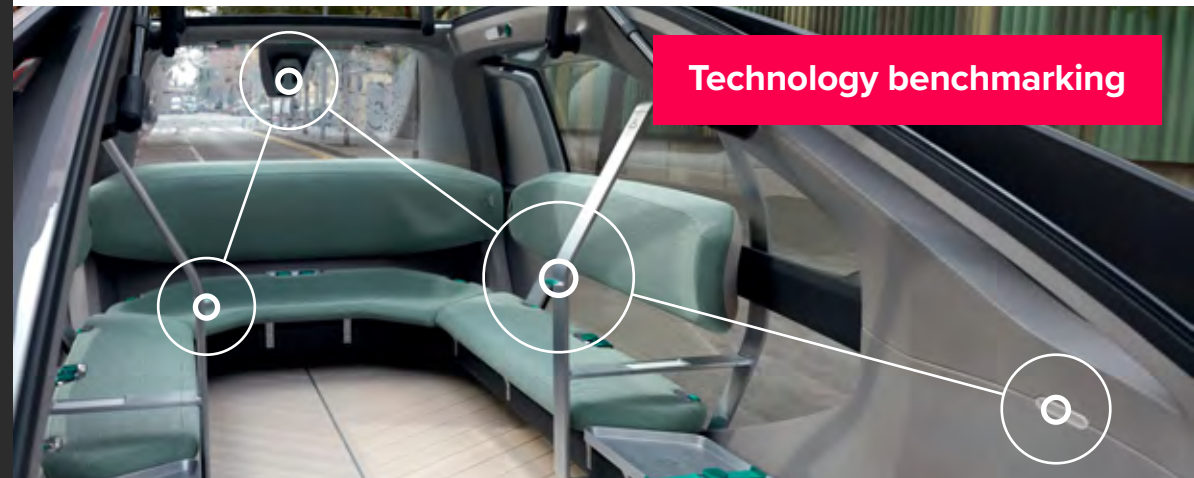
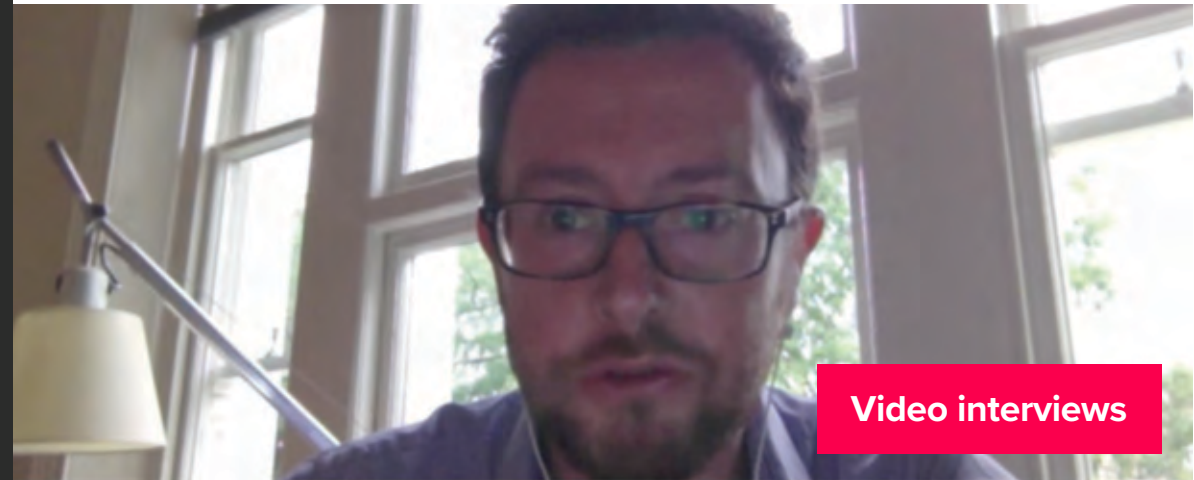
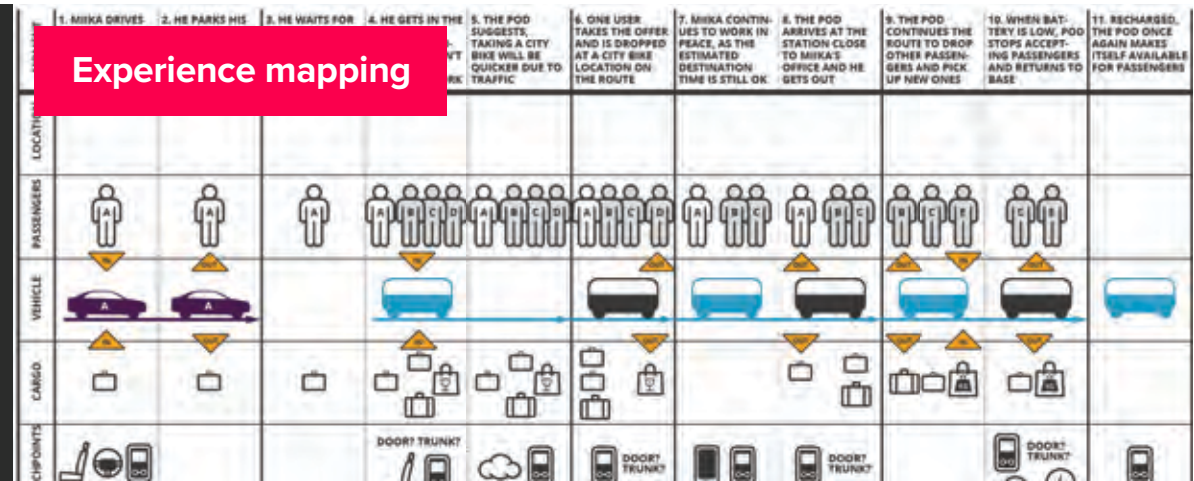
- **Desk research**
- **Persona creation**
- **Journey maps**
- **Expert interviews**
- **Recommendations**





# Understanding the future of car ownership

- Researched trends and statistics for new ownership and usership models, including car sharing, ride hailing, shared mobility models and public transport
- Created personas and user scenarios based on market and future ownership research
- Create detailed journey maps to understand key opportunities and challenges for both the car itself, as well as the brand service model
- Presented user journey and touchpoint maps to selected subject-matter experts during video interviews for evaluation and feedback
- Analyzed video interviews to understand best concepts for refinement and further exploration
- Created final concept recommendations for Volvo Design based on combined analysis of research, scenarios, and interviews



# Re-imagining a missed opportunity

After a demo of the new Mercedes MBUX interface raised many questions about the system interactions, I set out to understand the design logic and propose a new solution to improve on the production version.

I explain my vision in a series of articles that can be read here:

Part I: [A Curious Substitution](#)

Part II: [5 Changes to Make MBUX Better](#)


Part III: [A New Vision for MBUX](#)





# Re-imagining a missed opportunity

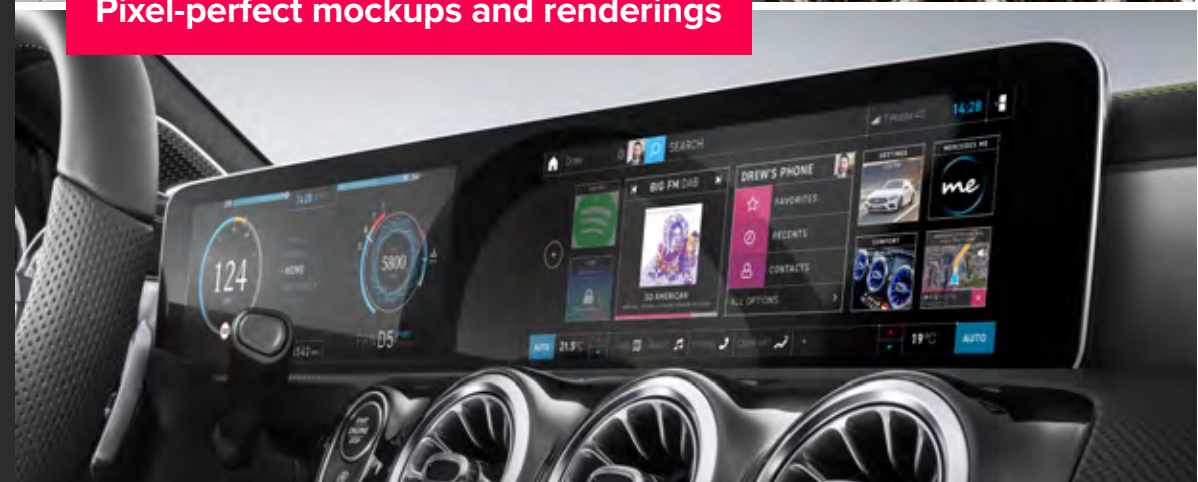
- Researched and reviewed current MBUX system interactions and design choices
- Performed a SWOT analysis of recently shown premium competitor in-car interfaces
- Created step-by-step breakdown of positive and negative aspects of current MBUX design
- Designed user journeys to better understand the needs of the user in motion and under different driving circumstances
- Created wireframes of different potential system layouts and contextual information
- Created prototypes in Sketch, using Anima and Principle to animate and introduce interactivity
- Created Photoshop renderings of the final design placed into the existing A-Class interior

Reimagined by  mensen

Animations



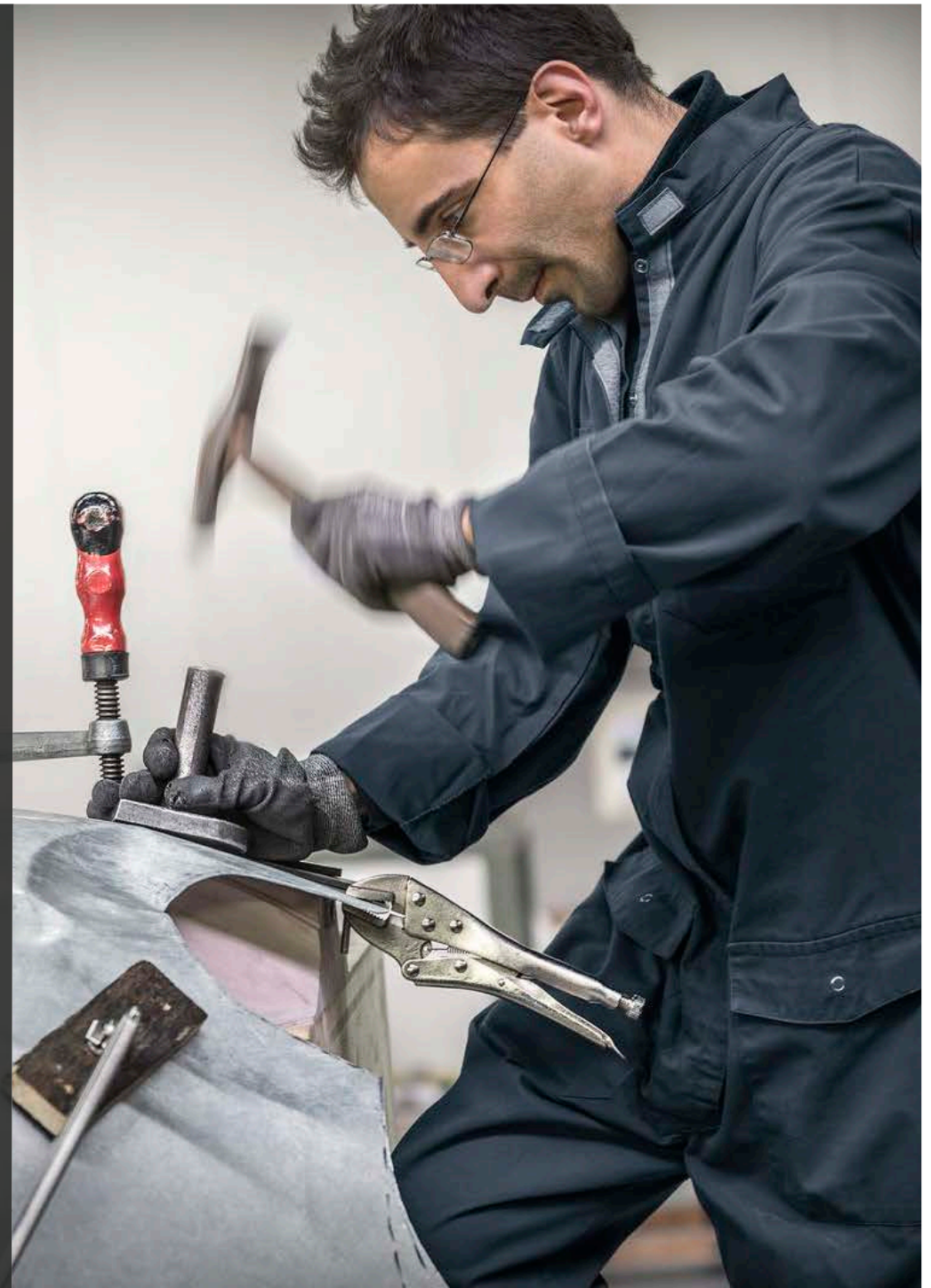
Pixel-perfect mockups and renderings



# Coachbuilding a New Future

As its once-mighty competitors fall on hard times, one of the last remaining Italian carrozzerie asked how it could remain relevant—or exploit its unique assets—to build a strong foundation for the future of the business and the brand.

- Competitive analysis
- Quantitative research
- Trend analysis
- Expert interviews
- Recommendations





# Coachbuilding a New Future

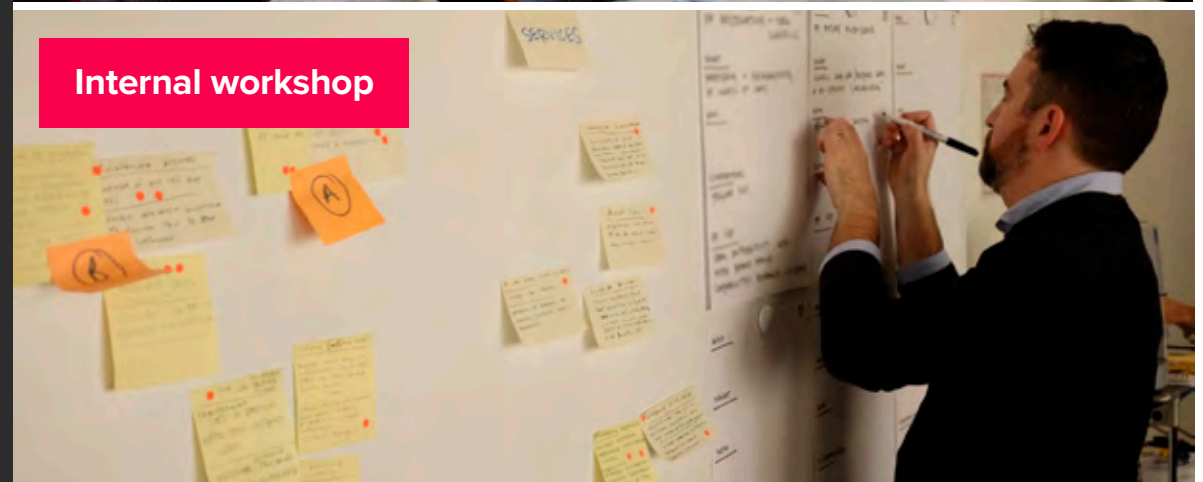
- Created and managed a survey of 1000 individuals in 5 global territories to gauge recognition and perception of the brand across a broad cross-section of the population.
- Researched businesses in related fields that have been through similar transformations and how they managed/achieved them.
- Facilitated multiple workshops with top management from different business units to better understand their motivations, perceived SWOT and openness to change.
- Interviewed industry experts to better understand their external perception of the brand and how its competencies might be leveraged in the future
- Presented final recommendations to the C-suite and Board to very positive reception. Many of the recommended transformations are currently underway.



**Design process audit**



**Quantitative and competitor analysis**



**Internal workshop**

# Why the harsh words for our UX?

When a well-respected premium OEM repeatedly read negative write-ups of its top-end infotainment system, we were asked to evaluate the reasons why and what could be improved. Through one-on-one user testing, we let the customers do the talking.

- > Benchmarking
- > User testing
- > Video editing
- > Recommendations

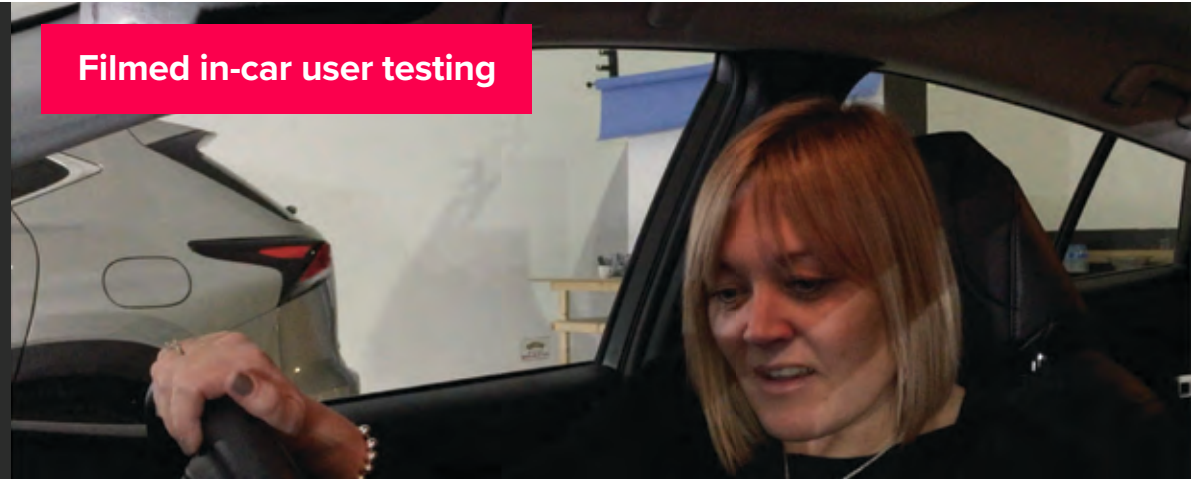




# Why the harsh words for our UX?

- Created an overview of competitor infotainment systems and analyzed class-leading standards for interaction and appearance.
- Organized a small but extensive user test with customers of the brand as well as competitors. Real cars were used to create conditions as close to real-world as possible and testing was filmed for post-test review, analysis, and presentation.
- Edited together short video clips of users—subtitled in the official corporate language—to ensure maximum impact for skeptical management team.
- Created a series of recommendations to improve the system based on combined output of competitor benchmarking and user testing outcomes.

Filmed in-car user testing



1-on-1 interviews



**Premium brand drivers all view their rotary input knobs as superior**  
The BMW, Mercedes, and Audi users all view the rotary control knobs in their car as a superior means of interfacing. With what appears on the screen, over both touchscreen systems and the Lexus's trackpad.  
They say that their rotary controllers are both easier to use and more precise because each input (a turn of the dial or a single click) relates directly to a response on the screen.  
They all suggest that the rotary knob interface means makes them safer drivers than if using a touchscreen, because it requires less "eyes off the road" time and provides greater affordance.  
None of these users had a significantly negative reaction to the Lexus touchpad — some preferring a touchscreen, but citing its sensitivity as a potential problem on the move.



Competitive analysis

**Most users have predictable expectations for the in-car HMI of the future.**  
Expectations are based very much on the use of consumer electronics technology and currently acknowledged best practice. There is a desire to make things simpler, quicker, better integrated and familiar.

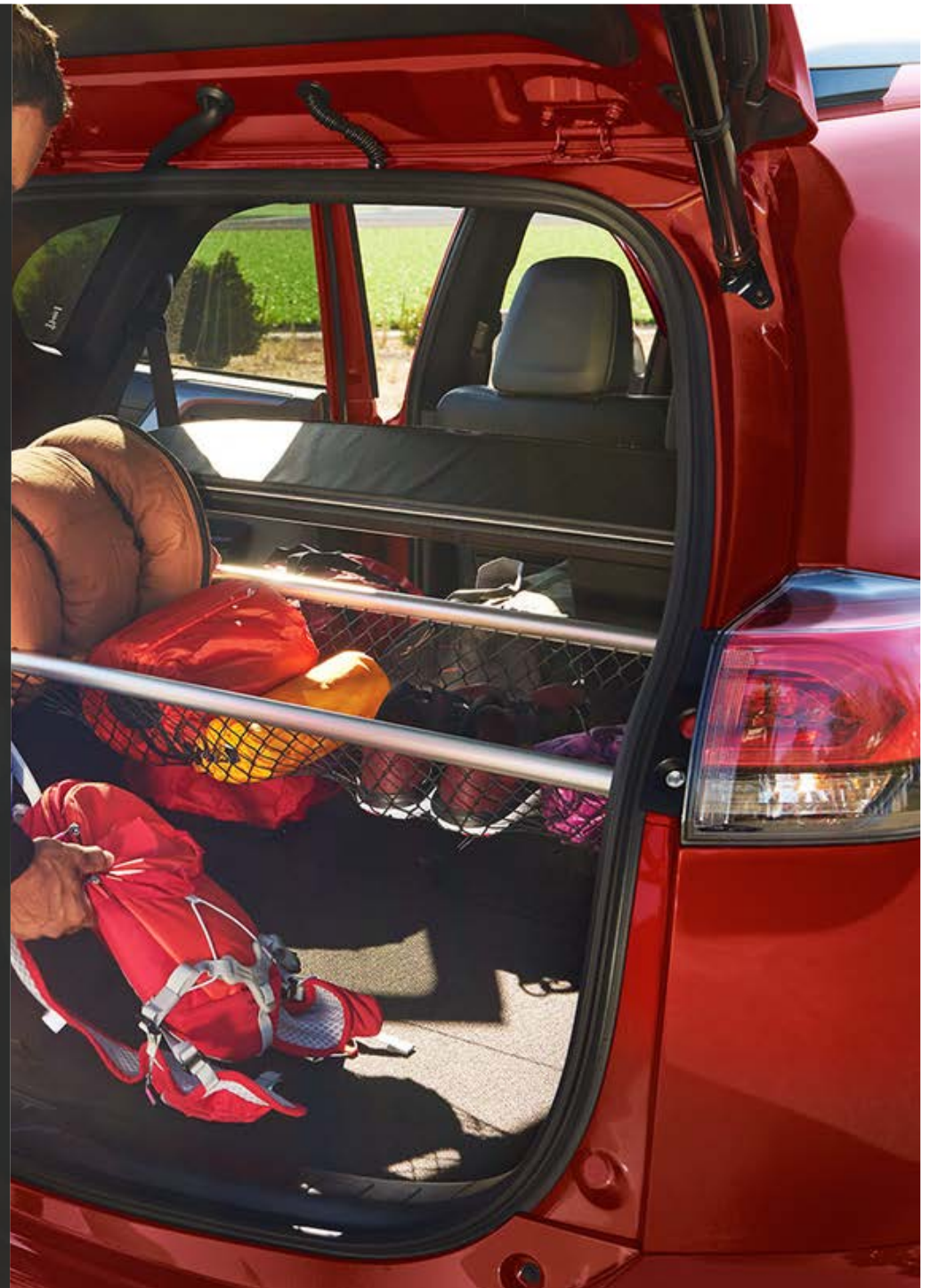
- Growing expectation of easy linking of phones — and Apple CarPlay / Android Auto.
- Online capabilities and integrated search are fast becoming an expected norm.
- Providing simple, easy to use, time-saving solutions that are reliable to technology in the rest of a user's life will be key in making future systems relevant.
- While consumers do not talk specifically about artificial intelligence, concepts expressed such as "having a car that can learn and change with you," suggest an appetite for the kinds of developments AI and machine learning will allow.



# Getting **emotional** about crossovers

One of the original “soft-roader” SUVs was feeling the crunch of increased competition, so we were tasked with helping the design team understand what motivates SUV and crossover buyers and how best to position their 2023 model for a changing marketplace.

- Ethnographic interviews
- Historical analysis
- Market analysis
- Recommendations





# Getting emotional about crossovers

- Researched the current SUV/crossover market and analyzed how that has changed over time.
- Analyzed competitors and market trends to understand how other brands are adapting to customer demands and how that will affect future crossover typology and use.
- Interviewed SUV and crossover owners to understand their motivations for choosing their car, as well as how they perceive future purchases changing.
- Charted out likely future scenarios for the crossover space along with recommendations for how the brand could adapt to match those future expectations.
- Edited video clips of the interviews together to illustrate the emotional impact of crossovers, and added subtitles to ensure management buy-in.
- Presented research and films to design team, with clear recommendations for future positioning and strategy

## Historical analysis

The perception of SUVs has changed over the last 10-20 years

While all interviewees perceived their SUVs to now be mainstream vehicles, some, especially older owners, remember the SUV's origins in more rural/rural settings. Many owners believe that there is still some negativity towards large SUVs in regards to environmental issues, but, most believe that this is largely diminished in the small class of Crossover SUV — as opposed to the larger SUV classes.

- There is a long history of military muscle and Land Rovers as the origin of the SUV and this still shapes some perceptions of the typology as a vehicle for older users.
- Many people still see large SUVs (especially the traditional body Land Rovers) as being gas guzzlers/ environmentally unfriendly, but most don't see their vehicle as fitting into this category.
- Younger customers are much more likely to perceive SUVs as a completely mainstream car than older customers.
- There is still a perception that large SUVs are an indicator of social class and therefore continue to have some negative associations with minority customers.



capabilities enable owners to be generous to others.

and capital (see *Land*, increased safety) creative citizens to share use of their vehicle more often as a level of generosity not found in other typologies.

For example, we saw a family in the rear seats — as being better for taking adult family or children on the town than a regular car.

It is also part of this generosity — to enable parents to take grandchildren on excursions with them — or occasionally, but usefully, offer short trips to make people this would be friends.

Land-ford-down seats, allowed parents to feel that they could be helpful to friends or family in other ways.

Given of safety made every feel it was a better choice for the transport of young children, or even then for use on holiday longer trips.



## Ethnographic interviews



## Market analysis

# Who I've **worked** with



*pininfarina*



◀ DUPONT ▶



*wtw*

cardesignnews



▲ neat

***Nikon***





## Drew Meehan

Design Research

Design Strategy

User Experience Design

Branding

Transportation Design

For more samples please visit:

[viacelli.com](https://viacelli.com) (non-automotive work)

[mensenauto.com](https://mensenauto.com) (automotive work)

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