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How to capture value from older electric vehicles

# THE PROBLEM

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Electric vehicles by design are at the cutting edge of automotive technology. As a result, Moore's Law has a greater effect on EV's than it does on their comparatively lesser advanced ICE counterparts. That means each new version of an electric vehicle model is often technologically ahead by leaps and bounds over its predecessor, both in actuality and customer perception. As a result, demand and interest from consumers towards older EV's is significantly lower compared to older versions of ICE vehicles. This has created a unique challenge for auto manufacturers to figure out how to capture value from older EV's while still maintaining their technological edge with new EV models.



# Perception Is Reality

The main issue here is perception. Customers are used to purchasing a vehicle and having that vehicle instantly become a sort of technological time capsule from the year it was manufactured. Customers were willing to accept this trade-off as long as the major technological advancements did not outpace a 3-5 year cycle which also happens to correspond with the time an average lease/ car loan takes to mature.

However with the recent improvements in vehicle technologies led by Tesla, the fundamentals of said trade-off has been upended. Electric vehicles by their very nature are considered (and marketed as) cutting edge technology and as all things cutting edge, the speed at which new improvements are brought to market has far more in common with an iPhone than with a traditional automobile. So it's no surprise that consumers are exhibiting similar behaviors when deciding to purchase an EV as they do with iPhones i.e. they would rather wait for the newer model than purchase an older "outdated" model.



# The Tesla Approach - OTA (Over The Air)

Tesla has been able to diminish the adverse perception effects of Moore's Law on its electric vehicles by implementing a strict regiment of regular updates to its vehicles OTA (Over The Air). Tesla owners are often greeted with new features which were non-existent when they initially purchased the vehicle. As EV technology progresses at a rapid pace, Tesla vehicles are able to keep up and continually improve their functionality by unlocking new capabilities. Tesla has achieved this by creating a roadmap of future vehicle features and then building in the necessary hardware required to execute these features ahead of time. This gives Tesla's the allure of an appreciating asset rather than the stigma of a depreciating asset which is true for most other vehicles.

However not all electric vehicles can do what Tesla does. How can this solution be applied to electric vehicles currently in the market that lack a robust OTA capability similar to Tesla?



# THE SOLUTION

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## A Timed Feature Release Approach - “Ship Drip Drip”

In an ideal world, all electric vehicles will come equipped with a robust OTA framework comparable to Teslas. However Tesla is an exception to the rule and not the norm. Most electric vehicles today possess some basic OTA functionality, but not enough to deliver features and updates capable of changing the consumer’s perception. Therefore in lieu of a robust OTA framework, a ‘Timed Feature Release’ approach (otherwise know as “Ship Drip Drip”) will help automakers improve consumer perception of their vehicles as continually improving, similar to what Teslas.

Just like a time release capsule, a ‘Timed Feature Release’ approach is based on the idea that you **Ship** the electric vehicle with over engineered non-critical features which are subsequently software limited (or software deactivated) i.e. features like speed, camera, security, entertainment, user interface, etc. Then at predetermined future intervals, the software will automatically unlock or remove limits to some of those dormant features, thereby delivering a steady **Drip** of new functionalities and updates over time. This will help to create the illusion of an EV with continually improving technology and allow automakers to capture more value from their older electric vehicles.

# THE IDEA

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## **Step 1. Build multiple versions of each feature**

Each non-critical software based feature can be over engineered to have 3-6 additional versions upon launch. Each additional version will be incrementally and noticeably better than the other.

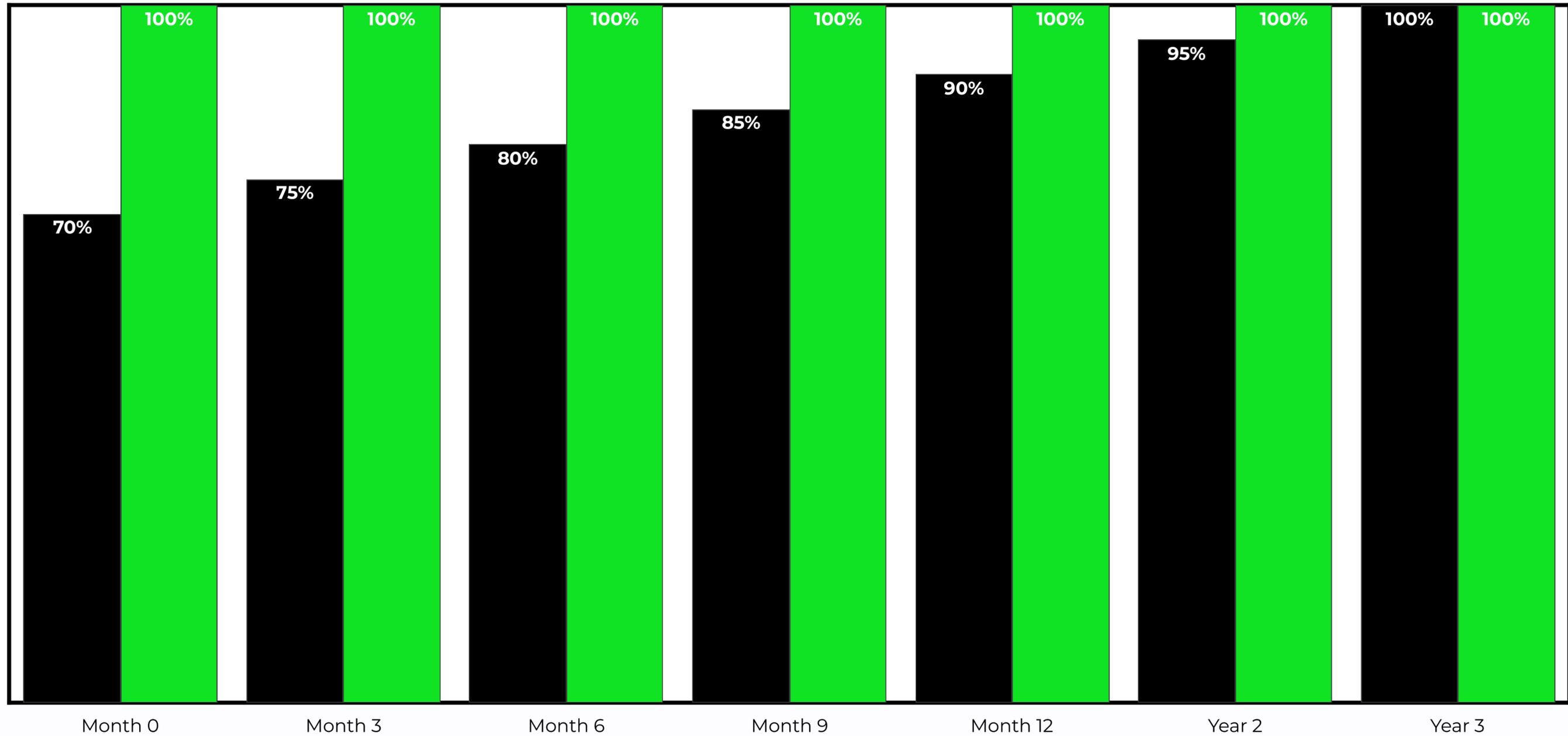
## **Step 2. Unlock each new/subsequent version at set intervals**

Each vehicle will be initially shipped with version one (V1.0) capabilities. Then every 3, 6, 9, 12 months, or more, a new/subsequent version (V1.1, V1.2, V1.3, etc) that was previously locked/deactivated will be automatically unlocked/activated without any intervention from the automaker.

# Example: Unlocked Features Vs. Total Features

■ Unlocked Available Features

■ Total Available Features



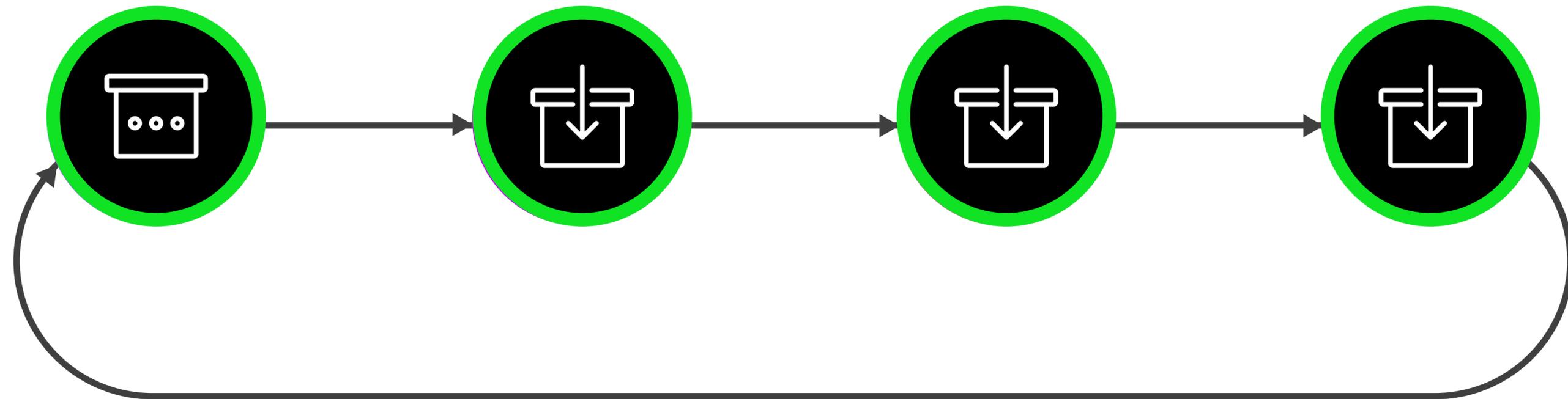
# Example: Timed Feature Release Schedule

FEATURE	Month 0	Month 3	Month 6	Month 9	Month 12	Year 2	Year 3
<b>1. Navigation</b> Additional capabilities	+		+				
<b>2. Speed</b> Increased acceleration		+		+	+		
<b>3. Driver Display</b> Improved UI design	+				+	+	
<b>4. Entertainment UI</b> Additional media				+			+
<b>5. Camera</b> Additional capabilities		+		+			+
<b>6. Security</b> Improved capabilities	+				+	+	
<b>7. Charging</b> Faster charging speed	+		+		+		
<b>8. Internet</b> food, diet, lifestyle				+		+	+



# THE PROCESS

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## SHIP

Automaker ships EV with a portion of it's advanced features locked.

## DRIP

At interval #1, software unlock previously inaccessible Version 1.1

## DRIP

At interval #2, software unlock previously inaccessible Version 1.2

## DRIP

At interval #3, software unlock previously inaccessible Version 1.3

# THE AUTHOR

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# THANK YOU

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