



MOBILE APPS & EMERGING TECHNOLOGY

2020-2021

/1/

THE TEAM

/2/

OUR PARTNERS

/3/

OUR PRACTICE

/4/

CASE STUDIES

THE TEAM

OUR EXPERTISE

BY THE NUMBERS

100+
Combined Years
of Leadership
Experience

15K+
Apps
Managed

10+
App Stores
Built

100+
Apps
Built

900M+
Unique Active
Users

7
Startup
Acquisitions

Our team has a unique blend of industry-recognized knowledge driven by a combined 100+ years of experience in mobile apps and emerging technology.

Our group has launched apps like The WSJ, London Evening Standard, The Atlantic, Tetris, MedHost, and Wheel of Fortune, while consulting on early developed apps like Pandora, eBay, and more.

Furthermore, we have not only built cellular networks, but also strong middleware platforms for rapid app development, have a patent on the creation and development of mobile hotspots, as well as being an early innovator in Natural Language Processing (NLP), well before the surge of today's in-home hubs and assistants.

OUR CAPABILITIES

VISION + ROADMAP

Competitive Audits
Customer Digital Behaviors
Design Sprints
App Vision Planning

INCEPTION

Prototypes
Client/User Interviews
Solution Delivery

DESIGN + BUILD

App Design
User Testing
Native App Development
Automated Quality

RELEASE PLANNING

App Store Optimization
Beta Programs
Customer Support

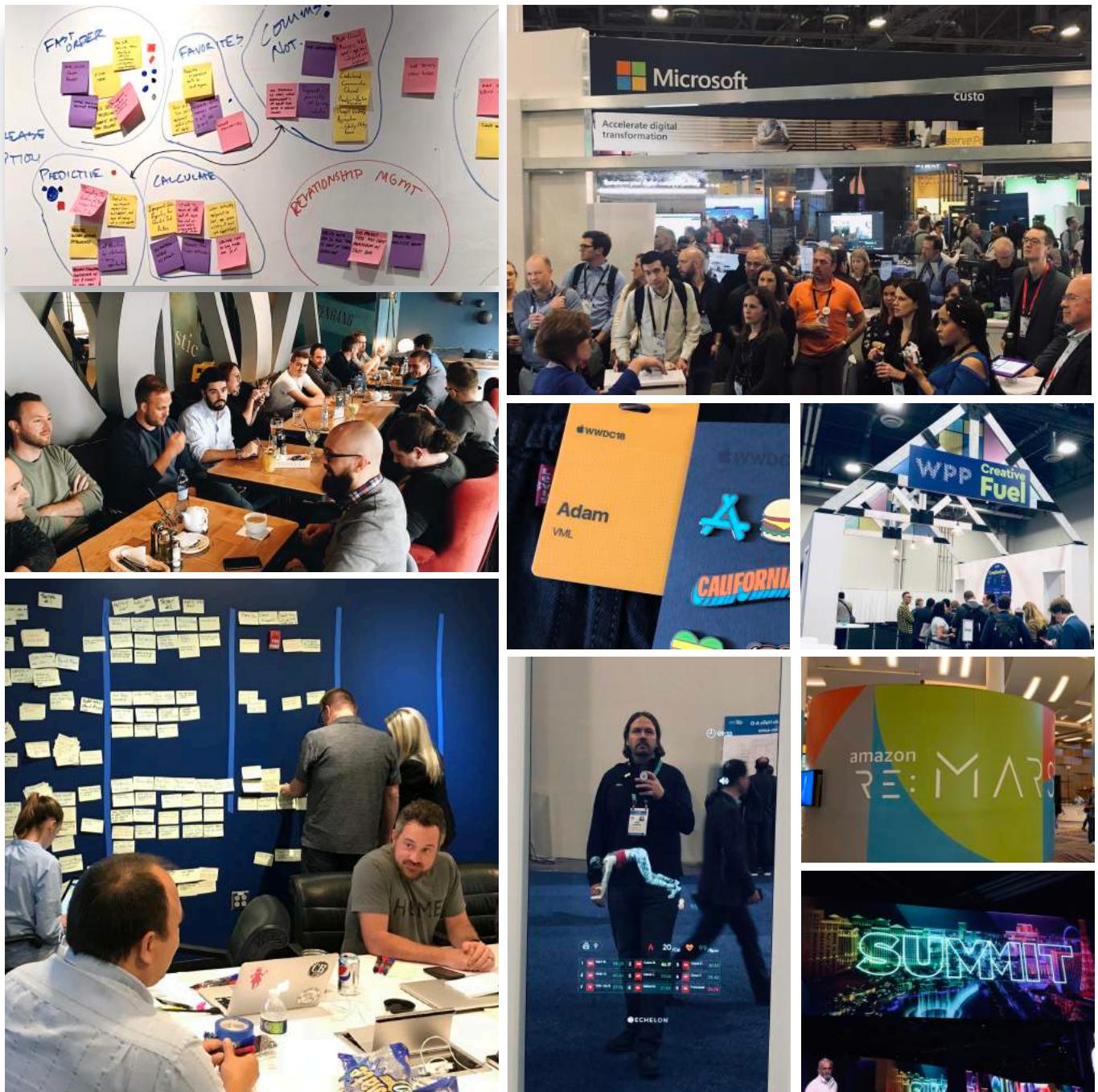
LIFE CYCLE

Acquisition and Launch
Cross-Channel Messaging
Story-Telling

COMMITMENT TO HYGIENE

We are heavy on hygiene. Our continued education, training process and standards, positions our **global team** to work fluidly together.

Through strategy and concepts, feature prioritization, stories and sizing, design with efficient development/deploys in mind, and customer acquisition and ongoing engagement, we scream velocity.



FORRESTER®

**VMLY&R RECOGNIZED
AS A LEADER**

LEAD AGENCY WAVE
AND DIGITAL WAVE

Gartner®

MAGIC QUADRANT FOR
GLOBAL DIGITAL AGENCIES

**VMLY&R IN
THE LEADERS QUADRANT**

D2C DNA
WRITING THE BOOK ON
D2C
COMMERCE

A's CX COUNCIL

**FOUNDING MEMBERS
OF THE 4A'S CX COUNCIL**

CANNES LIONS
INTERNATIONAL FESTIVAL OF CREATIVITY

31 CANNES LIONS
2 GRAND PRIX • 1 TITANIUM
4 GOLD IN 2019
AGENCY OF THE YEAR IN REACH & GOOD

AdAge

AD AGE
AGENCY TO WATCH
2019

 **VMLY&R**

6,700+ PEOPLE

75+ OFFICES

50+ COUNTRIES



GLOBAL POWER. LOCAL STRENGTH.



OUR PARTNERS

OUR CLIENT PARTNERS

EXPERIENCES BY CATEGORIES



FOOD & DRINK



MEDICAL



LIFESTYLE



BUSINESS



ENTERTAINMENT



AR



HEALTH & FITNESS



SPORTS



GAMES

BEST-IN-CLASS APP EXPERTISE

A completely in-house mobile app strategy, design and development team with experience bringing some of the most popular apps to the market, including retail, social, media, automotive, shopping and gaming. More than a quarter of a billion downloads to date.



FORDPASS



UNITED
RENTALS



S-W PRO



QUIKTRIP



BRIDGESTONE
FLEET



BANFIELD



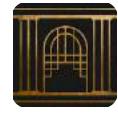
FORD
PERFORMANCE



SPRINT



RIPCURL



LIVING
HISTORY



MEDHOST



FORDCREDIT



AAFP



NBC SPORTS



DICK'S
SPORTING
GOODS



S-W
COLORSNAP



OFFICE
DEPOT



GATORADE



DELL



PFIZER

PRIDE IN PERFORMANCE

This isn't a "for hire" situation. This is a partnership, built around a mutual craving to ensure those who are engaged with our products LOVE our products. The name may be yours on the app, but we consider it our baby, too.

OUR PRACTICE

/1/

STRATEGY

/2/

PROGRAM MANAGEMENT

/3/

XD & DESIGN

/4/

DEVELOPMENT

/5/

TESTING

/6/

APP LIFE-CYCLE

STRATEGY

Why we should/shouldn't

DEEP RESEARCH & INSIGHTS

Knowing what direction a product takes requires countless hours of competitive analysis and deep-dive research into both the industry and the methodology of a solution.

In this section we will address:

CUSTOMER EXPERIENCE STACK

The customer is always right, we provide a direct map to how that happens

DISCOVERY APPROACH & PROCESS

Strength lies in building a pattern to deliver performance and KPIs that fit the project.

IDEA CULTIVATION

Using a series of methods, we test the limits of a problem through human centered ideation.

DELIVERABLES

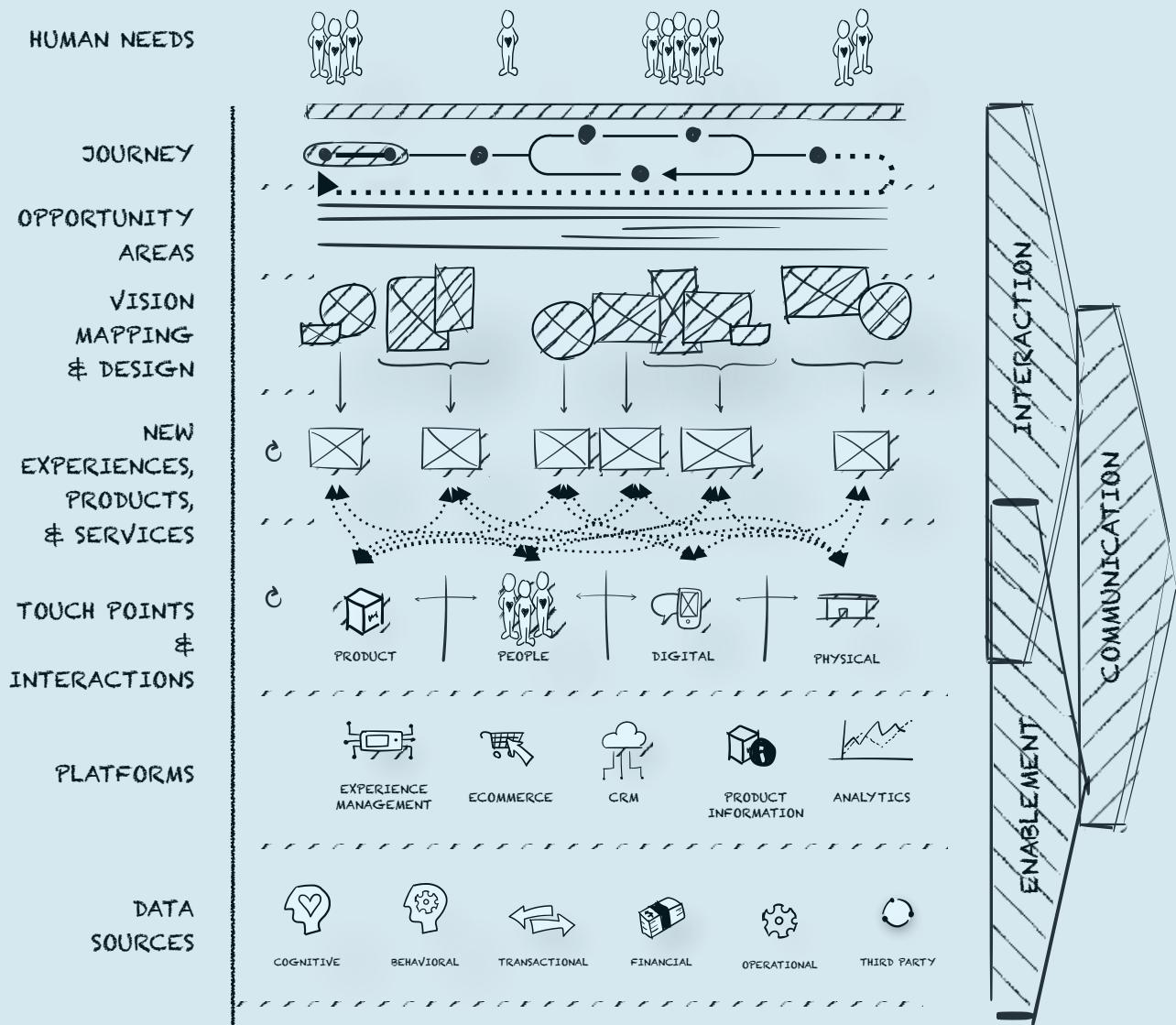
A concept comes alive through physical and digital prototyping that further vets a solution. In Addition, other forms of deliverables can push a project forward.

DESIGN SPRINT

Quick and efficient design sessions help identify holes and strengthen the workflow

PRODUCT ROADMAP

Define the customer behavior and put forth meaningful solutions to accommodate those behaviors



CUSTOMER EXPERIENCE STACK

89% of companies compete primarily on the basis of customer experience

Only 8% of customers say they have good customer experiences

– Gartner Research

We start with customer experience strategy development to inform and drive the right touch points and interactions.

This serves as our team's digital transformation roadmap.

Our CX process has been used across a variety of industries and verticals.



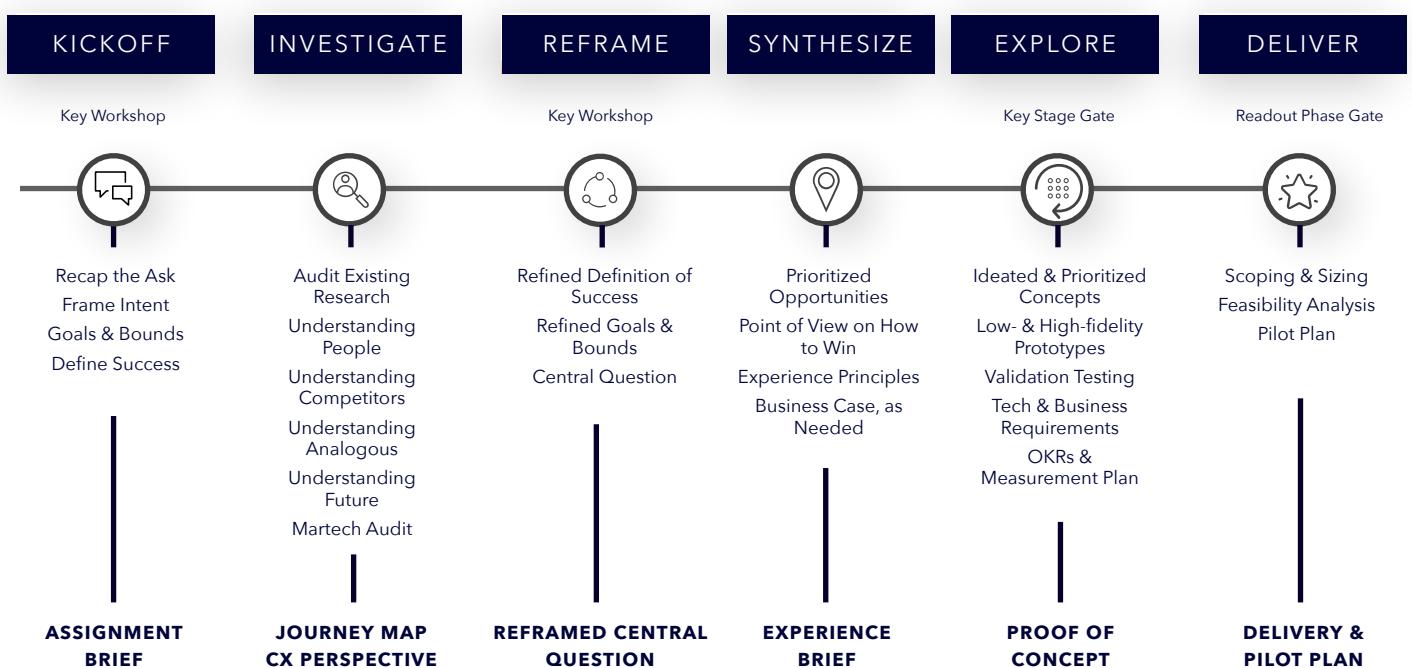
DISCOVERY APPROACH & PROCESS

Much like user- and business-centered design, value-centered design starts with discovery. However, instead of finding unmet needs, we go about uncovering the core values that drive us and our users. We then use these values as the pivot in the design process.

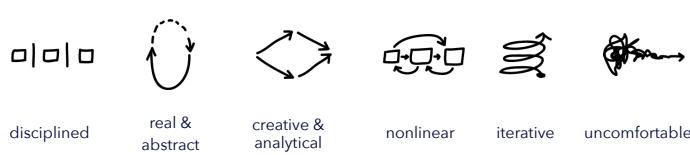


VMLY&R has enhanced the model using elements of game theory, behavioral economics, and applied experience:

- Emphasis on [Value for People] + [Value for Business] has roots in game theory, which demonstrates that win-win strategies generate more total value than win-lose strategies
- Our use of feasibility recognizes that technology and manufacturing are less often barriers than human factors like culture, capacity, and commitment. This is consistent with both behavioral science and VMLY&R experience.

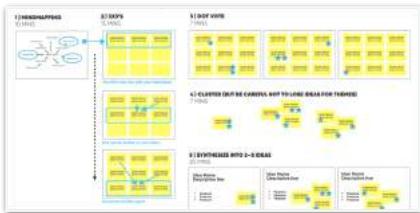


AND EMPLOYS SIX CONSTANT QUALITIES



IDEA CULTIVATION

Sample Brainsteer Plan



BRAINSTEERING

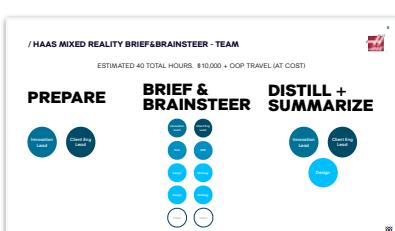
The innovation process at VMLY&R allows for a workflow that include strategy and planning all the way through prototype and scoping. This includes programs similar to Brainsteering for Rapid Innovation Workshops and Design Thinking Sessions.

Innovation Process at VML helps to focus on future or forward thinking ideations. By establishing thought leadership and proof of concept work for our clients, we can better understand the changing marketplace and position clients to be leaders in their respective digital ecosystems.

While traditional approaches to brainstorming include thinking out of the box and with absolutely no constraints, brainsteering encourages people to think inside a very carefully defined box. This will still lead to a divination of ideas leading to future potential roadmaps, but will be driven to a fine point based on the challenge statement or problem presented.

DELIVERABLES

Sample POC Plan



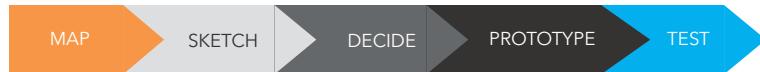
BUILDING A CONCEPT

The outcome of all ideation should amount to some form of quality deliverable. Ideally, just generating a slew of ideas could be valuable, but whenever possible we will look to take the exercise a step further by driving towards:

- Insightful Business Validation
- Estimates for Level of Effort to achieve goals
- Scoping exercises for cost estimates
- Team Sizing or building to determine scale of idea
- Initial creative designs or wireframes
- Prototyping
- Point of views or white papers to support concepts
- Patents and Copyrights

DESIGN SPRINT

Targeted design efforts, with a defined duration, focused on creating low-fidelity prototypes for testing.



Executed Design Sprint



PROBLEM DEFINITION

A defined problem space that the prototype will address.

PRIORITIZED CONCEPTS

Sketches will be generated and then prioritized.

LOW-FIDELITY PROTOTYPE

The sprint team will take prioritized concepts and build a prototype.

USER VALIDATION

The developed prototype will be tested with representative users.

PRODUCT ROADMAP

Once we understand the authority we have with the user, the opportunity to make the user's life simpler and help the business benefit, we have our vision and execution plan ready to go.



Executed Roadmap



CUSTOMER INPUT

Surveys, reviews, current analytics and interviews with the target audience

CUSTOMER DIGITAL BEHAVIOR

What digital touch points the target audiences frequent, setting their baseline for expectations

EXECUTION PLANS

Outline feature, user and business benchmarks to outline expectations and opportunities.



FROM
MANUFACTURER > **TO MOBILITY**

AUTOMOTIVE: FORD
SUPPORTING FORD GLOBALLY AS THEY REDEFINE FROM VEHICLE MANUFACTURER TO MOBILITY COMPANY

CHALLENGE

Everything we do for Ford is centered on the entire customer journey – from shopping and buying through ownership and beyond. Our goal is for Ford to help consumers at every moment of their journey.

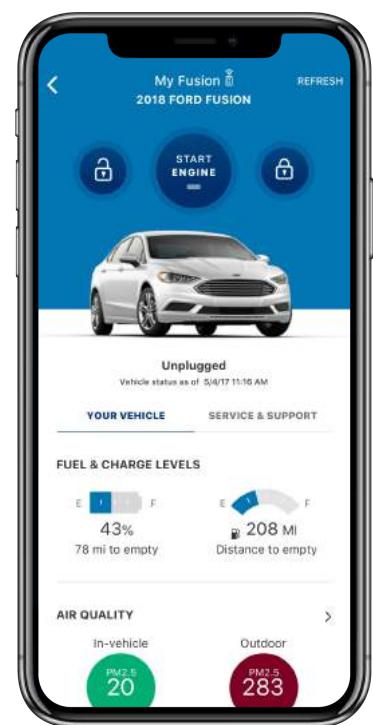
SOLUTION

Our approach centers on humans and brings design thinking to the forefront whereby putting the customer at the heart of everything we do. Each of our disciplines – creative, technology, experience design, development, strategy, data, analytics – strives to connect with Ford customers. We're earning trust and loyalty as we attract, convert, and retain Ford customers with a valuable and engaging experience.

1.2M+
FordPass
Members

80%
Have engaged
with Chat

150%
Increase in NA
shopping leads



PROGRAM MANAGEMENT

Organized Priorities

PROCESS WITHOUT PAIN

Creating a culture of collaboration means breaking down silos among development, operations and quality teams.

In this section we will address:

SOLUTION DELIVERY FRAMEWORK

Prioritize and evaluate a project using a consistent framework across all teams involved.

PRODUCT OWNER DELIVERY ELEMENTS

Regular reviews and stand-ups to ensure deadlines are met and the team remains productive.

ONE TEAM

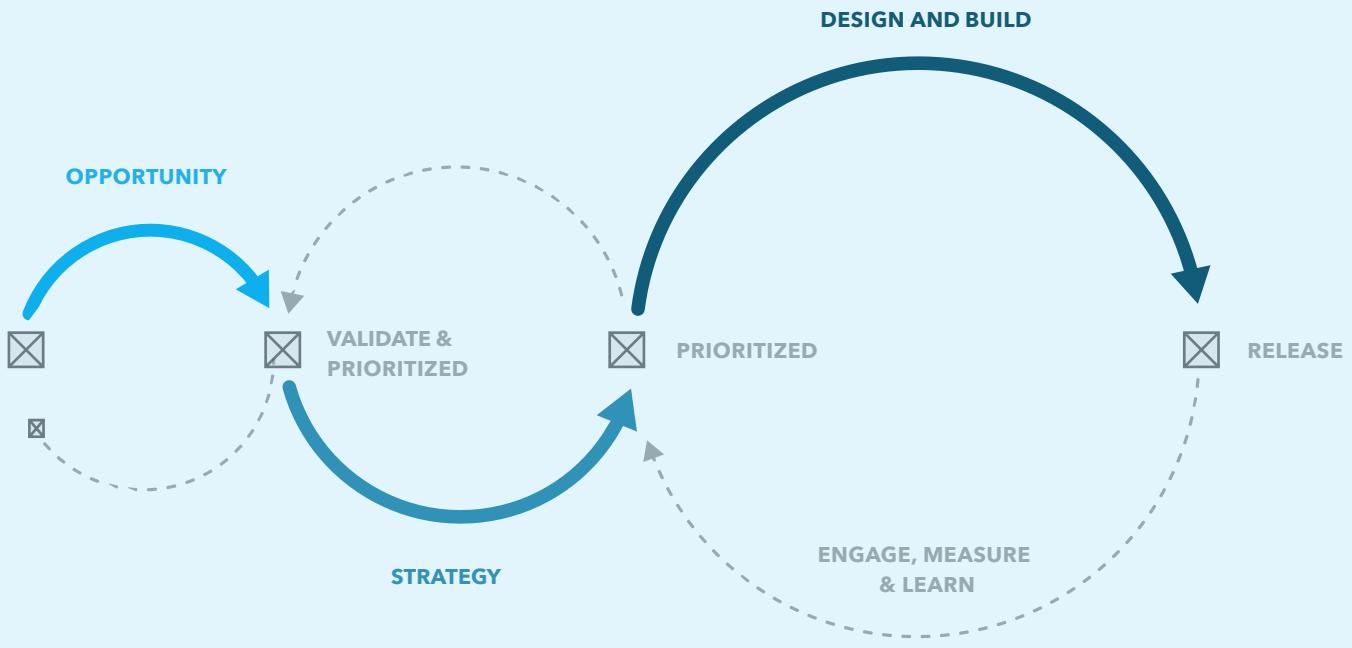
Put everyone working on the project on the same page. No waiting for your turn to take action. We are all in this together.

OUR TOOLS ACROSS THE FRAMEWORK

Our toolset aims for the greatest collaboration and efficiency standards around.

GETTING GOING

Our process as we move from ideation to live and iteration.



SOLUTION DELIVERY FRAMEWORK

VMLY&R has developed our own delivery framework based on Agile principles: The Agile VMLY&R process framework.

This framework was designed by VMLY&R for our partners to help them achieve quicker value creation with the flexibility to respond to market changes throughout the delivery process.

As you can see above, our process isn't linear, meaning we are constantly learning, iterating, and validating our designs and builds.

PRODUCT OWNER DELIVERY ELEMENTS

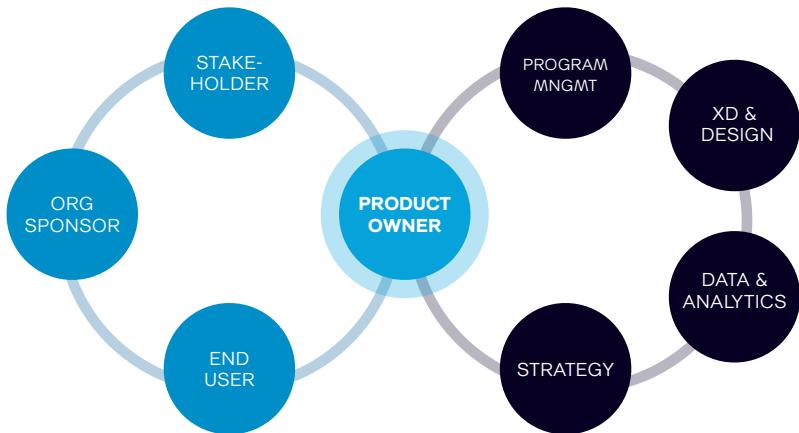
Collecting insights and contributing to the adjustment of the backlog based on user and business need:

- Determine pivot from discovery to development
- Review designs/execution of development
- Validate acceptance criteria
- Take part in daily standup, backlog grooming, sprint demo and retros
- Partner with stakeholders to keep perspectives in the contribution of execution
- Review regular progress of in-sprint builds/execution

ONE TEAM

We integrate client teams and VMLY&R mobile application SMEs for a best-in-class customer experience.

Note: One Dot ≠ One Individual



OUR TOOLS ACROSS THE FRAMEWORK

We are always assessing the software we apply to our framework and continue to welcome any new solution that the team or client may deem valuable.

COLLABORATION // WORK TO BE DONE



Jira - Used for defect and issue tracking



Confluence - Wiki-type product for documentation



Teams - Channel-based real-time messaging tool

DESIGN



Sketch/XD - Designing interfaces for modern devices



Abstract - Version control and collaboration for designers

DEVELOPMENT



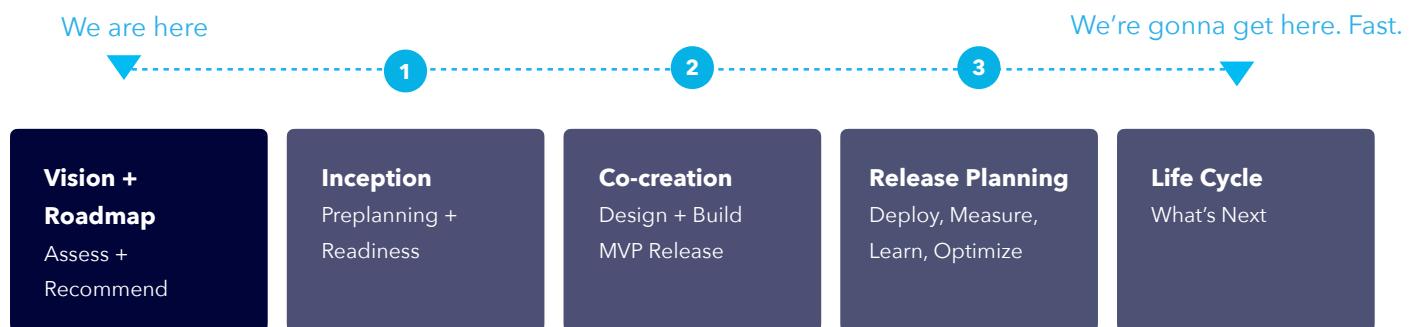
Xcode/Studio - First-class language IDEs



BitRise - Continuous integration > Nightly builds



Beta - TestFlight and Google programs for internal and external testing



VISION + ROADMAP

▼ KEEP BUILDING ON THE THINGS THAT ARE SOLID

- Kickoff meetings with ideation sessions, team work sessions and team building
- Immersion into existing technology and partnerships
- Create, validate and test central question across stakeholder groups
- Identify owners of touch point responsibilities and understand cadence, governance, ways of working, and learnings to date
- Utilize existing partnerships and analytics to better understand the digital audience and test/learn their behavior
- Customer research, including interviews, behavior expectations and competitive perceptions
- Design sprints and customer user testing
- Create roadmap opportunities landscape and prioritize
- Outline customer responsibility holders and align to working team
- Create user stories

We are here

We're gonna get here. Fast.



INCEPTION

1 TAKE A SHARP PICTURE OF THE PRESENT

Taking the vision and starting to make it real includes expanding the team and putting into action the ways of working necessary for product success.

- Working team kickoff, including all sprint 0 activities
- Expanding user stories
- Continuing design sprints
- Sharpening strategy/roadmap
- Aligning KPIs, measure of success, stage gates and storytelling approach
- Story mapping
- Release planning
- Team structure solidification
- Continued touch point testing (messaging)
- Continuing analytics deep dive
- Sprint 1 ceremonies

CO-CREATION

2 TAKE A CUSTOMER-DRIVEN APPROACH TO DESIGN AND BUILD

Working like we always do – together – we'll use a range of activities to tackle and deliver:

- User story grooming and prioritization
- Draft and iterate creative copy and user interface design
- Groom user stories and conduct sprint planning
- Define "definition of ready" and "definition of done"
- Develop front-end interfaces
- Develop back-end service layers and corresponding database structures
- Conduct quality assurance, performance, load and security testing
- Schedule and facilitate daily standups, sprint demos, and retrospectives
- Proactive/reactive cross-channel messaging and engagement triggers/plans

We are here

We're gonna get here. Fast.



RELEASE PLANNING

③ CUSTOMER FEEDBACK: EARLY AND OFTEN

We're hand in hand at this stage, defining deliverables for release and continued optimization:

- Define iterative release plans based on customer journeys and dependencies
- Engage stakeholders on expectations and progress
- Conduct deployment activities based on platform
- Plan and execute App Store and Google Play requirements
- Plan cross-channel activation
- Test and confirm measure of success metrics and storytelling
- Confirm and finalize stage gates for rollout – technical and/or measurement
- Rolling user testing

LIFE CYCLE

▼ TACKLE THE FUTURE

We're setting guardrails, governance and a go-forward plan to **continue growth**.

- Assess performance and update stage gates of in-market features across touch points
- Conduct joint planning with marketing, tech, ops and digital teams
- Provide POVs, POCs and understanding of emerging technologies to help guide future features and touch points
- Create prototype testing plans for validation of customer/business value
- Continue to monitor, measure, and define customer and competitive success
- Ingest, respond and act on customer feedback as part of contribution to the roadmap
- Define themes and epics for roadmap

THE NEXT 30,60 & 90 DAYS

What clients can expect as they begin their relationship with the Mobility team.

This is a sample of a mobile kick-off and is subject to change from client to client.

KICK-OFF

Day 1

Get smart

By Day 30

Establish vision & roadmap

Week1

Business and Customer Experience

Deep Dive

- Request/review research/materials
- Request business, legal and medical requirements
- Review current user experience & communication touch-points
- Identify KPIs

Technical Deep Dive

- Begin tech audit: systems, data, environments and integration points
- Understand communication systems

- Understand current vendors

- Financial system and process review

Financials

- MSA development
- Resource allocations
- SOW Creation
- Budget Alignment

Team Building

- Broader Partnership engagement
- Identify ways of working

OUR FIRST 30 DAYS

Week 2

Customer Experience Deep Dive

- Begin synthesis of materials
- Conduct competitor research
- Conduct stakeholder interviews
- Collaborate with MLR team on requirements
- Conduct story mapping exercise
- Conduct primary research (if needed)

Technical Discovery

- Complete audits
- Begin to synthesize audit findings
- Create system and architecture diagrams for app/middle tier
- Create vendor shortlist

- Prioritize user stories for MVP

Technical Discovery

- Complete system and architecture diagrams
- Create technology vision
- Contact vendors RFI

Week 4

Customer Experience Roadmap

- Complete roadmap and mobile app vision. Includes MVP recommendation and prioritized user stories with LOE

Technical Discovery

- Complete technology vision including tech stack, environments and architecture
- Prepare to kick-off sprint activities

Week 3

Customer Experience Vision

- Begin building vision and roadmap
- Create high-level user flow/wireframes and user stories

OUTCOMES FROM DISCOVERY

Customer Experience Discovery

Summary

- Summary of research, findings and recommendations
- Vision + Roadmap of mobile experience and middle tier.
- MVP phase 1 user stories and backlog

Technical Discovery Summary

- Summary of audits, environments, systems and our recommendations.
- Technology Vision for experience for MVP and beyond.

Kick-off MVP Build

Use vision and roadmap to kick-off the MVP development

DESIGN + BUILD

By Day 60

Fully agile team is onboarded and actively designing and developing

Sprint 1 Design

- UI and UX Development

Sprint 2 Design

- UI and UX Development

Sprint 0 Dev

- Stand Up Dev Environments
- Vendor Selection
- Begin Coding Middle tier
- Begin Coding App Framework

Sprint 1 Dev

- User Story Development
- Testing
- Client Demo
- Retrospective

DESIGN + BUILD CONT.

By Day 90

The experience is coming to life using our customer-drive approach to design + build

Sprint 3 Design

- UI and UX Development

Sprint 4 Design

- UI and UX Development

Sprint 2 Dev

- User Story Development
- Testing
- Client Demo
- Retrospective

Sprint 3 Dev

- User Story Development
- Testing
- Client Demo
- Retrospective

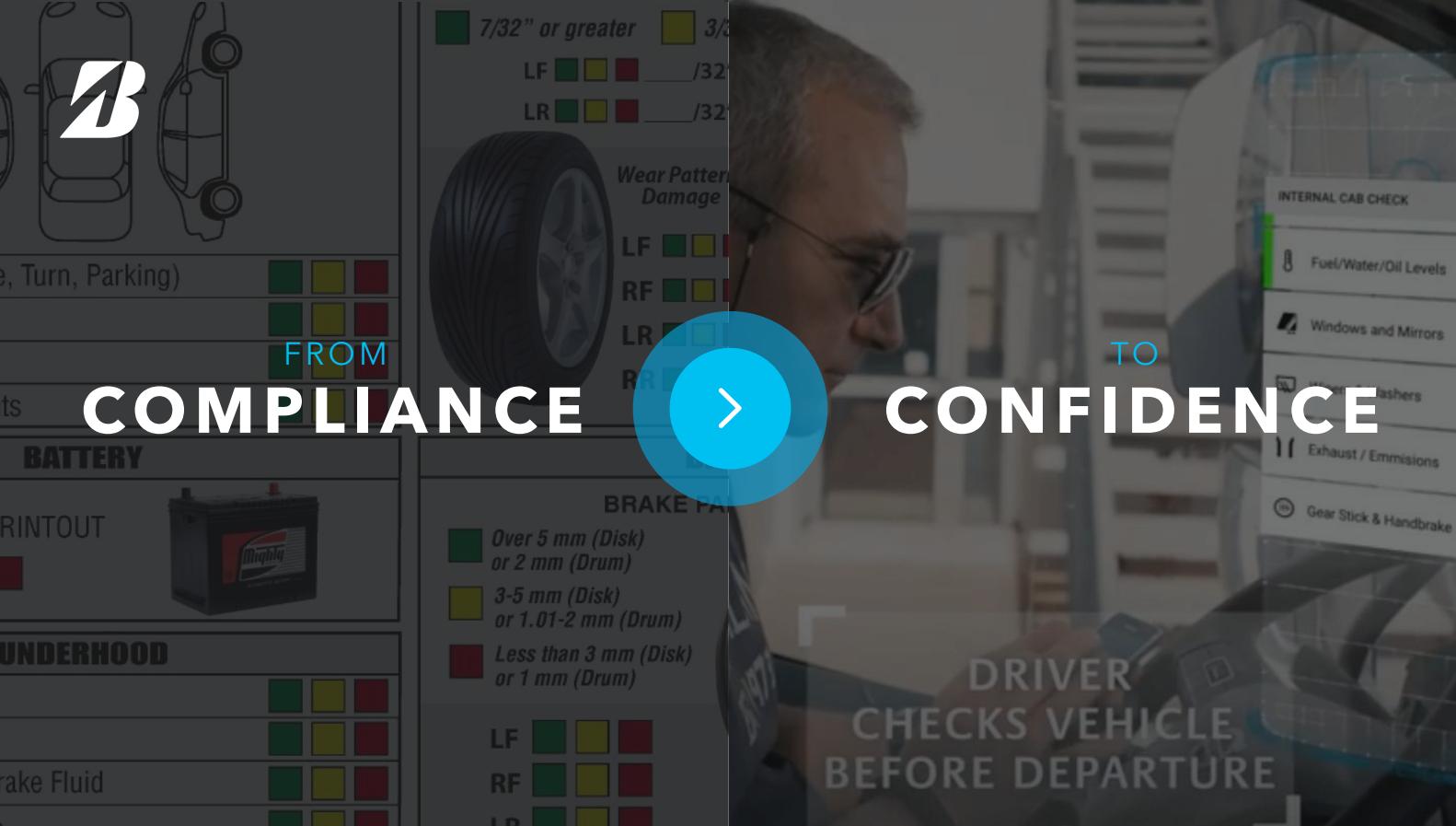
Continued Improvements

Ensure that user feedback, stakeholder feedback and analytics drive further improvements

At VMLY&R, we understand that creating a successful product goes beyond just the launch date. Without a solid plan and set of processes in place to help improve our launch product, there is a good chance of falling behind our competitors and an increased risk of diminishing our user base.

One of the key things we offer is monitoring the life cycle of a product. Creating a consistent and efficient maintenance plan and optimization team allows us to have a mutually beneficial feedback loop and long-term product vision.





FROM COMPLIANCE TO CONFIDENCE

TRANSPORTATION: BRIDGESTONE
POSITIONS BRIDGESTONE AS A
KEY PARTNER BETWEEN FLEET
MANAGERS AND THEIR DRIVERS

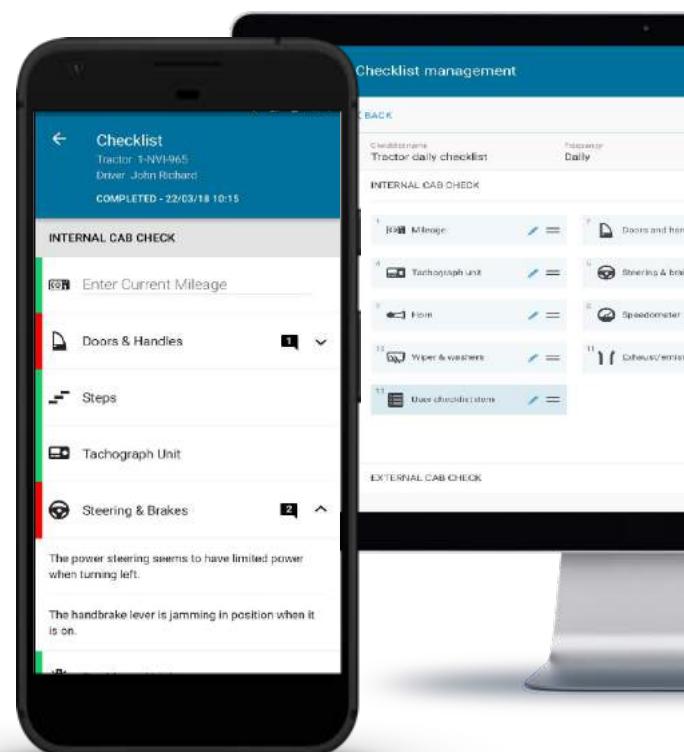
CHALLENGE

Bridgestone's market share in small and medium fleets was at stake in Europe, where cheaper players are entering the markets and sales teams cannot cover enough ground. The goal was to help Bridgestone transform its business from a tire manufacturer to a solutions business, focused on building a relationship with its fleet managers, which is beyond a basic transactional relationship.

SOLUTION

VMLY&R worked with Bridgestone to define the concept and develop a solution (app and website) to help fleets manage all their maintenance activities, ensure the roadworthiness of their vehicles, and comply with existing and upcoming regulation changes in the European market.

This was a truly a VMLY&R global effort with project management partnership in London and Kansas City, mobile and web development occurring in Kraków and Kansas City and a client product owner in Sweden.



XD & DESIGN

Customer Experiences

NATIVE-FIRST EXPERIENCES

By leveraging the latest in mobile and web design theory, we set the foundations for leading edge development while adhering to the needs of the consumer.

In this section we will address:

PLATFORM GUIDANCE

Education and Thought Leadership on the best approach to platform usage on a project level.

HIG REVIEWS

Ensure all standards are being followed based on the Human Interface Guidelines set forth by Apple and Google.

CRUX

Blended teams when both Creative and User Experience teams created a streamlined design process.

ADA COMPLIANCE

Following the modern standards of ADA allows all of our work to be accessible from initial launch to a project's sunset.



PLATFORM DESIGN GUIDANCE

VMLY&R looks to the design standards set by the platforms while providing development with the nuances to apply the client branding and voice.



Design systems are built by VMLY&R and are composed of core typography, color, components, layout, and patterns for a single product or across an entire ecosystem.



Best practices and standards are published by the platform creator, such as Google, Apple, and Microsoft, and applied by VMLY&R designers and developers in a unique product for mobile or web.

HIG REVIEWS

View a full HIG Assessment



As an initial effort in the discovery process, VMLY&R will deliver a review of the mobile experiences via a Human Interface Guidelines (HIG) Assessment.

This assessment looks at the current client experiences through the lens of best practices from Apple and Google and ensures ADA standards for accessible design are met. Recommendations are then formed on how best to approach and remedy the newly designed experiences.

Expected outcomes from this functional audit:

- **Explore and propose** enhancements or modifications to the experience
- **Understand** how current design approach impacts experience
- **Better Align** to Android and iOS platform standards
- **Focus** on potential key next steps for remediation

HOW WE DESIGN

The creative and experience design (CRUX) team works together to constantly validate and craft the design, and usability testing influences the unified app and web design decisions.



CRUX VISUAL DESIGN TEAM

VMLY&R pairs UI and UX designers for a symbiotic relationship that focuses on delivering the right experience for the users and the brand. We work with cross-functional teams in an Agile framework to deliver work on a two-week cadence.

Our goal is to develop an overarching design system that can be implemented on any screen size, device or operating system.

DESIGN SYSTEMS & ANTI-PATTERNS

We believe that a unified design systems must be mindful of their anti-pattern tendencies, in both creative and development execution.

Therefore we favor an applied design system, one that adapts to platform standards, while maintaining brand tone and voice.

A unified design system, a design system that favors consistency over applying platform standards, is often championed as reducing overhead in design and development through feature ideation and delivery on the 'design it once' mantra.

These often custom controls require the developer to either build uniquely for each platform (offsetting the advantage) or for the designer to build a platform-agnostic control (a design anti-pattern on the platform).

ADA COMPLIANCE

Android and iOS provide developers with support for global styles that not only facilitate visual hierarchy in brand content, but also comply with ADA/accessibility adherence "out of the box."

An accessibility audit is an in-depth evaluation of a set of views within the app to document the types of accessibility issues and conformance violations against W3C's Web Content Accessibility Guidelines (WCAG) 2.0 AA with a mapping to the U.S. government's Section 508 guidelines, and to provide detailed recommendations on how to fix these violations.



TYPOGRAPHY

Google's Roboto and Apple's San Francisco typefaces offer the control and flexibility to optimally display text at a variety of sizes, in many different languages, across multiple interfaces.



COLOR

ADA compliance ensured that content is legible and met Web Content Accessibility contrast specifications. VMLY&R looks to meet AA standards. AA means that text has a contrast ratio of at least 4.5 or higher.



INTERNATIONALIZATION & LOCALIZATION SUPPORT

Done properly, localization goes beyond translations and also includes other elements such as image, sound, and handling display formats of different numerical values, date and time.



SCREEN ASSISTANCE

Support for specific vision needs, screen assistance ensures that all content has supporting voice-over cues and properly articulates the content in a task/flow-oriented manner.



FROM WHICH APP? > TO FLAGSHIP

MEDICAL/MEMBERSHIP: AAFP A FRACTURED APP CONSTELLATION IN NEED OF A FLAGSHIP EXPERIENCE

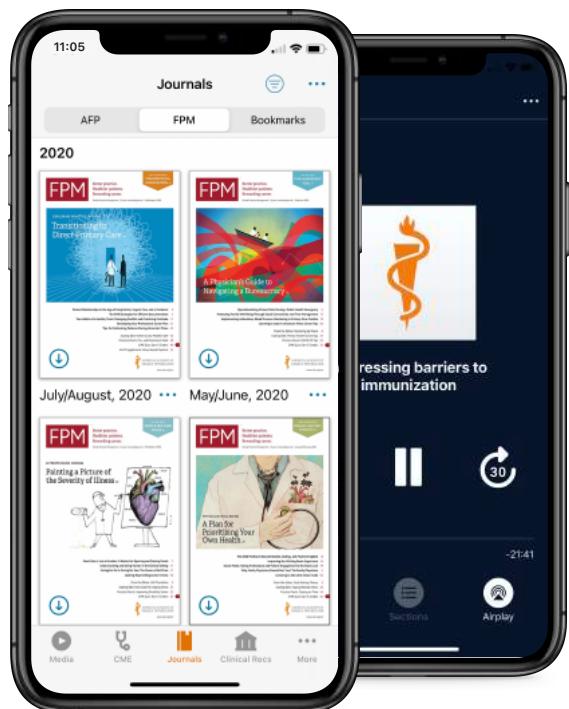
CHALLENGE

With an active membership of 70,000-plus physicians and students, the American Academy of Family Physicians has five apps available in the App Store. Internally these apps were treated as siloed projects/teams even though they shared very similar feature sets, but not roadmaps or execution of those features. And the flagship AAFP experience was often reviewed as "nothing more than an app with links out to the web," leaving members to favor and install journal apps AFP and FPM over the AAFP app.

SOLUTION

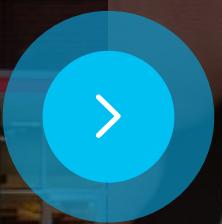
VMLY&R recommended that AAFP bundle the journal apps (AFP and FPM) within their flagship AAFP experience, creating:

- Subscription/Purchase access to over 100 in-app products
- Gain Access to the AFP Podcast and built-in audio player
- Natively search national residency programs with the ability to take personal notes and weigh decision factors for programs
- Natively report required continuing medical education (CME) and view current transcripts and reelection requirements
- Prepare for the medical board review with native practice quiz sets that earn members CME credits





FROM
**BRICK
& MORTAR**



TO MOBILE ORDERING

FOOD: QUIKTRIP
CREATING A HABITUAL EXPERIENCE

CHALLENGE

With more than 800 stores, QuikTrip is the largest chain of gas stations in the North American Midwest. In 2015, as they began to introduce QT Kitchens, they did not have a digital means for consumers to schedule, order, pickup and incentivize food purchases.

SOLUTION

Using the app, customers can place a QT Kitchen order so it's ready when they arrive. They can find and view gas pricing at nearby and favorite locations, and receive coupons and promotions to drive them in-store.

Due to specific DMAs across the Southern U.S., all of our marketing, acquisition and engagement have a strong location focus to ensure we're targeting and providing utility appropriately.

65%
Retention after 30 days

40%
Larger basket size v. in-store

85%
Opt-in to account creation



DEVELOPMENT

Technology that Lasts

SOLID PRINCIPLES & CLEAN ARCHITECTURE

Creating a culture of collaboration means breaking down silos among development, operations and quality teams.

In this section we will address:

ENGINEERING WORKFLOW

Constant communication and collaboration with surrounding workflows from Ops to Design to Testing

API FORWARD

Build when it makes sense and integrate often to allow for growth and fresh data.

APPLICATION ARCHITECTURE

Precision development requires a strong plan. Architecting that factors all the idiosyncrasies of a project plan.

HOW TO BUILD

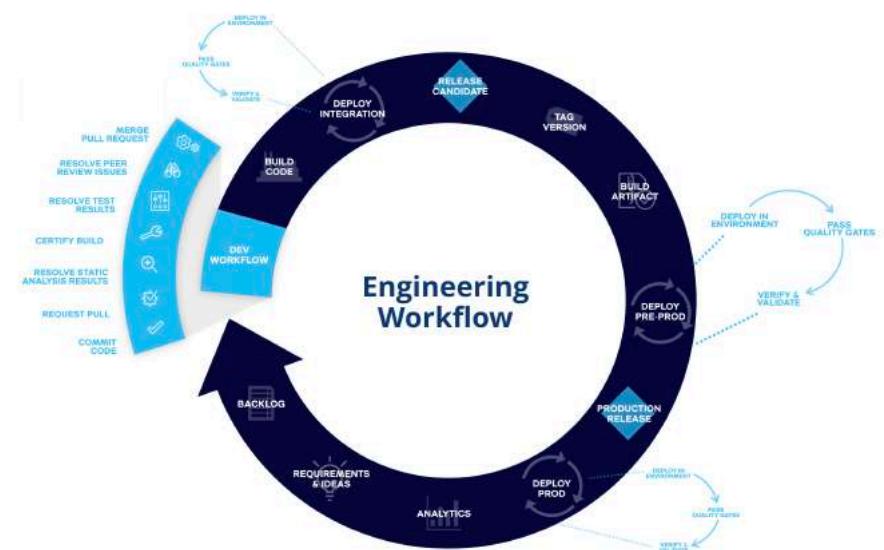
Consistent development leads to the ability to reflect and reuse both talent and elements of code.

ENGINEERING WORKFLOW

DevOps is the collaborative work of teams charged with developing and operating software from design, to development, to testing and support.

Working together, our DevOps team produces code that automates the building, testing and deploying of application code.

We develop the automation necessary to rapidly change systems with quality gates delivering stability and speed.



API FORWARD

API Forward is VMLY&R's reference architecture for delivering experiences supported by a content platform and transactional/data services.

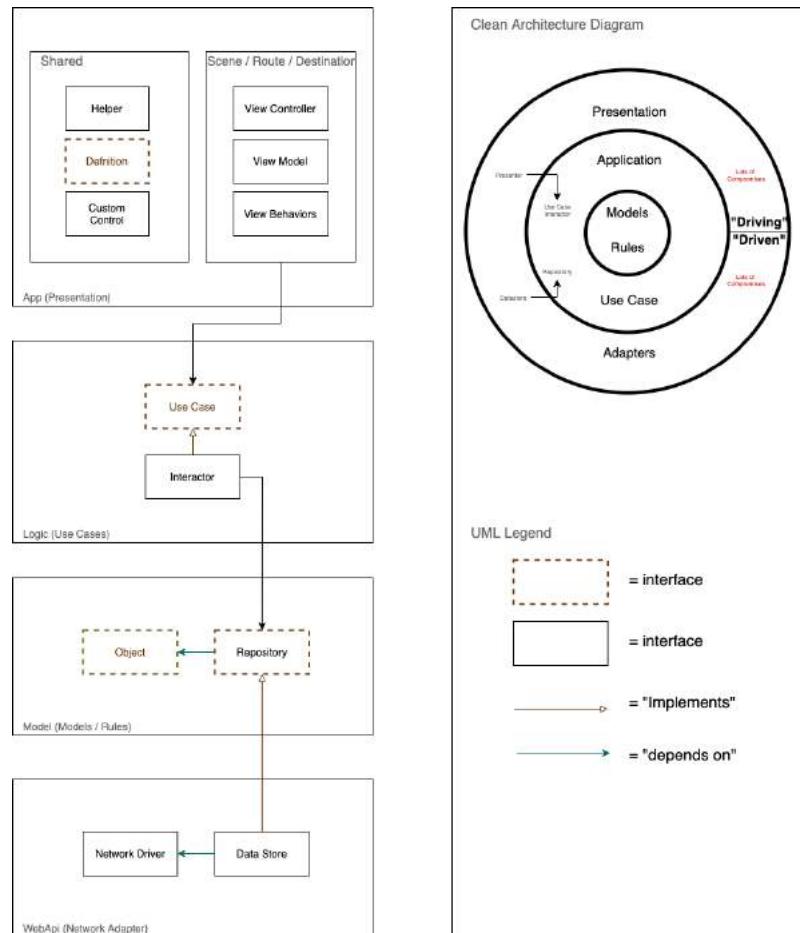
API Forward's reference for Platforms of Engagement is comprised of four (4) main components including a network traffic proxy, a content management platform, a services platform, and identity management. Each of these components may consist of one or many implementations in practice but are generalized as singular components for the purpose of this reference architecture.

- **Content Management Platform:** Manages the creation and modification of digital content for consumption across Systems of Engagement
- **Services Platform:** Manages the orchestration of services across Systems of Record, presenting API services for the consumption by Systems of Engagement
- **Proxy:** Manages the routing of traffic from a single point of entry to various Platforms of Engagement
- **Identity Management:** Provides security authentication and authorization of traffic through the services platform

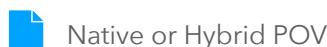
APPLICATION ARCHITECTURE

This diagram represents the reference architecture we use for mobile application development. It is based on SOLID principles and clean architecture.

View and presenter objects work as part of a typical model-view-presenter pattern. Models are simple isolated data structures. Views establish an app-specific interface to UI events and presenters orchestrate the interaction of these events with our application core.



NATIVE-FIRST EXPERIENCES



Historically VMLY&R has focused on a native-first development approach, using the first-class languages provided by Apple and Google.

Today, a native experience is developed with Swift and Kotlin, the first-class languages as outlined by Apple and Google, respectively. First-class languages minimize dependencies and provide a more sustainable, long-term solution for your product.



Introduced in 2010, Kotlin was officially recognized as an Android first-class language in 2017



Swift was introduced at WWDC in 2014. SwiftUI, Apple's declarative language, was introduced in 2018

HOW WE BUILD

VMLY&R uses the “Manifesto for Software Craftsmanship,” which strives for well-crafted software, steadily adding value and productive partnerships.

VMLY&R will apply the following development practices to deliver a well-crafted experience across touch points.

CLEAN CODE

VMLY&R mobility employs a clean code architecture that brings predictability and readability to all projects. This means that the experience is built with extendability and long-term viability as a primary objective.

PEER REVIEWS

Throughout the development cycle, when a piece of code is introduced to the project, it is peer reviewed. This means that while the experience will have dedicated mobile developers, all the VMLY&R mobility team members, from Kansas City to Krakow, are active in reviewing the project.

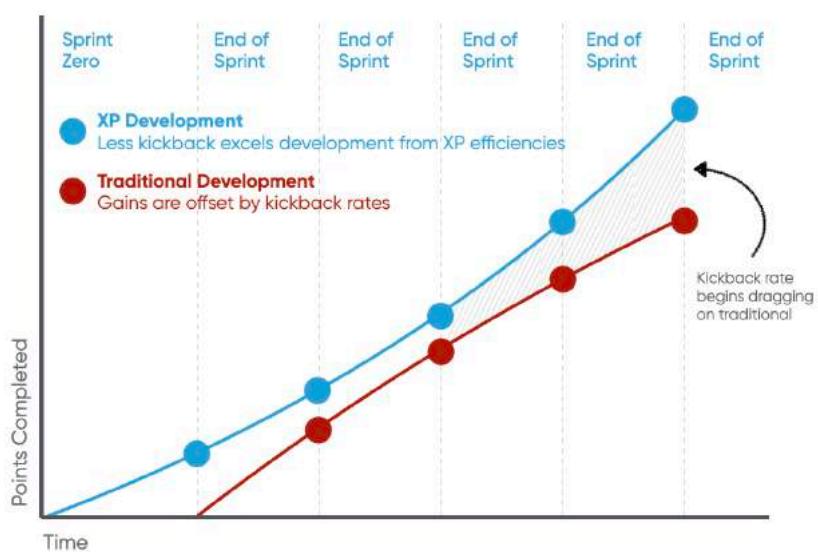
CONTINUOUS INTEGRATION

We'll continuously build and test the complete product to provide confidence in the initial release. Each project will use an integrated pipeline to run automated tests and inter verification on each branch submitted as a pull request.

STREAMLINED EXECUTION

XP impact for current VMLY&R client includes:

- 10-day-plus gain on design approvals
- 2 times response in points completed per sprint
- 3-5% kickback rate on stories/sprint
- 0% overage impact on burn-down





FROM
HANDSHAKE  TO **HANDHELD**



CONSTRUCTION: UNITED RENTALS
IT'S A BILLION-DOLLAR PROBLEM
AND THERE WASN'T A TOOL
POWERFUL ENOUGH TO FIX IT

CHALLENGE

Managing a fleet of construction equipment is the single biggest headache for site managers, general contractors and foremen in the industry. Down equipment, unused equipment and poorly managed fleets account for 30% of profit loss in all construction jobs.

SOLUTION

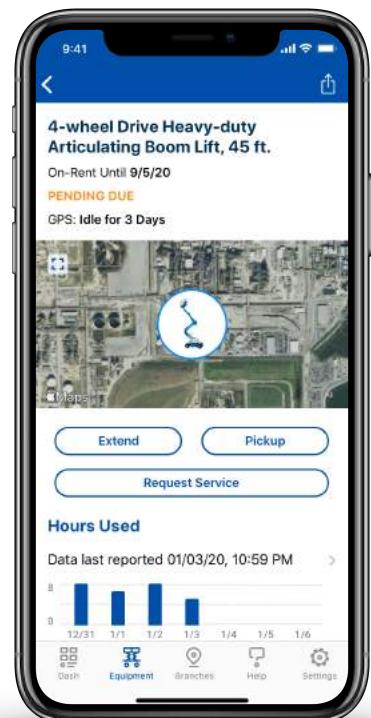
Driven by an active emerging technology work stream generating prototypes from delivery tracking, to on-site safety and augmented reality the United Rentals mobile app made it easy to rent, track, service, and control massive equipment fleets, enabling an industry with razor-thin margins to be more efficient and cost-effective.

We didn't simply create an app; VMLY&R was responsible for the creation of an AWS based, highly performant API to modernize United Rentals future technology efforts In which, the native apps were the first consumers of this new way forward for United Rentals.

66%
YOY increase in revenue

28%
Increase in new customer acquisition

4.7
App Store rating



vacations kids will
FROM
**PARENT
REVIEWED**

Google Search



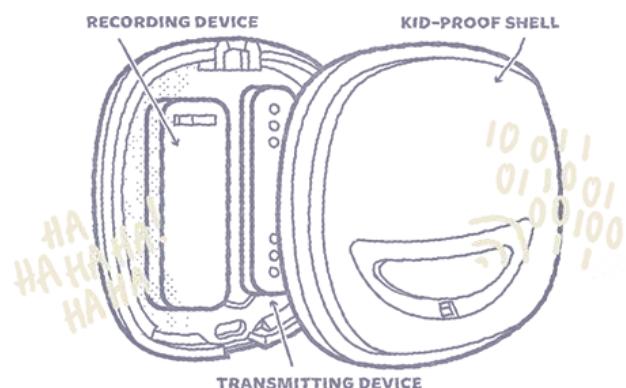
TO
**KID
REVIEWED**



ENTERTAINMENT: TENNESSEE TOURISM
**IDENTIFIED AN ENTIRELY NEW
TRAVEL REVIEW METRIC – LAUGHTER.**

We created a first-of-its-kind wearable device that measures laughter and excitement to determine how much fun kids have in Tennessee.

We put the devices on hundreds of kids across 31 locations in Tennessee. Equipped with a microphone, GPS technology and cloud computing, the device recorded audio samples in 10-second increments and sent them to a neural network, where artificial intelligence (AI) software determines if a sound is laughter.



2M+
Data points
analyzed

1.6M+
Seconds of
laughter

\$40M
Direct hotel
revenue

235M
Earned
impressions

TESTING

Quality Assurance and User Acceptance

FROM DEVELOPMENT INTO THE HANDS OF USERS

The VMLY&R AQ team leaves no stone unturned. Through automated test scripts and complex user stories, we work with development and creative to identify gaps and modify to increase performance and usability.

In this section we will address:

HOW WE TEST

Development driven testing guides applications through a multi-tiered approach.

VALIDATION METHODS

Relying on platform standards and real-user responses allow us to maintain quality practices that fit every mold.

HOW WE TEST

With nearly 200 million-plus mobile devices in the United States, support for unique/specific devices is no longer a best practice or a maintainable effort.

At VMLY&R, we are committed to the Shift Left approach to development testing by embedding quality assurance in all stages of the development life cycle.

This ensures that any issues are caught as early as possible, reducing the cost of remediation and ensuring high-quality mobile applications are delivered to the end user.

1. DEVELOPMENT-DRIVEN TESTING

To ensure a high level of testing is incorporated into the development process, VMLY&R will use:

- **Unit Testing**

Test-driven development at VMLY&R follows the "Red, Green, Refactor" approach creating unit tests for business logic built into the mobile applications.

- **Integration Testing**

As this mobile application will be consuming APIs for most of the features, VMLY&R will use integration testing against key API methods.

2. FUNCTIONAL TESTING

Functional testing is carried out against test scripts based on the requirements for each feature in the mobile application. The goal is to mimic an end user experiencing the mobile application, but also to uncover any underlying issues that may be present. There are numerous layers to the functional testing VMLY&R carries out, but the following test execution will be performed during functional testing:

- Component/Widget Testing
- Integration Testing
- System Integration Testing
- System Testing/End-to-end Testing
- Regression Testing
- Production Smoke Testing

VALIDATION METHODS

Self-qualification is the enemy of quality, so ensuring the experiences are built for the members puts us in the best position.

Executed Beta Testing Plan



3. OS SUPPORT

VMLY&R recommends support for iOS be current version, minus one at the time of the agreement (iOS14 and iOS13 after September 2020). iOS 13 accounts for 92.5% of active devices. Android support should be target API 23 (Marshmallow), which captures 89.3% of Android users as reported by Google.

CONCEPT TESTING

- **Approach:** Agile and informal interviews to gut-check big ideas in low fidelity before investing time and effort
- **Output:** Insights to guide updated design and functionality; revised prioritization

BEHAVIORAL STUDIES

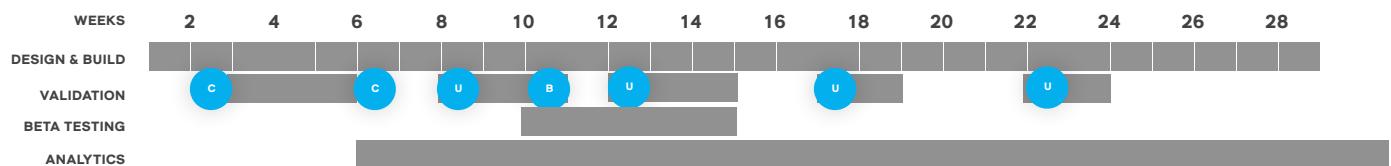
- **Approach:** Engage users over several days for an understanding of their behaviors, thoughts and feelings about how the product fits their life
- **Output:** Insights to build features that get adopted

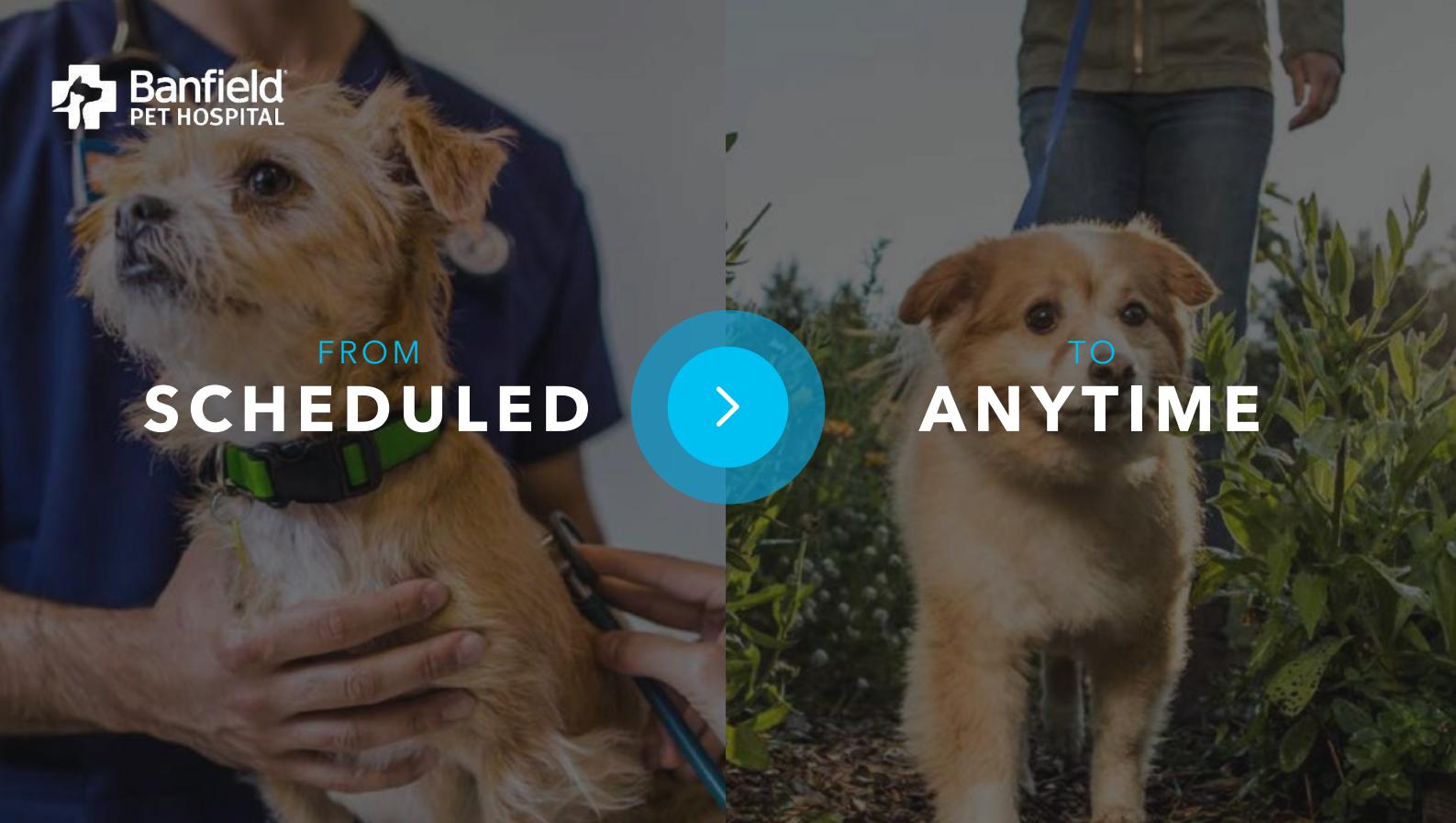
USABILITY TESTING

- **Approach:** Formal interviews with high-fidelity designs to gain insight on ease of use; ability to functionally solve a user's problem
- **Output:** Thorough evaluation to reduce risk on critical features

ALPHA/BETA TESTING

- **Approach:** Deliver the product to the user to use in real life; see what they do when no one is looking
- **Output:** Analytic and narrative feedback for what technically and functionally does and does not work





FROM
SCHEDULED > **ANYTIME**

PET CARE: BANFIELD PET HOSPITAL
**MANAGE YOUR PET CARE
ANYTIME, ANYWHERE.**

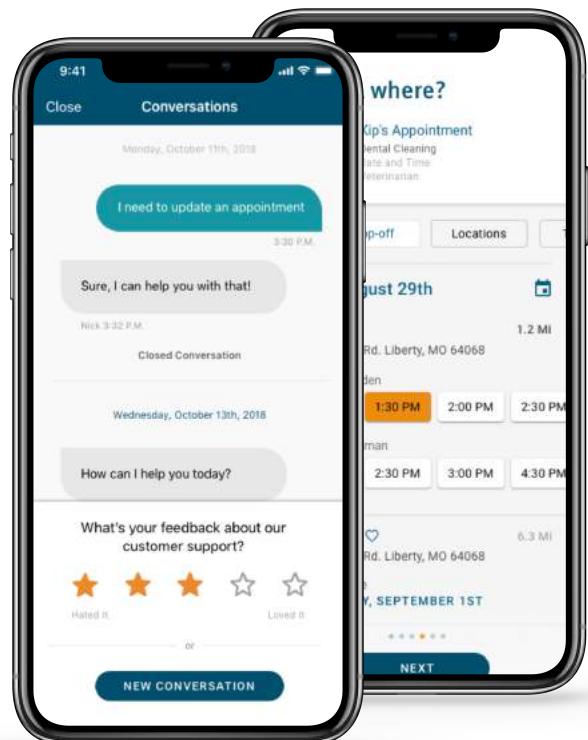
CHALLENGE

Across 1,000+ locations, 3,600 veterinarians and 17,000 associates, Banfield Pet Hospitals wanted to expand their digital offering from expected online appointment scheduling to a trusted resource and centralized health record for America's 150+ million pets.

SOLUTION

Pet owners have come to expect 'always-on' from their own healthcare providers, so we extended that to their furry loved ones. Now, beyond appointment and pet management, owners have the ability to review and revisit appointment details such as vitals, notes, prescribed medicines and vaccine records. Owners are encouraged to continue to track pet health with a Pet Timeline Tool that manages wellness plans, weight trends and shareable records.

That's not all, with the addition of 24/7 veterinarian support with Vet Chat, owners now have the ability to reach out to one of Banfield's 3,600 registered vets for peace of mind.



PRODUCT LIFE-CYCLE

Acquire, Engage, Retain

BUILDING AN EXPERIENCE IS LESS THAN 50% OF THE WORK.

Once the product is live, the work isn't over. Finding and maintaining a user base is all part of the strategy of lifecycle management.

In this section we will address:

OWNERSHIP

Getting to market is easy, knowing how to adjust to what you thought was right is an always-on job.

ACQUISITION

Find the right way to get the user that will receive the most value from the experience.

ENGAGEMENT

Create the appropriate level of engagement to talk with users at the right time for the right reasons.

STORY-TELLING

Determine how to relay the success and opportunities to the multiple organizational layers that need to know that information

OWNERSHIP

The first day we launch should be the worst day of that touch point's existence.

Touch point ownership is about the relationship with the user, not the relationship with the roadmap.

The touch point owner works across stakeholders and users to align what makes most sense for the user, business, and brand – in that order.

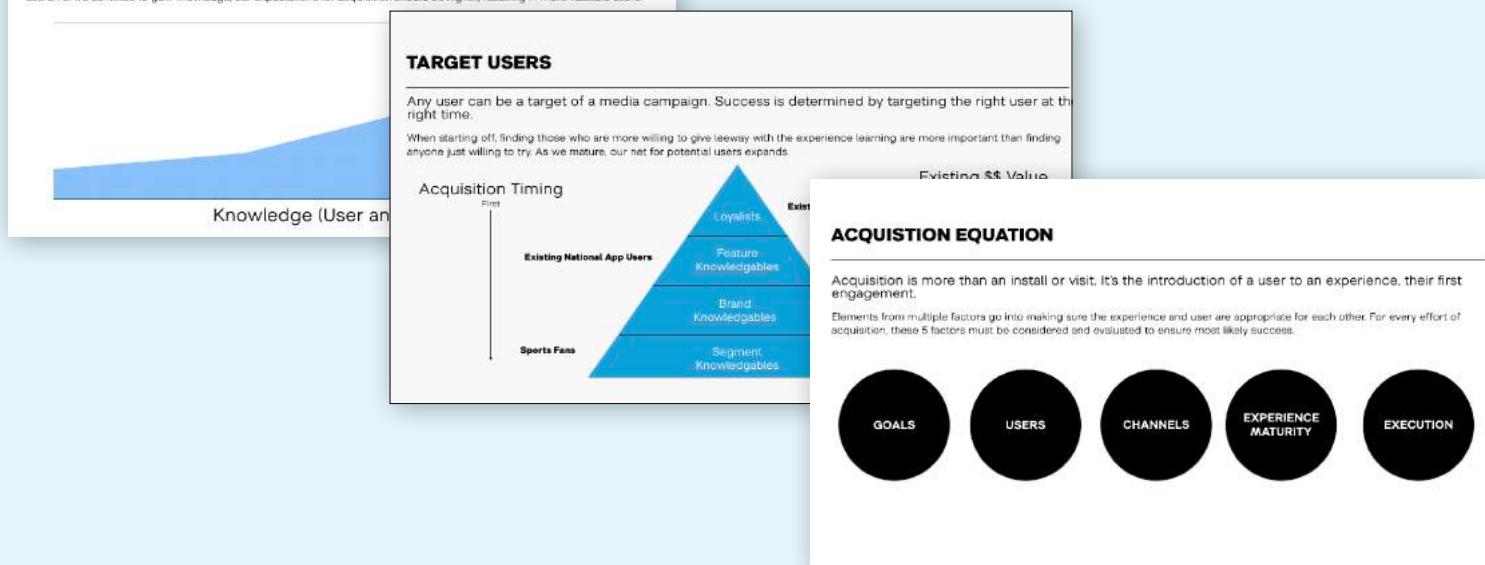
ON-GOING P.O. ACTIVITIES:

- Backlog Grooming
- Benchmarks/KPI Setting/Adjusting
- Team Alignment/Product Increment Meeting Representation
- Acquisition Planning – Organic and Media
- Messaging Playbook
- In-product Messaging Plan/Execution
- Cross-channel Messaging Planning/Execution
- Reporting – Working Team/Executive
- Prototyping
- Concept Testing
- App Store/Distribution Optimization
- Customer Review Management
- Competitive/Feature Expertise
- Touch Point Representative for all Features/Executions
- Partnership Relationships/Auditing

EXPERIENCE MATURITY

Every experience wants as many users as they can have on day 1. However, the experience is at its worst if we want to spend our credit with every user at that point?

With churn rates being very high for digital properties, our acquisition efforts should align directly with the knowledge we have of users. As we continue to gain knowledge, our expectations for acquisition should be higher, resulting in more valuable users.

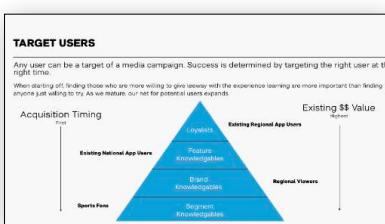


ACQUISITION

- Sample Acquisition Plan
- Sample ASO Plan

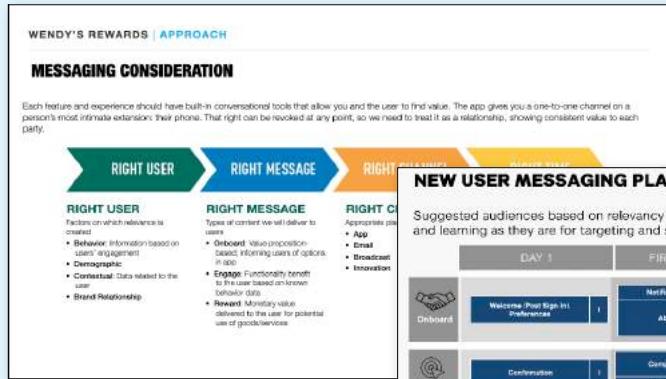
FINDING THE RIGHT USERS

- Acquisition Elements – Ensuring we're setting up the right users for success
- App Store Optimization – ASO playbook outlining rollout and adjustment over time/releases – finding the right users at the right time – monthly roadmap and reporting
- Segment creation and value
- Owned governance/tracking/testing – working with owned channels on consistent execution and tracking
- Campaign planning/governance – media partners, goals, execution ownership, rates, customer value
- Creative best practices/governance



MESSAGING CONSIDERATION

Each feature and experience should have built-in conversational tools that allow you and the user to find value. The app gives you a one-to-one channel on a person's most intimate extension: their phone. That right can be revoked at any point, so we need to treat it as a relationship, showing consistent value to each party.



NEW USER MESSAGING PLAN

Suggested audiences based on relevancy to product capabilities. These are just as much for testing and learning as they are for targeting and sales.

	DAY 1	FIRST 7 DAYS	FIRST 30 DAYS	SECOND 30 DAYS
Onboard	Welcome (Post Sign-In) / Preferences	Notification Setup / About "We"	Unused Feature / LS	How's It Going / SE
Engage	Confirmation / Complete Profile / Usage Outline			
Reward		Completed Profile / LS	Multiple Transactions / Referrals	

Types of Messages: Push, Email, Broadcast, Innovation

WENDY'S REWARDS | RIGHT CHANNEL

CHANNEL MIX GUARDRAILS

Messaging Capability	PUSH NOTIFICATION	IN-APP EXPERIENCE	HOME PAGE LTO	EMAIL	SOCIAL/MEDIA
Execution Tool	Salesforce	Firebase	Custom System	Salesforce	Various
When to Use	Immediate action needed, worthy of interrupting someone's day	Contextually relevant info to in-app experiences	Info consumed at the leisure of the user	App owners are unnecessary or not available	Reinforce existing information and drive to behavior
When to Avoid	Perceived as intrusive, >50% of notifications are ignored and be forgotten	Not seen by users, reactive based on in-app engagement	Not customeristic, traditional "marketing" channel	Non-owned environment, lower engagement, not immediately corrective (e.g. "lost")	Costs, drowned out
Examples	<ul style="list-style-type: none"> Engaging Offer Unified Offer Time Saving Action Known Rewards Process 	<ul style="list-style-type: none"> Feedback Career New Feature Invited Direct/Onboarding 	<ul style="list-style-type: none"> Publication Announcements New Unreleased Capability 	<ul style="list-style-type: none"> Lapsed User Abandon Cart Cross-Channel Engagement 	<ul style="list-style-type: none"> Finish Order Other to Win Order Lapsed User

Message Delivery is an equal part of effectiveness as words.

ENGAGEMENT

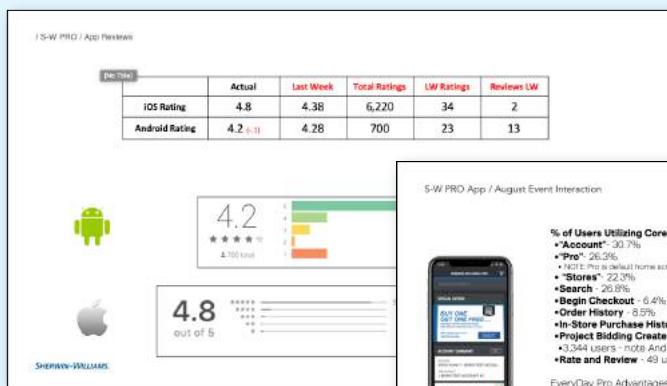
KNOW THE USER, ENGAGE THE USER, KEEP THE USER

- Engagement Planning – Planning messaging across channels
- User journey mapping – Identify what the user could do and our opportunities for engagement (messaging, data)
- Campaign alignment – Supplementation of behaviors
- User life cycle mapping – Day 1, week 1, month 1 relationship mapping
- Governance outline – How we use each channel and test to determine value
- Creation of a messaging playbook
- Creation of engagement stories for development – triggers, thresholds
- User profile contribution/development

Sample Messaging Playbook



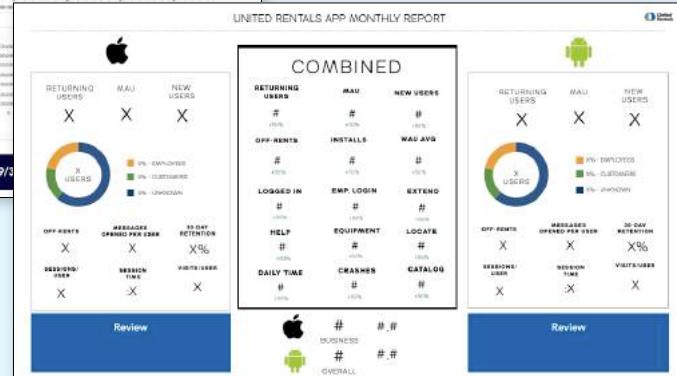
	Actual	Last Week	Total Ratings	LW Ratings	Reviews LW
iOS Rating	4.8	4.38	6,220	34	2
Android Rating	4.2 <small>↑.11</small>	4.28	700	23	13



SHERWIN-WILLIAMS



SHERWIN-WILLIAMS

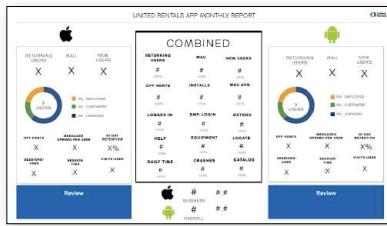


STORY-TELLING

TELL THE STORY, DRIVE ACTION AND KNOW THE LANGUAGE OF SUCCESS/OPPORTUNITY

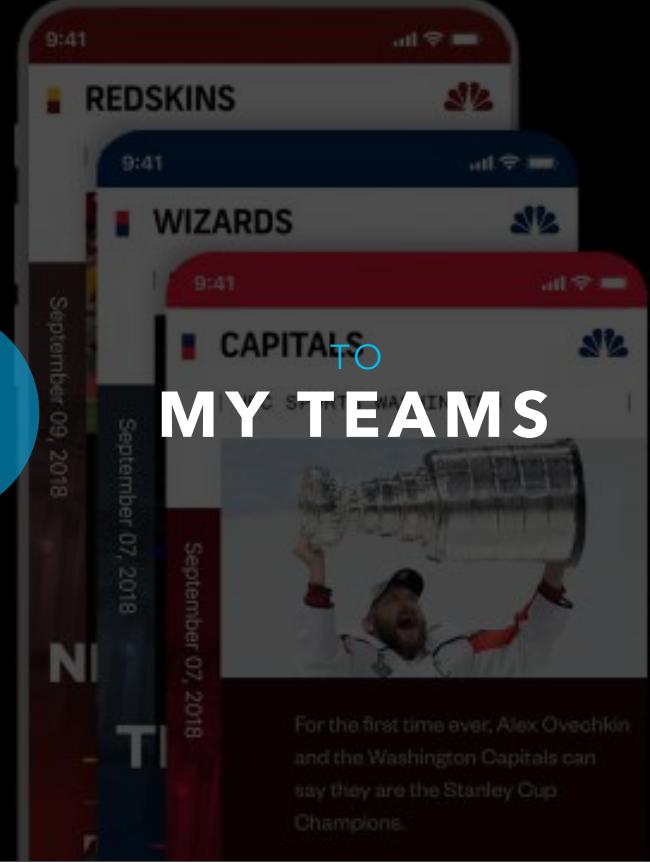
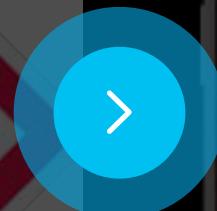
- Expectation Alignment – How we ensure the stories we tell about the app enable proper action
 - Goals (brand, user, feature, business)
 - Working team report
 - Exec-level report
 - User profile segmentation (channel, duration, activity, demo)
- Customer feedback – Understand the sentiment of users
 - Regional insights
 - App Store reviews – record, respond
- Organizational comms – Weekly engagements across stakeholders – marketing, content, development, exec, field to align vision
- Behavioral hypothesis – Ongoing assumption testing

Sample Monthly Report





FROM
LEAGUES



For the first time ever, Alex Ovechkin and the Washington Capitals can say they are the Stanley Cup Champions.

ENTERTAINMENT: NBC SPORTS REENGAGING USERS TO PROMOTE STREAMING CAPABILITIES

CHALLENGE

NBC Sports has the MyTeams app, which focuses on the teams from its six regional sports networks. With the start of baseball season, it wanted to make a splash, reintroducing the streaming capability of MyTeams to users.

SOLUTION

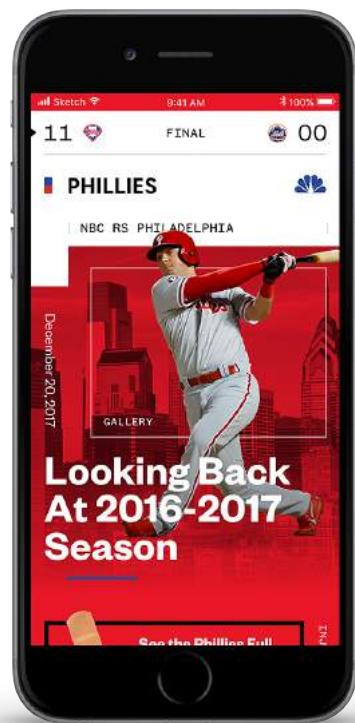
VMLY&R proposed a cost-per-install, **45-day campaign** so the performance wasn't on impressions but actual installs. We talked with over 20 networks and narrowed it down to four, focusing on paid search, OEM stores, and networks.

We created six separate campaigns, one for each DMA, focusing on the strengths of each market (baseball, NBA playoffs, NHL playoffs) results in **86,000 installs** reaching **#6 in iOS** and **#7 in Android's "Sports" categories**.

46%
Increased daily uniques

↓ \$4
Cost Per Install

83%
Increase organic Android installs



ADDITIONAL CASE STUDIES



FROM
**MEDICINES
& RESOURCES**

TO
**BETTER PATIENT
OUTCOMES**

PHARMACEUTICALS: PFIZER
PFIZER CONNECT PROVIDES HCPS WITH
STREAMLINED ACCESS TO PFIZER'S
EXPERTS, PRODUCTS AND SERVICES.

CHALLENGE

To transform Pfizer's role with healthcare professionals to one of most valuable partners by equipping them with best-in-class digital experiences to deliver on better patient outcomes.

SOLUTION



Orders: Seamless online ordering and subscription of starter packs and supporting materials, delivered all in one box.



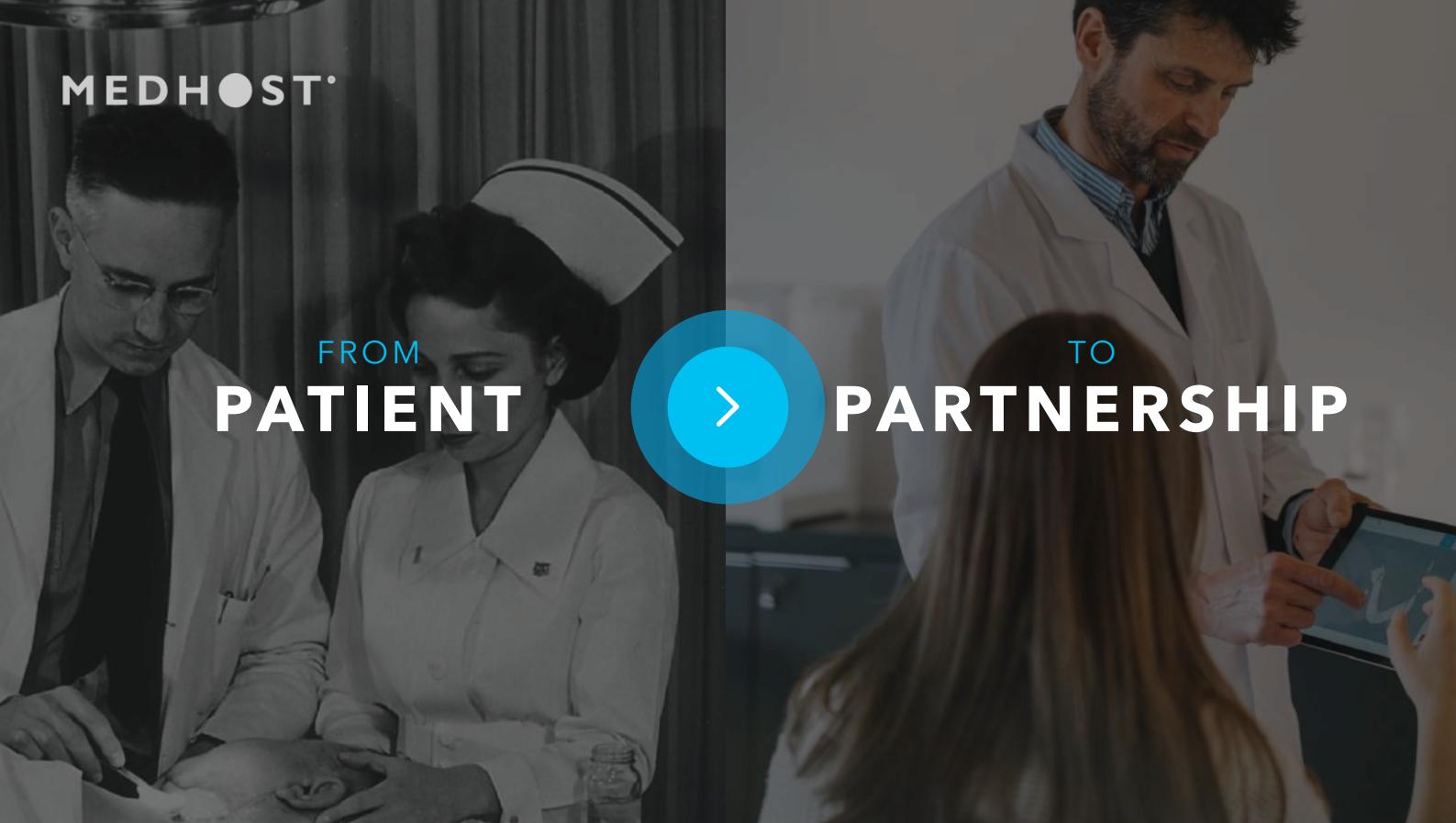
Support: Deliver personalized patient material and support, directly to a patient's smartphone.



Expert: A central touch point that enables healthcare professionals to chat with Pfizer in real time and have any question answered.

The screenshot shows the Pfizer Connect mobile application. At the top, there are navigation tabs for 'Support' (which is active), 'Discover', and 'Browse'. Below this is a search bar with placeholder text 'Product title' and a 'Connect with us' button. Underneath the search bar are links for 'My conversation' and 'Frequently asked questions', along with a 'back to conversations' button. The main area features a support conversation between a user ('Me') and an expert ('Stan'). Stan has just forwarded a question about Varenicline to a Chantix® expert. The user can ask a question and send it. To the right, there is a news feed titled 'Discover' with various articles. One article is visible with the headline 'Can my patient use Varenicline if they're taking medication to regulate blood pressure?' and another snippet about managing menopause.

FROM
PATIENT > **PARTNERSHIP** TO



PATIENT CARE: MEDHOST
A MORE HEALTH-AWARE CONSUMER &
ENCOURAGE PATIENT/PHYSICIAN
COLLABORATION

CHALLENGE

MEDHOST is a mid-market provider of enterprise resource management software and systems to hospitals and clinics. A well-established B2B brand in healthcare. MEDHOST needed to differentiate itself with a patient portal offering (personal electronic medical records) that qualify facilities for Medicare and Medicaid Services (CMS) Incentive Programs under the Meaningful Use specifications.

The challenge was to build a health and wellness application to transform consumers into patients and ultimately engage electronically with MEDHOST's hospital clients.

SOLUTION

With a driving goal to encourage patient/physician collaboration beyond the domain of the hospital, VMLY&R developed a mobile app for YourCareEverywhere. The YCE app leverages emerging on-device fitness technology and an "always-on" approach to health and wellness.

A smart, predictive mobile app, the experience delivers access to electronic medial records, calendar, and fitness expectations, as well as archiving, transmitting, and alerting consumers/patients and their physicians about health-related events.

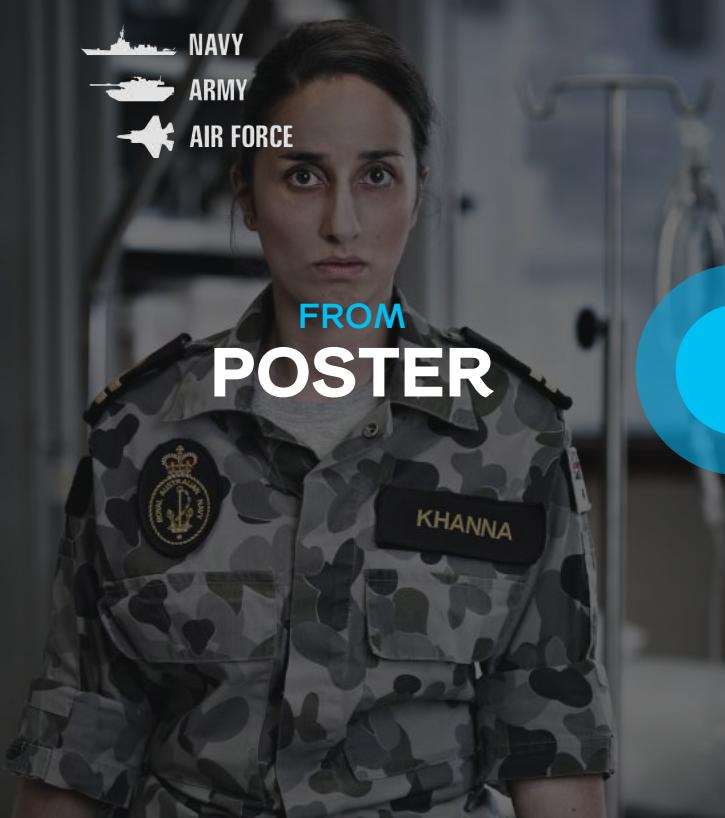




FROM
POSTER



TO
**INTERACTIVE
RECRUITMENT
TEST**



MEDICAL/RECRUITMENT: AUS DEFENCE **CREATING MEDICALLY DIAGNOSABLE ADVERTISING**

CHALLENGE

Recruit medical students worthy of an Australian Defence University scholarship. But how do you find the best?

SOLUTION

Mobile Medic is a world's first medically diagnosable advertising created for the Australian Defence Force.

It consisted of an augmented reality app with which medical students could perform diagnoses on potential patients with a variety of different diagnostic tools available to them, including CT scanning, angiogram, stethoscope, ECG, and ultrasound on real Defence Force scenarios. Users simply held the app in front of outdoor ads that served as the augmented reality triggered images for the medical test. Prospective recruits used the app to "diagnose" a patient's billboard. The ad functioned as an entrance exam.





FROM
**TRAIN
STATION**

TO
**HISTORY
LESSON**

ENTERTAINMENT: UNION STATION KANSAS CITY **MAPPING THE HISTORY OF A 100 YEAR OLD BUILDING**

CHALLENGE

To celebrate their centennial, Union Station Kansas City presented the goal to deliver a mobile experience that brought the past alive with an immersive, interactive tour of Union Station. Revealing a rich history of iconic celebrities and events, VML wanted to allow guest of Union Station witness these encounters as if they were happening for the first time, right in front of them.

SOLUTION

VML built a beacon proximity-aware, augmented reality experience that leveraged technology from Google, Metaio, Gimbal and Moblico. Packaging 11 reenactments of historical and celebrity experiences from Union Station's 100 year history across 10 locations with the building, and establishing an "always-on" tool for Union Station to measure foot traffic across the building, as well as segment and selectively message guest for future events.



FROM
**FLEETING
MOMENTS**

TO
**BRAGGING
RIGHTS**

17

28.

Top speed (km/h)

SPORTS: RIP CURL

**THE WORLD'S FIRST DEVICE TO REALLY
INSPIRE THE GLOBAL SURFING
COMMUNITY TO CHALLENGE ITSELF**

CHALLENGE

Since 1969 Rip Curl has been creating innovative products to aid surfers in their search for the perfect wave. Surfers spend most of their lives waiting for the planets to align, and when they do, the moment is over almost as soon as it begins. VML wanted to figure out how we could change this, capturing the moment in a tangible, reliable and shareable thing that could live beyond the waves.

SOLUTION

We built a mobile and desktop app that syncs with the GPS Search watch or Apple Watch, translating the raw data of time spent in water and speed and distance traveled into defined periods of paddling, waiting and surfing. This is instantly mapped out onto full-color maps, with tide and weather conditions automatically pulled in. All data recorded anywhere in the world is stored and displayed, creating a connected surfing community unified by their love of surfing and the desire to challenge themselves and their friends to do better next time.





FROM
**CHASING
CUSTOMERS**  TO
**CUSTOMER
FIRST**

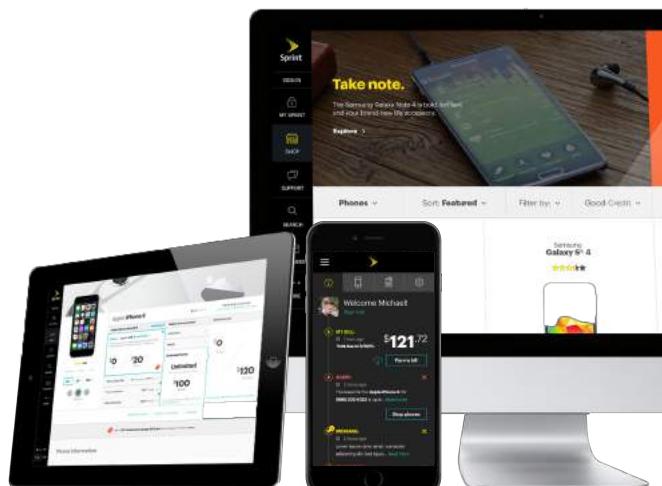
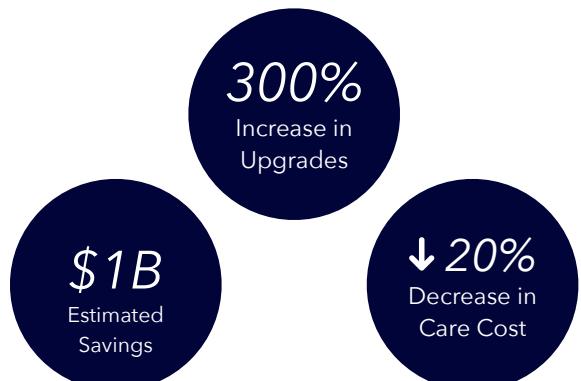
UTILITIES: SPRINT **EFFORTLESS ACCOUNT MANAGEMENT**

CHALLENGE

New ownership at Sprint realized that the path to profitability wasn't mindlessly chasing switchers, but ensuring profitable sales and customer care throughout the enterprise. The digital transformation and the ask were massive – build a customer-first digital ecosystem for demographics that included anyone old enough to use a phone.

SOLUTION

VML completely reimagined Sprint's digital ecosystem to make every task perfectly simple and adaptable across countless platforms and devices. Bold creative enhancements and powerful data insights drive the right channels, products and services to the customer. Our design and implementation teams worked side by side with Sprint teams to create native apps on Android and iOS, and developed for web, email, and chat for every possible customer device. Below the surface, our service design and implementation teams created a lightweight orchestration layer designed around customer expectations rather than system internals to enable deeper experience changes across legacy channels like intelligent voice response (IVR), retail kiosk, and retail point of sale.





THANK YOU!