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Analytics-Driven Product Design

accenture consulting
ANALYTICS-DRIVEN PRODUCT DESIGN

At a number of universities, student tour guides proudly describe how their campus sidewalks were not originally paved until students had worn their preferred paths in the grass. Today, it is clearly smart to use a similar approach when building digital applications: first see how people are using the application, then shape it to what it is they like and understand.

In a world dominated by applications, understanding customer usage is increasingly critical to delivering the best possible user experience. Simply ensuring your application is up and running – the purview of a network operations team’s traditional processes and tools, which focus on platform health – is no longer enough to satisfy increasingly demanding customers who expect applications to be simple and intuitive.

Analytics-driven product design provides a customer-focused lens previously unavailable, which extends beyond web and mobile applications and which can also be applied to applications running on any connected hardware including media/set top boxes, gaming consoles, remote controls, IoT devices and more.

Analytics-driven product design yields answers in such areas as:

**Experience Health:**
- Is each feature reliably available and error-free?
- Does each product feature work as it was designed, and is it friction-free? Are customers getting stuck or dropping out at some point in the process?
- How do API response times impact user engagement, and what are the right SLAs for each? Does, for example, user engagement fall off a cliff if response times are greater than X milliseconds?

**Feature Usage:**
- Just how are customers using applications? How do users flow through the app? Where do they enter? With what features do they typically engage? Where do they leave the app? See Figure 1.
- What features are most used? Which features should be at the forefront, and which should be deprioritized? See Figure 2.
- Product and feature value: Do products provide customer and/or company value? Are user experiences worth the investment?
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• Product improvements: Is data being used effectively for improvement? Is the feature roadmap targeting areas of improvement for health, usage and/or value?

• Enhanced product maintenance and operations: What new operational metrics should be provided to operations teams? How can I automate operational components to make the product more resilient?

Answers to these questions have tremendous value in identifying product requirements, making informed product decisions, and establishing roadmaps to arrive at the best customer experience.

In the past, companies didn’t have much visibility into how good or bad the customer experience was. Today, given the wealth of available data, the mission-critical nature of the benefits it provides, and the new cloud-based big data technologies that make it possible to deal with this mountain of information, it makes sense to take advantage of real-time feedback that can provide a competitive edge. The key to doing so is effective use of customer service analytics, which, in today’s data-intensive environment, can capture much more useable information than before in terms of how customers are using and responding to a given application.

Accenture has experience instrumenting & analyzing data from multiple sources:

- Mobile & Web Applications
- Wi-Fi Routers & Access Points
- Cable / DSL Modems
- Set Top Boxes
- Video Players
- IOT Devices

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Areas of optimization for user experience can be derived from understanding customer behavior, such as choke points.

**Case Study:** One operator found out that the vast majority of their customers didn’t know the username associated with their account, resulting in low usage. They fixed this by adding a log in with a Facebook/Google option.
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FIGURE 2. WHAT ARE MY USERS DOING? SAMPLE VIDEO APP VISUALIZATION

Visualize your data to understand which features are being used or how content is being consumed.
Capturing the right customer use data for analysis, however, poses a number of challenges. It requires effective tagging or instrumentation of the application. The tagging must capture the right events and KPIs, based on the analytics use cases in question. If companies don’t capture the right data around what users are actually doing, they can’t adapt to it.

Secondly, given the multi-platform nature of modern applications, it is critical to tag applications using a uniform set of events that will work across all software and hardware platforms, including Web, native iOS and Android applications, and television to allow for meaningful, apples-to-apples comparisons of user experience.

The sheer volume of data generated by this new paradigm also poses a challenge. With the traditional model, companies would only log a few events during a customer interaction. Now, however, every click and every API response time is logged, resulting in hundreds of potential events for use analysis – leading to a potential data overload.

Finally, to maximize the value of the usage data being captured, it is essential to place it in a larger context by linking it to other types of relevant data, such as customer segmentation, billing data and performance data. How are soccer moms using a given app, versus teens? Can the app be tailored to each group’s needs? Can network performance data also be marshalled to understand how the network is affecting customer use, as distinct from the characteristics or features of the app itself?
OVERCOMING CHALLENGES WITH ACCENTURE ANALYTICS

FIGURE 3. WHAT ERRORS ARE IMPACTING MY USER EXPERIENCE?

Understand what errors are occurring in real time and see their impact on user behavior.

Case study: We determined that users stopped using a video application if buffering went above 1% or if API response times exceeded specific thresholds. These insights were used by the client to set their platform SLAs.
WHY ACCENTURE?

Accenture’s unique approach to applying analytics to product development blends our deep product knowledge with our extensive analytics and technology know how. Our solution helps clients develop actionable business insights by enabling them to effectively capture, understand and optimize their end user’s experience.

To illustrate, jointly with a client, we leveraged analytics to understand that if a user did not login to their application in the first week, the odds of them ever using it dropped to almost zero. As a result, the client simplified the login process and developed a comprehensive communication plan. In another case, we determined that users stopped using a video application if buffering went above 1% or if API response times exceeded specific thresholds. These insights were used by the client to set their platform SLAs (service level agreements) to ensure the best possible experience.

Accenture analytics-driven product design unique advantages include:

• Deep Product Knowledge: Accenture has product experts and experience in applying analytics to multiple areas including mobile and web applications, Wi-Fi routers and access points, Cable / DSL modems, set top boxes, video players and IOT devices.

• Cross-platform instrumentation. While many solutions do a good job of tracking web applications, another question still needs to be asked: What about other platforms, such as native mobile applications? The Accenture analytics solution contains four ready-to-use client libraries to quickly instrument all variations of the application, including Javascript for Browser-based applications, Java for Android, Swift for iOS, and BrightScript for Roku.

• We provide a data model library. To enable cross-platform comparisons, each of our libraries supports the same feature set, reflecting a consistent data model that captures more than 250 attributes and 35 application events that are important for application usage metrics.

• A scalable data pipeline that can handle all these events in real time. The Accenture analytics system can scale to support even the largest applications. Our platform currently processes more than 1 billion transactions per day, assuring the capacity to handle the volume required for effective experience-based analytics. Accenture can either offer the platform as a service, or assist operators in standing up their own.
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• The data infrastructure that can aggregate all the data sources to allow for multi-dimensional analysis, storing finished events in a common data model that be used for analysis and reporting via Hive, Tableau or other dashboard technologies.

• Out-of-the-box dashboards and alerts. Accenture analytics helps enable not just historical reporting, but also a real-time dashboard and operational alerts, tracking active devices, active sessions, failure counts, API errors/response times and more—all out-of-the-box. See Figure 3.

• Skill sets in open-source technologies: We created a deep bench of experience practitioners with real-world experience leveraging open-source technologies for capturing, enriching, analyzing and viewing both structured and unstructured data.

• Best-of-breed technologies: Our solution makes it possible to choose the best technology providers for any given function. Any analytics module can be replaced with the best-of-breed technology as new and better-performing technologies emerge on the market.

As with the college sidewalks, for maximum value in addressing user needs, providers need to look at the actual experience users are having; and to do this, they need to instrument the application according to that experience. Accenture analytics-driven product design, supplemented by our deep and broad experience in analytics, make this type of insight not just possible, but achievable.
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