HubCap

A new industry Standard for captioning

This 'telephone' has too many shortcomings to be seriously considered as a means of communication.

WESTERN UNION INTERNAL MEMO

Hub Cap

It's the run-rate, and growing!

- 500 million Minutes per year
- 27% of the Older Adult population in the US and growing
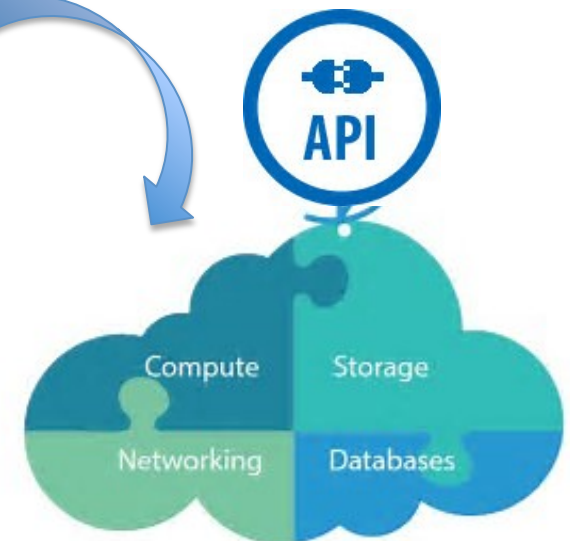- Currently captive to 6 BPO's using a partially automated delivery model

FCC Challenges

- Usage AND cost spiraling upward
- Product-centric model stifles innovation
- Operational model obsolete, doesn't scale
- Disintermediated from consumers
- Perverse incentives for providers

All technology migrates to the end-user

Competition is the Consumer's best friend

The only constant is change…

Change is good!

I'm so glad you called   are we still meeting for lunch tomorrow?   great   let's go to that new restaurant by the river   I can't wait to see you

Everything will be ok…

…and to fear it dooms your business model

Let the consumer decide

Legacy Model

- One-sided transcription
- High-latency
- Limited language support
- Product-bound
- Accuracy static

Current Technology

- Whole conversation
- Near-zero delay
- Multi-language
- Innovation Platform
- Continuous improvement

The Accuracy Argument fails to recognize that the entire consumer experience includes many factors.

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Incumbent's Dilemma

 "Now, I'll acknowledge that the First Path wouldn't be bad for everyone. **Those who arbitrage our rules, who build a business around regulation, who use that regulation as a shield against competition, would thrive** under the First Path…

… I'd rather see companies spend their money on engineers and work crews, not attorneys and accountants. "

Chairman Ajit Pai on the IP Infrastructure

Incumbent Providers' Challenge

Because they own the "run-rate" today, delaying the transition to the new model results in lower margins for them, higher costs for the FCC/Public and fewer choices for consumers.

- Manage risk of existing installed base investment
- Innovation vs. Arbitraging Regulatory Barriers
- New technology is better, faster, cheaper – but only at scale
- Supporting Industry Standard = Speed to Scale
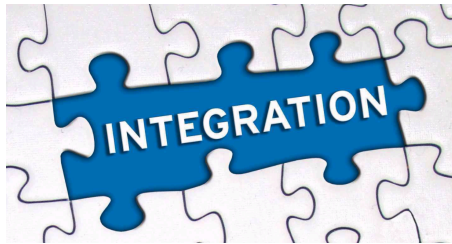
From *Product Lock-in* to *Platform Empowerment*
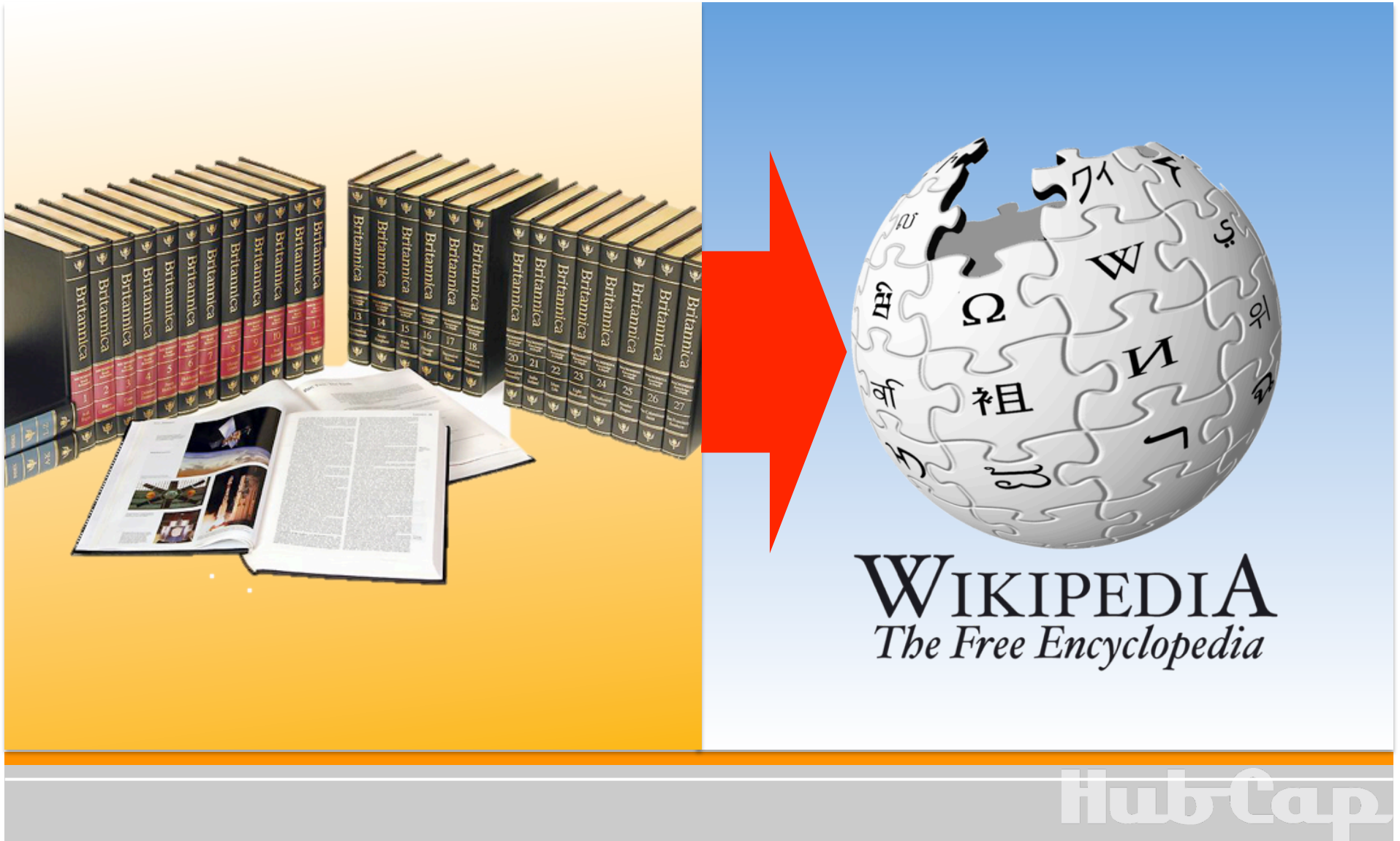
HubCap is an intersection of interests, a **scalable** way forward, a **platform for innovation**, a path to **consumer benefits**

API/Microservice – Deep is the new More

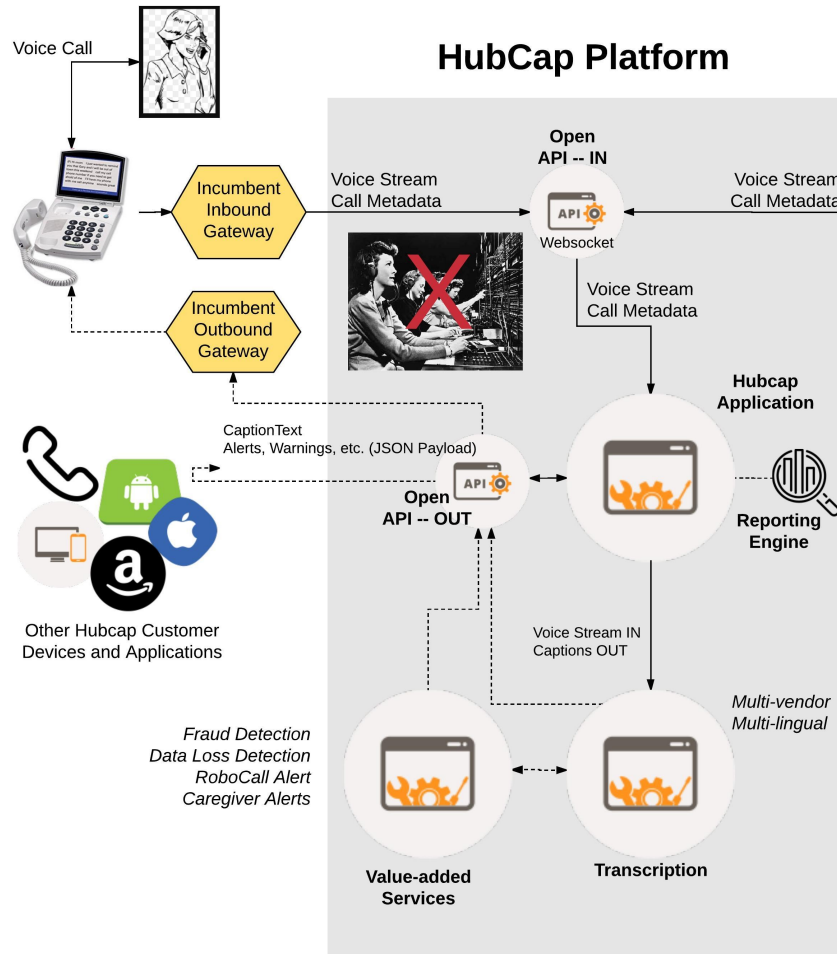Build new and leverage existing high-quality applications quickly

Reduce duplication of effort, achieve scale, lower cost

Enable better decisions through analytics, standard metrics, and machine learning

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Phase 1: Standard Platform/API*

HubCap Platform

Voice Call

Incumbent Inbound Gateway

Incumbent Outbound Gateway

Voice Stream Call Metadata

Open API -- IN

Websocket

Voice Stream Call Metadata

Voice Stream Call Metadata

Other Hubcap Customer Devices and Applications

Hubcap Application

CaptionText Alerts, Warnings, etc. (JSON Payload)

Open API -- OUT

Reporting Engine

Other Hubcap Customer Devices and Applications

*Fraud Detection
Data Loss Detection
RoboCall Alert
Caregiver Alerts*

Voice Stream IN Captions OUT

*Multi-vendor
Multi-lingual*

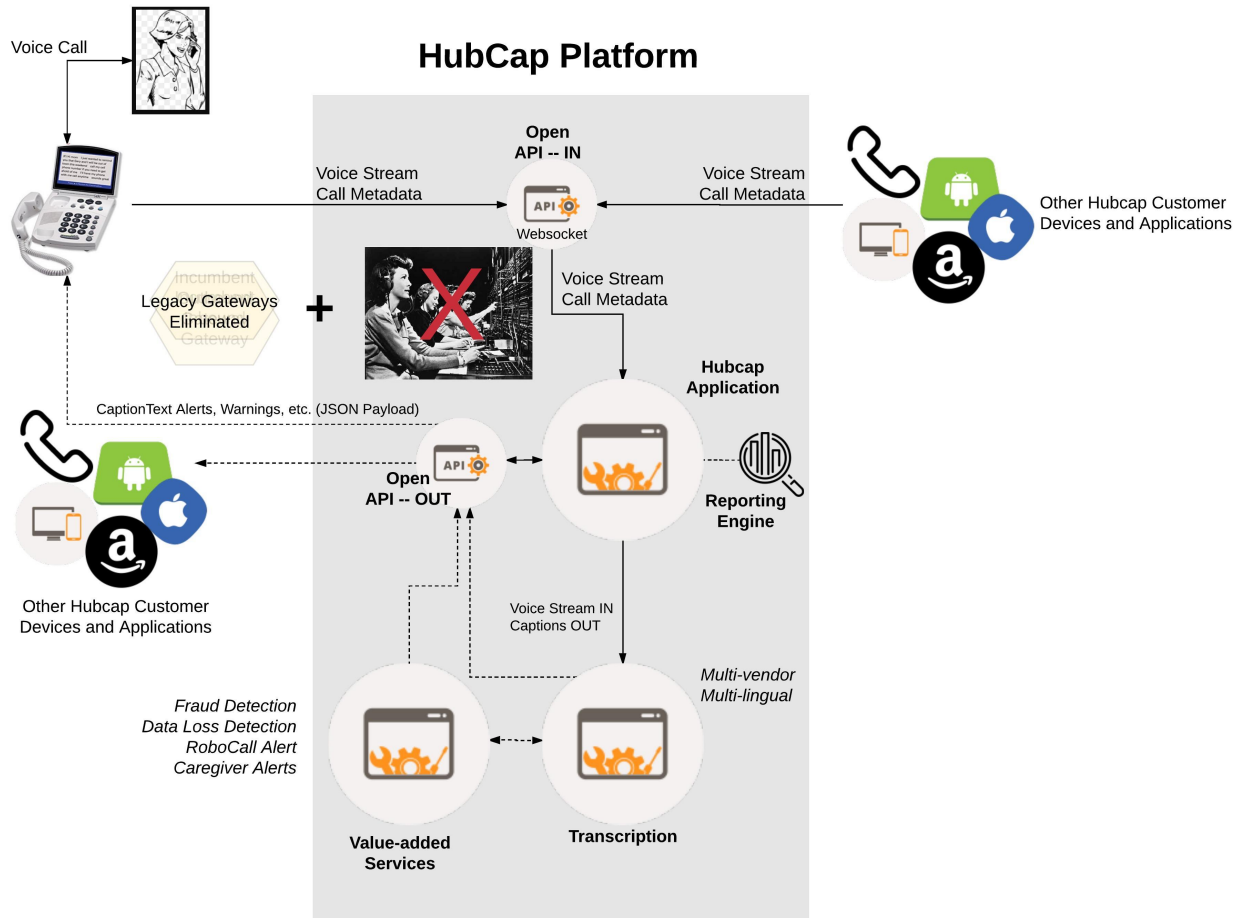**Value-added Services**

Transcription

1. Focus on Platform and Public API roll-out

2. Administrative/Reporting

3. Scalability and Failover

4. First-generation value-added features

5. Open proprietary access to incumbent providers through existing gateways

* Underway

Phase 2: Device Migration

HubCap Platform

Voice Call

Voice Stream
Call Metadata

**Open
API -- IN**

Websocket

Voice Stream
Call Metadata

Other Hubcap Customer
Devices and Applications

Incumbent
Legacy Gateways
Eliminated
Gateway

+

Voice Stream
Call Metadata

**Hubcap
Application**

CaptionText Alerts, Warnings, etc. (JSON Payload)

**Open
API -- OUT**

**Reporting
Engine**

Other Hubcap Customer
Devices and Applications

*Fraud Detection
Data Loss Detection
RoboCall Alert
Caregiver Alerts*

Voice Stream IN
Captions OUT

*Multi-vendor
Multi-lingual*

**Value-added
Services**

Transcription

Focus on Device Migration
1. Field Upgrade
2. Up-sell/cross-sell
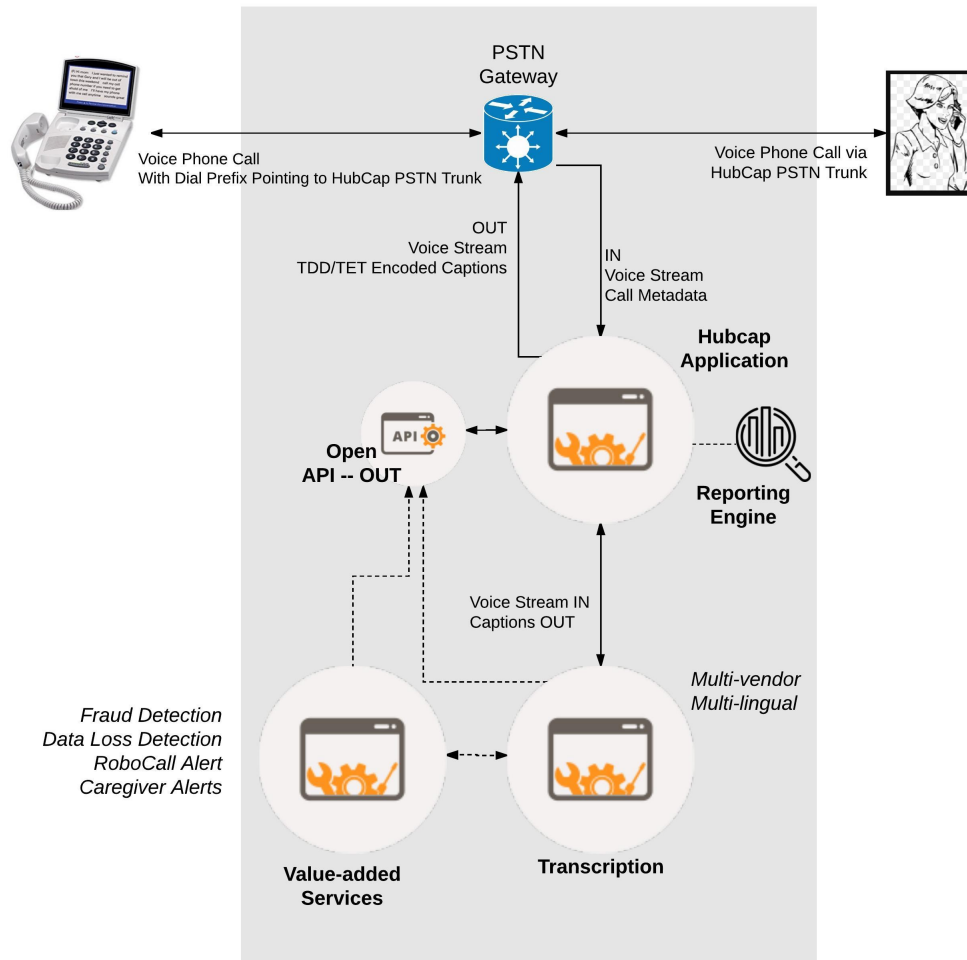3. Eliminate Legacy Phones*

Release new device/ service combinations

Establish channel/ marketplace to leverage existing customer franchise

# PTSN Migration Path

HubCap PSTN Solution

1. Change pre-fix to point at Hubcap PSTN Trunk

2. Standard Process Voice and Metadata (device reqs)

3. Selective introduction of value added services (as possible)

4. Proprietary encoding of Captions for return trip.

HubCap Summary

- Several PRODUCT-based solutions prove this model will work but only a PLATFORM-based solution will scale quickly

- API/Microservices model is proven and ready

- The HubCap standard will dramatically improve the customer experience, drive margin expansion for incumbents while enabling the FCC's vision – everyone wins

- HubCap is a standards-based technology platform that enables more consumer choice and value-add faster and cheaper

- The HubCap platform – operating as a consortium business model a "safer" path to the next generation of speech-to-text assistive tech

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Incumbent Transition Economics

Impact of Glidepath Pricing
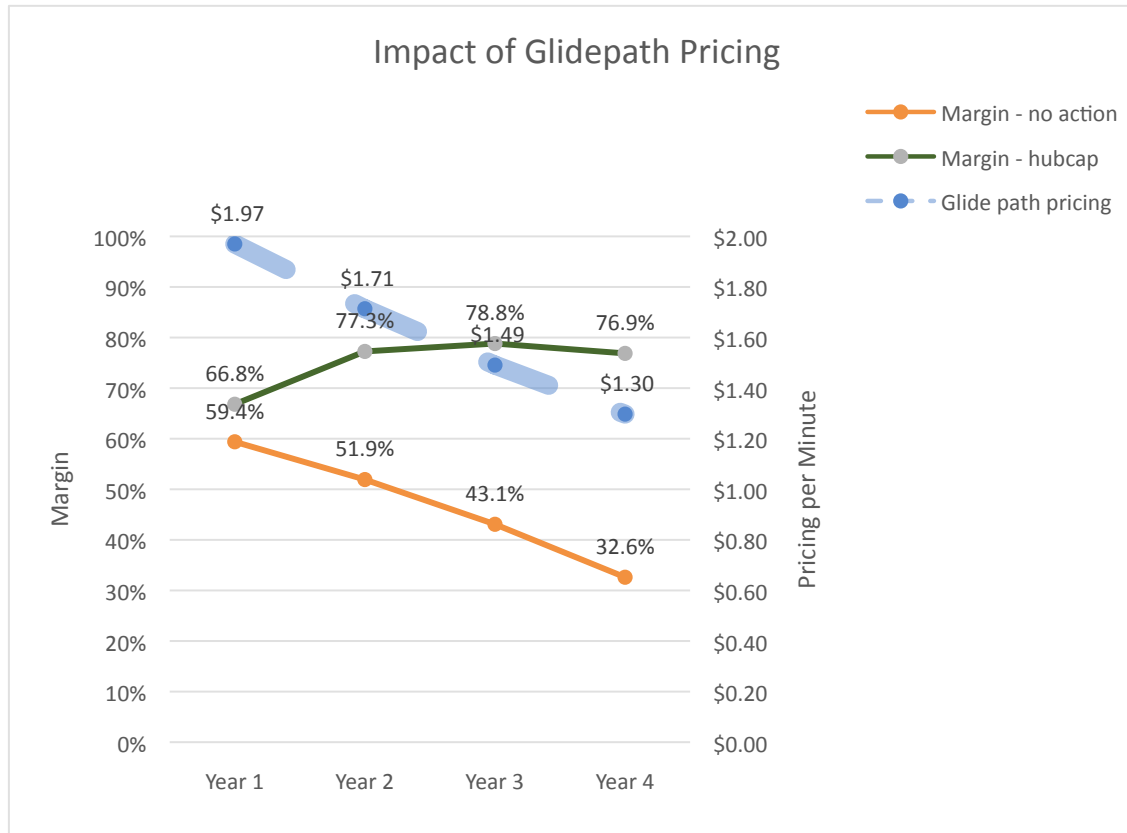
- ✓ Faster transition is self-funding

- ✓ Lack of action dilutes margins and invites substitution

- ✓ Industry Standard enhances potential value of customer franchise

- ✓ Point of greatest leverage is now

Consortium

- HubCap will ensure that Consortium Members' input and requirements are understood and addressed
  - Governance procedures utilizing a Program Management and Project Management disciplines including the HubCap Product Management team working closely with Consortium member team participants
  - Stakeholders from hearing-impaired community, consumer advocates, FCC, etc.
  - A unified roadmap for core HubCap product delivery including all design specifications from Epic to Story level details
  - Detailed break downs utilizing the Agile Software Development process
  - Milestone reviews for all Provider CTO and Product personnel including sprint level productivity and burn-down analysis
  - Published release dates and release documentation
  - Additional Product Marketing support as needed

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Our request/Next Steps

- Approve a path to operational approval
- Endorse the desirability of an Open Standard to facilitate speed and scale of run-rate transition
- Validate "Coopetition" approach to encourage more consortium participation
- Participate (as appropriate) in Consortium activities.

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HubCap Team

Founders

- ***Rob Kessel*** has worked with speech and language technology for over 30 years. He holds S.B., S.M., and Ph.D. degrees from M.I.T. in electrical engineering and computer science. His work experience includes speech industry pioneers such as Voice Processing Corporation, Wildfire Communications, SpeechWorks, and Nuance**.**

- ***Terry Leahy*** has scaled multiple companies to successful exits including as CEO of Modus, Revivio (sold to Symantec) and most recently as CEO of CallMiner where he led the business from start-up to market leadership in the Speech Analytics industry with over $ 35 Million in recurring revenue

- ***Ed Rose*** is a veteran technology entrepreneur with multiple successful exits including Open Channels (sold to cMGI), Modus (sold to cMGI) and Stream International (sold to Solectron) He was the CEO of Open Channels and the CTO at Modus and Stream

Board of Advisors

- ***Richard Browdie,*** is CEO of the Benjamin Rose Institute on Aging and was formerly, Pennsylvania's Secretary of Aging from 1995 to 2002. He is Immediate-Past Chairman of the Board of the National Council on Aging.

- ***Steven Chambers*** is CEO Jibo , former President Nuance Communications and All-Star Speech Industry player