Best Practices to Scale Your UBI Program: Avoiding the top 7 telematics connectivity mistakes
Usage-based insurance (UBI) programs have become the core of strategic plans for most insurance companies over the last several years. With the increasing use of telematics, we now have sophisticated technology to gather and monitor vehicle data and driving behavior that communicates back rich and detailed information.

When launching early UBI programs, companies focused on six core strategic questions:

- How to collect, aggregate and normalize driver data?
- What kind of data to collect and in what format does that data need to be in?
- What minimum requirements are necessary to integrate telematics into your operations and core IT systems?
- How do you support UBI customer care—particularly if the device is aftermarket?
- What devices are compatible with your policy’s vehicles?
- How should the initial pilot program be structured?

For many insurance companies, the question now is how to expand existing telematics-based product lines. And that can prove just as complex as the initial decision to launch one.

What if you had the ability to plan it all over again? What would you do differently? Think back when you were planning your UBI program. Of all the business, operations and technology requirements you considered, which seemed like details at the time but have now become serious issues that could slow expansion and lower program profitability?

Jasper recently spent time with customers, network operators, and analysts in the connected car ecosystem to gain insight on some best practices learned through real implementations. Jasper works with 1,500 global customers that include almost every major player in the connected vehicle ecosystem, including GM, Ford, and Toyota, and supports major solution providers like OnStar and Delphi. In addition, major insurers and telematics providers like Baseline Telematics relies on the Jasper platform to lower the costs of running their UBI programs by as much as 80% and scaling their programs from 5,000 to 500,000 subscribers in months. It’s the companies in this ecosystem that are the market leaders in implementing and scaling UBI programs around the world.

Definition of Telematics

Telematics refers to the use of wireless devices and other back-end technologies to transmit data in real time back to an organization.
The result of our connected car ecosystem information sessions was a general consensus that connectivity and device management are two of the areas that have the greatest impact on scaling beyond a pilot program. Poor connectivity and device management can lead to higher support costs, unexpected overage charges and impede the ability to quickly scale.

Based on these informational interviews, we developed this list of Connectivity Mistakes in Telematics to Avoid:

1. Underestimating the need for automation
2. Miscalculating overage costs
3. Underinvesting in remote device management
4. Not realizing that connectivity lifecycle impacts adoption rates
5. Underestimating the need for preventative diagnostics
6. Not effectively planning for global scale
7. Not planning flexible business models

**MISTAKE #1:**
**UNDERESTIMATING THE NEED FOR AUTOMATION**

**WHAT YOU DON’T REALIZE:** You must monitor and manage daily 585 possible combinations of attributes associated with every OBD device you deploy.

A telematics-based service has three core elements, the devices that will be deployed in the field, the applications that run on them, and the mobile network you connect through. But these elements are not static. There is a very complex set of attributes and behaviors associated with each of these elements. These attributes and behaviors are constantly changing.

Attributes include things like the phases of that device’s lifecycle. You’ll need to constantly manage those lifecycle phases: manufacture, test, inventory, activation—all the way to end of life. Other attributes include rate plans. You need to procure, assign and potentially constantly re-assign the right rate plans to your devices. You need to monitor and control for attributes around data usage, including what kind of service each device is allowed to use. You need to monitor the ability of your device to connect through the mobile network in real-time. In basic deployments, there are at least 585 different combinations of attributes that you will need to manage in real-time for every device.

Let’s say your average device consumes 25KB per day, connecting no more than 8 times day. You may want to be alerted when active devices radically deviate from that pattern. Perhaps you want to have an alert sent to your telematics management dashboard on any device consuming more 50MB per day, connecting more than 50 times per day. And you might even want to take it one step further. Any device consuming more than 100MB per day, connecting more than 100 times per day should be de-activated because that device behavior is so drastically outside of the norm.
Data consumption is just one attribute. Data consumption on a daily basis is another. Awareness of where a device is in its lifecycle (activated, non-activated, retired, testing-mode, etc.) is a third. Setting a daily data consumption limit is a fourth. All of these variables are interdependent, and when you need to adjust even one variable, you have to do it in a specific sequence, and you have to adjust it in real-time.

**LESSON LEARNED: Automating all standard business processes is a must.**

Managing the attributes of 1,000 or 1,000,000 devices cannot scale if cannot automate their operations. You should consider the core attributes and the desired behaviors associated your devices, the applications that run on them, and the mobile network you use. Ensure that your operations team can automate the business processes associated with managing as many of those attributes as possible by building out automated workflow capability. To scale your program effectively, look to automate attributes and workflows in four major areas: device provisioning, security, subscription management, and usage monitoring.

Work with your IT team or find an IoT management platform that enables you to quickly and easily set business rules to monitor your devices and, if specific triggers occur, take appropriate action instantly and automatically.

Automating standard business processes will help you ensure that you maintain high-quality service delivery for your customers. It can also potentially increase the margins of running your IoT service by lowering support costs and preventing overage charges.

**MISTAKE #2: MISCALCULATING OVERAGES**

**WHAT YOU DON’T REALIZE:** Overage costs can quickly add up if you lack real-time data usage monitoring, proactive alerts, and corrective action capability.

Mobile connectivity can add tremendous value to your telematics services. Realizing this value is possible only if you can run your business at the highest margins possible.

One key area for meeting expected cost margins is the monitoring and management of network data usage through your mobile network. How can you ensure that you are able to collect, monitor, and manage critical data you need, while continuing to manage ongoing network costs and potential overage fees?

Network data usage can quickly add up as part of ongoing costs. But there’s no bypassing data. The continual two-way exchange of data between you and your OBD device is the very heart of your UBI program. You need ongoing data connectivity and data management so that you can:

- See if your critical devices have network coverage and troubleshoot issues.
- Adjust connectivity usage from one to all your devices instantly to avoid overage charges.
- Identify real-time roaming and ability to move the device to a new rate plan that’s appropriate.

**Example Automation Capability**

Automatically deactivate a SIM when it reaches an alarming usage threshold because it's an indication of a problem with the device.

| Change the rate plan of a SIM based on its geographic location to limit roaming costs. |
| Push an API call to a telematics dashboard when a customer’s prepaid subscription is near expiration so you can push a top-up alert. |
| Push an API call to a telematics management system when a device connects more or less often than expected in a given time period to highlight a potential problem. |
| If a device exceeds its roaming caps, change the rate plan to one better suited for roaming. |
| Automating standard business processes ensures you’ll be able to maintain high-quality service delivery for your customers. It can also potentially increase the margins of running your IoT service by lowering support costs and preventing overage charges. |
Tell where each of your devices is, anytime, anywhere, without using GPS.

Ask your device to report its setup and running status.

This type of functionality ensures high availability and cost management. But it's hard to maintain constant monitoring, analysis and adjustment of appropriate rate plans to data usage manually.

**LESSON LEARNED: Automate rate plan assignment to lower overages.**

You need a way to automate both the monitoring of your devices’ data usage 24/7 and the ability to adjust rate plans in real-time to avoid un-planned overages.

But it's not enough just to just have reports for data usage and cost management. You also need the ability to make automated changes against rate plans as well. Make sure you can change a device’s rate plan when a business rule is triggered. For example, if a device uses more data than expected, ensure that you can automatically switch it from your standard rate plan to a premium rate plan. The premium plan may have a higher subscription fee, but it could help eliminate even more costly overage charges than if the device were to remain on the standard plan.

Be sure you can view real-time usage reports. This is one of the best ways to analyze and track network costs. Usage and traffic information displayed real-time in a dashboard will help you to avoid costly overage charges. You should be able to pull this data automatically and run analytics on the data. Then you can identify outliers—such as which devices are consuming the most or the least data—which can be especially helpful if you’re monitoring a large number of devices with different usage profiles.

Ensure sure that you can create usage thresholds. You can control costs and lower the risk of costly overages by defining usage limits for data, SMS, and voice on your devices. Ensure you have the ability to block traffic in real-time on your devices when they reach or exceed a specified threshold.

With profit margins for many companies still in the single digits for telematics-based offerings, real time management of costs, based on device behavior and data usage is key for ensuring that the strategic goal of expanding your UBI strategy meets your financial goal.

**MISTAKE #3: UNDERESTIMATE RESOURCES FOR RMAS AND SUPPORT**

**WHAT YOU DON’T REALIZE:** Investing in real-time remote device management can save you support costs and decrease time to market by months.

Ensuring the connectivity and service reliability of OBD devices, whether built-in or aftermarket, can comprise a large part of your overall budget. The most apparent areas are in customer support and in-field troubleshooting. Connectivity is the central nervous system of your entire UBI program. And connectivity management is more difficult than most companies anticipated when developing UBI pilot programs.

Real-time management of network services can enhance remote device control capabilities and create trusted endpoints with consumers by creating consistent, quality customer experiences with their devices—out-of-the-box through end of life. The benefit of remote device management is the ability to streamline onboarding process and support device-related troubleshooting to significantly lower costs and time to market as you scale out.

Imagine needing to update thousands or millions of in-car devices in real time to ensure they always have the latest risk profiling policies or firmware to capture the new kinds of data.

Or imagine your support center receives a call about a malfunctioning device. When there are issues with your deployed devices, they typically revolve around three areas:

- **Hardware:** The device itself is malfunctioning in some way
- **Software:** The application or firmware installed on the device is malfunctioning
- **Network connectivity:** Both the hardware and the software are working but the network is having problems

Where do you begin in determining root cause of the problem? And how can you effectively do that with thousands of devices deployed across continents?
LESSON LEARNED: Invest in remote device management.

Remote device management has already proven its value in consumer markets that require highly sophisticated devices—think smart phones, cable set-top boxes, residential gateways, etc. It can provide even more value for UBI programs because it’s the only way for insurers and telematics providers to scale beyond pilot programs. Ensure you have automated remote device management capability, so you can:

- Pre-set device configuration: Configure important on-device parameters like server addresses, set times when devices can be used, and communication protocols that should be used to connect to different servers or gateways.
- Provide OTA firmware upgrades: Upgrade device firmware remotely. This function is critical because your OBD devices will be deployed at different times with different firmware versions. And once deployed, they may remain operational for long and varying periods.
- Enable remote re-boots: Remotely reboot devices to avoid expensive in-field customer support.
- Enable remote diagnostics and troubleshooting: Eliminate costly device returns with the ability to have vital insight into device performance by remotely collecting diagnostic data such as measure signal strength, reboot counts, zero byte sessions, and connection attempts.

Any capability that eliminates device replacement, customer support calls, or lower mean time to resolution on support calls will ensure that you can concentrate resources on actually running the business and not building out a customer support center.

MISTAKE #4:
UNDERESTIMATE IMPORTANCE OF NETWORK STATUS DATA

WHAT YOU DON’T REALIZE: Data around connectivity lifecycle can tell you a lot more than you think.

Here’s an example of one insurer’s UBI pilot, first rolled out in 2013. The company partnered with an outsourced firm that required a minimum purchase of 30,000 OBD devices, costing $250/device, in addition to an upfront program management fee. So the company’s initial investment, not including in-house support and engineering costs, or marketing dollars, is $7.5M.

One year later, the insurer now has 5,000 policyholders enrolled in their UBI program. However, out of the 5,000 UBI devices shipped to policyholders, only 3,000 have been installed. So the insurer hasn’t been able to collect enough driving data to draw any actuarial conclusions. And the insurer hasn’t experienced loss ratio improvements or gained a good understanding the UBI program drivers. But they do know they’re not generating a desired ROI.
Mirroring industry standards in North America, about 40% of their policyholders have not enrolled. But what if the insurer could identify in real time which of those 40% they should target with promotional messages because those policyholders could be easily pushed? Or what if the insurer increased adoption rates by guaranteeing a great out-of-the-box experience where the device just works as soon as it’s plugged into the OBD2 port?

**LESSON LEARNED:** Access to real-time network status can help improve adoption rates.

Each of your devices has a lifecycle and you need to map your network service to that lifecycle. A device lifecycle might look like this (see graphic on the left).

Here we start in a Test-ready state, which is non-billable allowing for network testing of the device before it’s deployed in the field. This helps eliminate dead on arrival devices, and ensures a plug and play experience for your policyholders. When the test data is consumed, the device status automatically shifts to another non-billable state, which here is called Activation-Ready, to support the distribution stage.

From there, when the device is powered up by your policyholder and connects to the network for the first time, it automatically changes to Activated, which is the first billable state.

At each stage, knowing the data connectivity status of your device can help increase adoption rates. In our example, our insurer knows that 40% of their policyholders that are not using their OBD devices but they don’t necessarily know why.

But what if the insurance company could tell that 22% of their policyholders had powered on the device within the first 3 days of receiving it? Those policyholders could be the first targeted group to receive special promotional programs. And what if the insurer knew that 8% of those devices had zero-byte sessions? That means that the devices tried to connect to the mobile network but could not sustain a connection. Our insurer could follow up with new device immediately. And what if they knew that 32% of their policyholders never even activated their devices? The insurer could infer consumer behavior reluctance to participate.

Understanding network connectivity data by lifecycle stage provides significant value to insurers and telematics providers that can be critical to the efficient and profitable management of their UBI programs.
MISTAKE #5:
UNDERVALUE PREVENTIVE DIAGNOSTICS

WHAT YOU DON’T REALIZE: Average support costs for OBD devices are equal to 10%-20% of your mobile service bill.

Getting your connected device deployed is only half the battle. How do you support devices once they’re in the field? Do you bear the expense of sending out a service technician? Do you offer phone support? Are there local personnel with enough training to handle remote troubleshooting?

Even if you build diagnostics scripts into your connected device, it doesn’t mean your troubles are over. What happens if the device cannot connect to the network? That’s one of the most common support issues, and it could be caused by a network connectivity problem, device software or server software problem, or a hardware malfunction. But without a connection, it’s impossible to get the diagnostic data you need.

LESSON LEARNED: If your device has problems, it’s probably not a network issue.

Your team needs the ability to conduct real-time network diagnostics to quickly determine whether network connectivity is in fact the problem. The ability to rule this factor in or out within a couple of minutes speeds problem resolution, significantly reducing your customer support costs.

Real-time diagnostics and troubleshooting of devices ultimately ensures better-optimized field service operations. This type of availability enables you to:

• Respond to the customers faster and decrease time-to-repair.
• Save on operational costs by knowing exactly what to fix and eliminating redundant service trips.
• Extend the useful life of equipment and increase average-time-between-failures by identifying and repairing small problems before they become big ones.

In the majority of cases, when your devices cannot connect to your mobile network, it’s not a network issue. It could be a device malfunction, an improperly provisioned SIM card, or the APN is not set properly within the device. Network malfunctions are usually to blame because they are typically the area where you have the least information. Ensure good reporting capability on network conditions, so you can quickly rule out issues and begin focusing on other root problems.

MISTAKE #6:
NOT EFFECTIVELY PLANNING FOR GLOBAL SCALE

WHAT YOU DON’T REALIZE: It’s a hassle working with half a dozen mobile operators to ensure your devices have connectivity wherever they roam in the world.

If you’re in a location where inter-country roaming is a natural part of your policyholders’ driving habits, you need to be able to change SIM profiles on your devices on-demand or based on pre-defined business rules and triggering events, such as device location.

Using global SIMs in your devices can be a smart solution. Acting as a local SIM wherever it roams, a global SIM means that you have only one tax and one operator to manage, enabling you to plan your investments accurately and better predict your costs.

LESSON LEARNED: SIMs can be transferred seamlessly from one operator to another to take advantage of local operator support, comply with international roaming restrictions, and address cost constraints.

Enterprises with connected products often launch products in one or more centralized locations and then deploy them all over the globe. This business model requires network services in multiple countries with multiple operators.

To accelerate global scalability, you need to manage a single embedded SIM in each device. You should be able to remotely provision and manage mobile operator profiles and polices for that SIM anywhere in the world. This meets the demand for more efficient and cost-effective global deployment models and enables rapid international distribution and device activation. Connected devices can then transfer seamlessly from one operator to another to take advantage of local operator support, comply with international roaming restrictions, and address cost constraints.

If you’re planning to deploy devices in multiple regions, you may want to ask your mobile network operator if it has a broader partnership or global alliance so you can access local operators outside their market. Operator global alliance participation can provide you with:

• Single operator management: You only have one vendor to manage, your primary operator, even as your devices are using secondary operators in smaller markets.
• Streamlined purchasing: Purchasing is much easier because all SIMs come from the same operator, no matter what their final destination is.
• Lower roaming costs: You can bypass the roaming rates associated with the primary operator and take advantage of the partner operators’ local service rates. You get a global market at local rates.
MISTAKE #7: NOT PLANNING FLEXIBLE BUSINESS MODELS

WHAT YOU DON’T REALIZE: UBI enablement could be first step to even more new service offerings.

By extending your own product lines via telematics and connectivity, you effectively are opening the door to new service opportunities for other areas of your company. The same connectivity that provides remote monitoring capabilities can also provide value-added services from other business units or even third-party providers.

For many companies, in addition to providing basic vehicle telematics capabilities, connectivity makes it possible to offer additional services, and potential revenue streams, such as Wi-Fi access and a broad spectrum of third-party infotainment content.

LESSON LEARNED: Don’t limit your business model to what’s possible today.

Explore the ability to enable a flexible billing and rating engine, real-time quota management, and service-aware policy enforcement so you can effectively adopt new and creative service-oriented business models. Explore the ability to enter into multi-sided business models. And ensure you have the ability to conduct service-based metering and policy enforcement, and multi-party invoicing and settlement to enable unique partnerships between you, operators, and third-party content providers.

UBI CAN LEAD THE INTERNET OF THINGS EXPANSION

Jasper believes that insurers and telematics providers are on the front lines of The Internet of Things. And to reap the many rewards that come, you will have to transform into a connected service business, become more aware, more responsive, and more attuned to policyholders as a result.

Connecting your business to The Internet of Things touches every part of your company and reshapes it for the better. It brings you much closer to your customers, giving you a deeper, richer understanding of what makes them tick. It automates previously manual processes, making you more agile and responsive, and letting you focus on the most valuable parts of your operation. It brings new revenue streams, efficiencies, and pricing strategies to your business model. Learn from the lessons of 1,500 companies around the world who have launched, managed and monetized their IoT business by contacting Jasper today.

ABOUT JASPER TECHNOLOGIES

Becoming a connected business means becoming a service business. And that’s where Jasper comes in. Jasper is the pioneer in cloud-based platforms for the Internet of Things (IoT) and the defining player in the Service IT category. The Jasper Platform empowers enterprises and mobile operators of all sizes to deploy successful IoT service businesses on a global scale. More than 1,500 companies, including many of the world’s top brands, have chosen Jasper to fast-track their connected businesses. Mobile operator groups worldwide, representing over 100 network affiliates, partner with Jasper.

Founded in 2004, Jasper is based in Mountain View, California. For more information, visit www.jasper.com or follow us on Twitter @Jasper__IoT.

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