



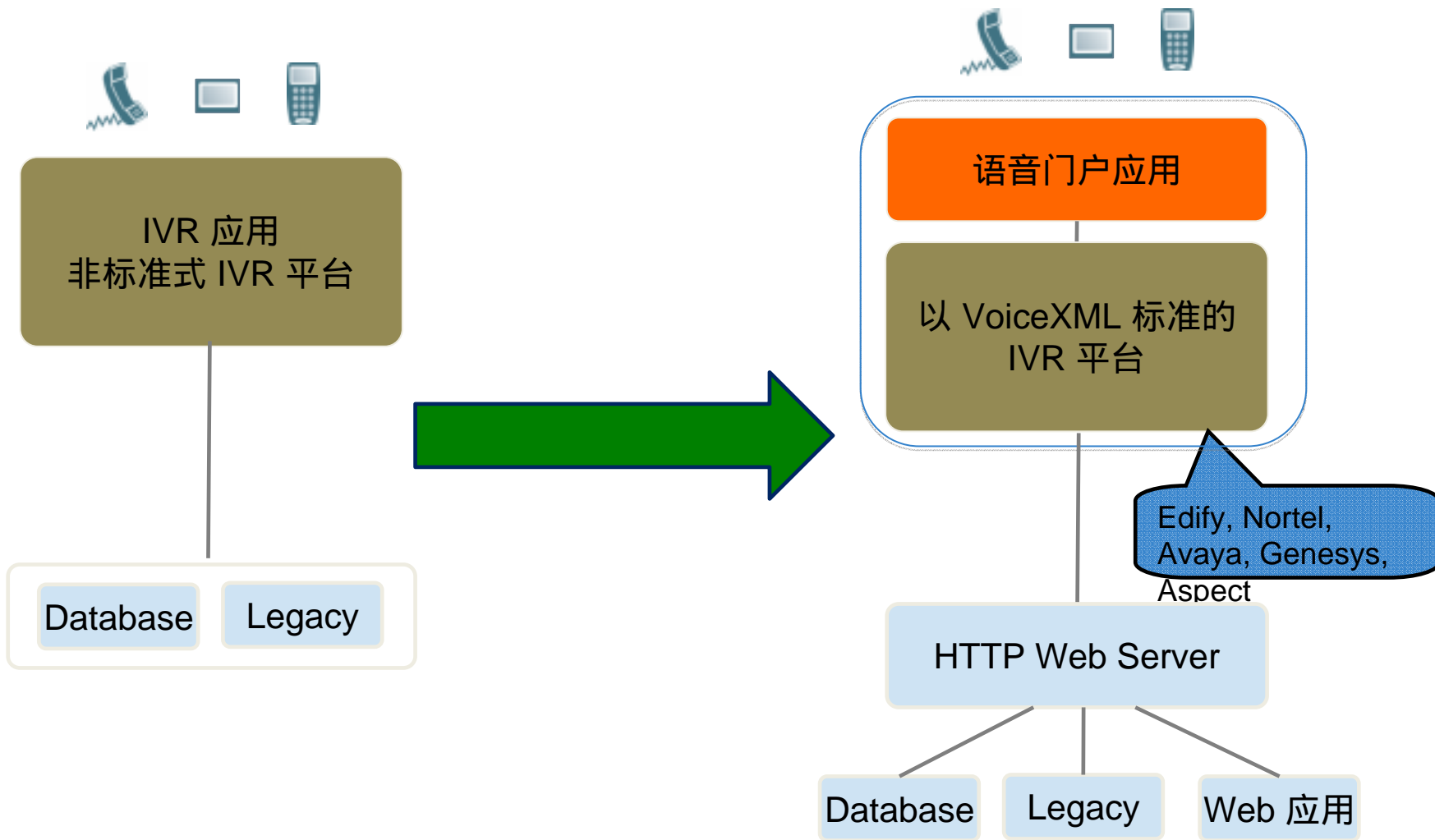
voxeo

下一代语音门户的应用与管理

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IVR 平台技术演变



关键字：VoiceXML, Web 融合，ASR, TTS，应用和平台的分离

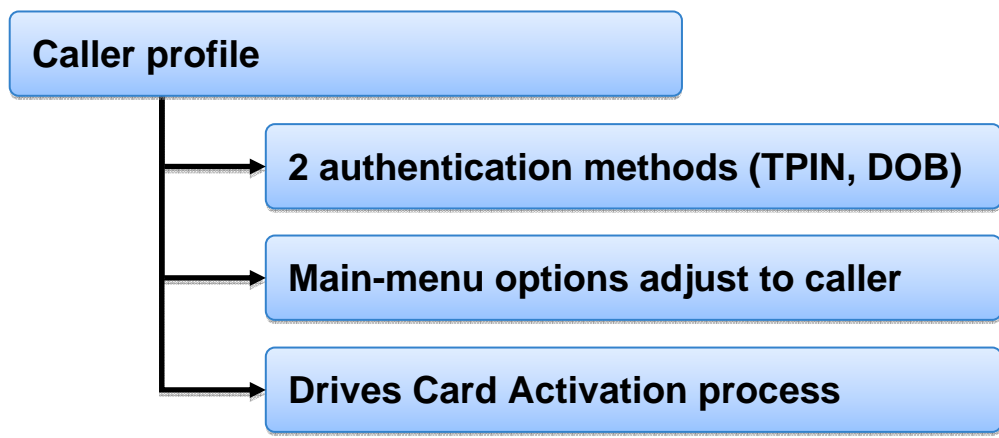
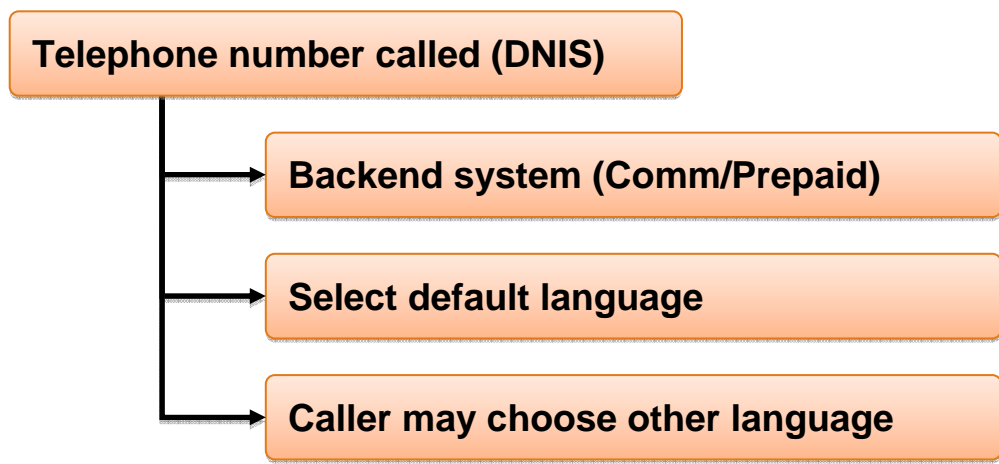
- ▶ 银行： Citibank (花旗银行)
- ▶ 零售： IKEA (宜家)
- ▶ 电信： T-Mobile
- ▶ 金融服务： Volkswagen financial services



Citibank 信用卡门户

Highlights:

- Complex voice applications
- Grouping – platinum/gold/regular, language, DTMF/speech
- Business managers wants to see real-time reporting on platinum customer



UK
English - 1
other - 9
other
French - 1
German - 2
Spanish - 3
Dutch - 4
Swedish - 5
Italian - 6
Portug. - 7
Finnish - 8
Currency
Pound
Pence

Finland
Finnish - 1
Swedish - 2
other - 9
other
English - 1
German - 2
French - 3
Dutch - 4
Spanish - 5
Italian - 6
Portug. - 7
Currency
Euro
Cent

个性化要求：多语言，DTMF/ASR，客户群体划分

Layers Manage Complexity

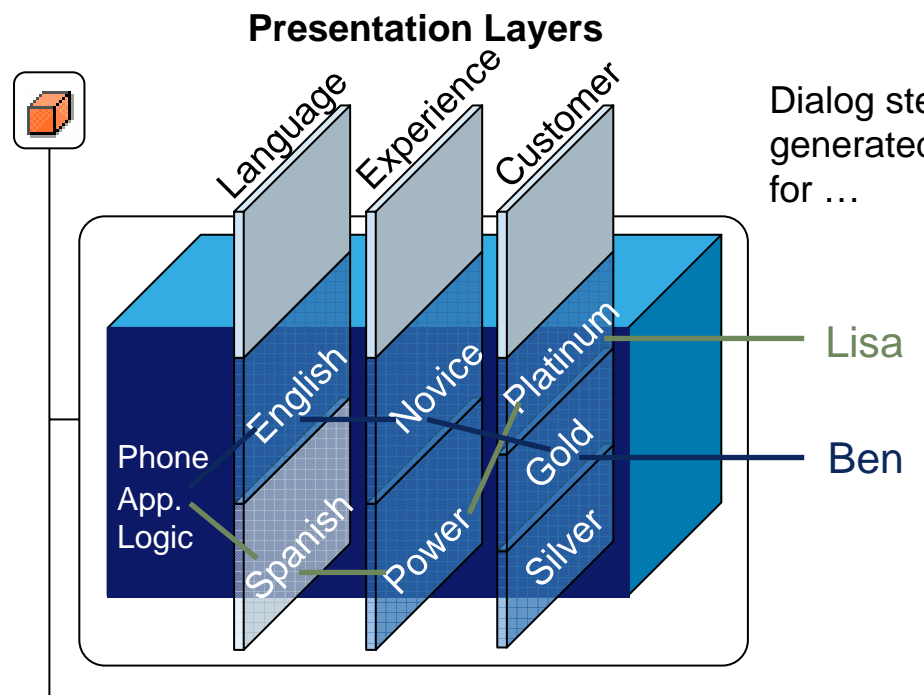
Efficient management of dynamic, personalized applications

■ Features

- Adapt system responses at call time
- Examples:
 - *Multi-persona design*
 - *Multiple languages*
 - *Caller history / experience*
 - *Customer status*
 - *Voice / DTMF*

■ Benefits

- Keeps development and maintenance costs down!
- Simplifies management of complex services



Citibank信用卡门户: 实时行为分析



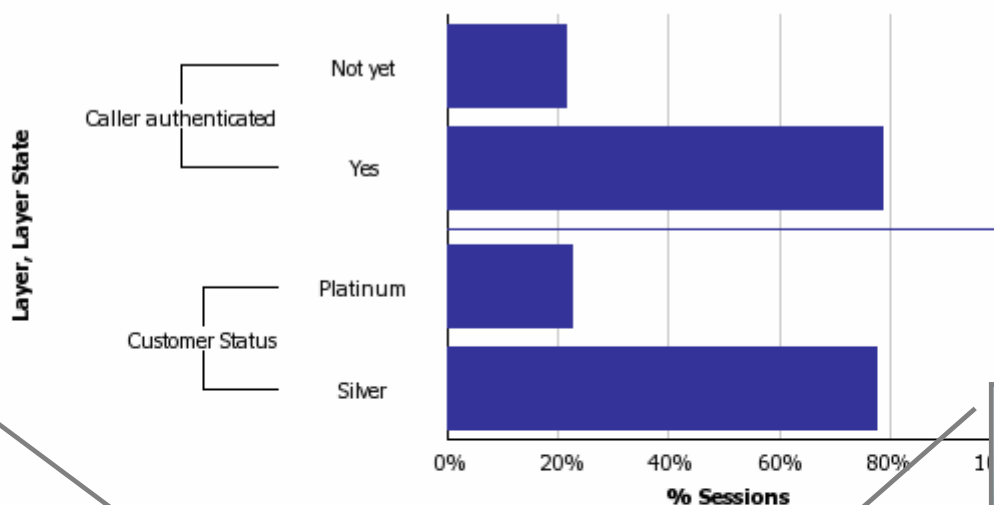
	Commercial Card		Prepaid Card
	Individually billed	Centrally billed	
Authentication	TPIN Authentication	TPIN Authentication	TPIN Authentication DOB Authentication
Card Activation	First Activation Renewal	First Activation Renewal	First Activation Renewal
Pushed Information	Balance	Balance Payment Information	Balance Last Deposit Date
Main Menu	Balance Payment Change TPIN Other Options Statement Copy Unrecogn. Charges Agent Transfer	Balance Transaction History Change TPIN Other Options Statement Copy Unrecogn. Charges Agent Transfer	Balance Transaction History Change TPIN General Information Other Options Unrecogn. Charges Agent Transfer

Real-time Analysis: transaction success/failure rate & reason

Personalization Reporting

Question: How does call flow personalization work for our callers?

Application success analysis by Layer states (e.g. Customer segments, ...)



At call termination, 78.6% of callers had authenticated

Call duration is shorter for Platinum users

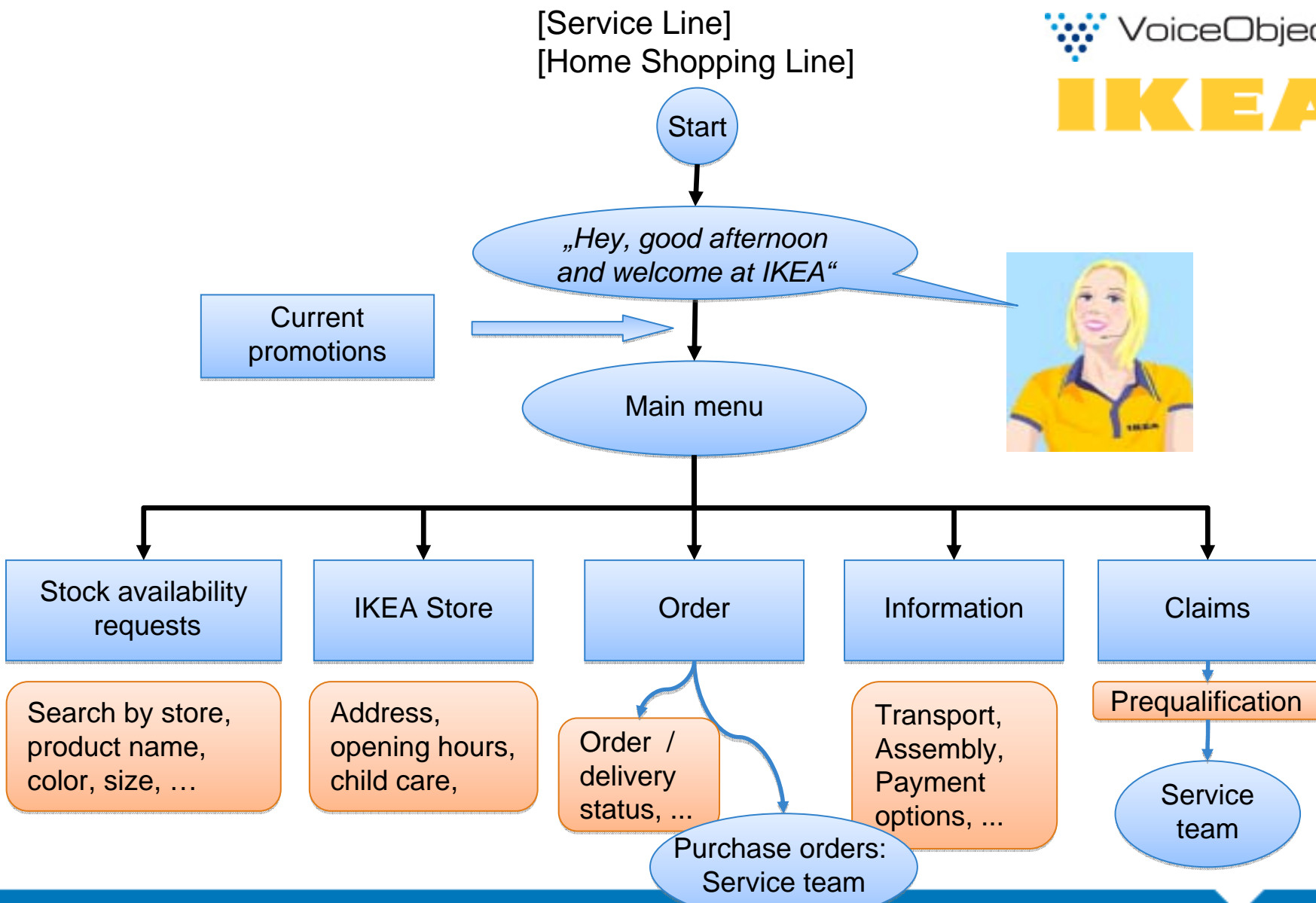
Layer	Layer State	# Sessions	% Sessions	Avg Duration (sec.)	Avg # Input States	# Input States w. No Match	# Input States w. No Input	% Successful Input States
Caller authenticated	<u>Yes</u>	9,177	78.62%	95.3	12.81	1.00	1.82	80.51%
	<u>Not yet</u>	2,495	21.38%	69.7	10.53	0.87	2.38	70.89%
Caller authenticated		11,672		82.5	11.67	0.93	2.10	78.76%
Customer Status	<u>Silver</u>	14,064	77.56%	72.8	10.36	0.77	1.65	76.98%
	<u>Platinum</u>	4,070	22.44%	51.7	7.83	0.54	1.18	74.08%
Customer Status		18,134		62.2	9.10	0.65	1.41	76.46%

The IKEA logo, featuring the word 'IKEA' in a bold, yellow, sans-serif font with a registered trademark symbol (®) to the right.

Highlights:

- 语音业务分散在好几个IVR平台上
- 统一式开发, 部署, 维护, 管理

IKEA – 多平台统一开发



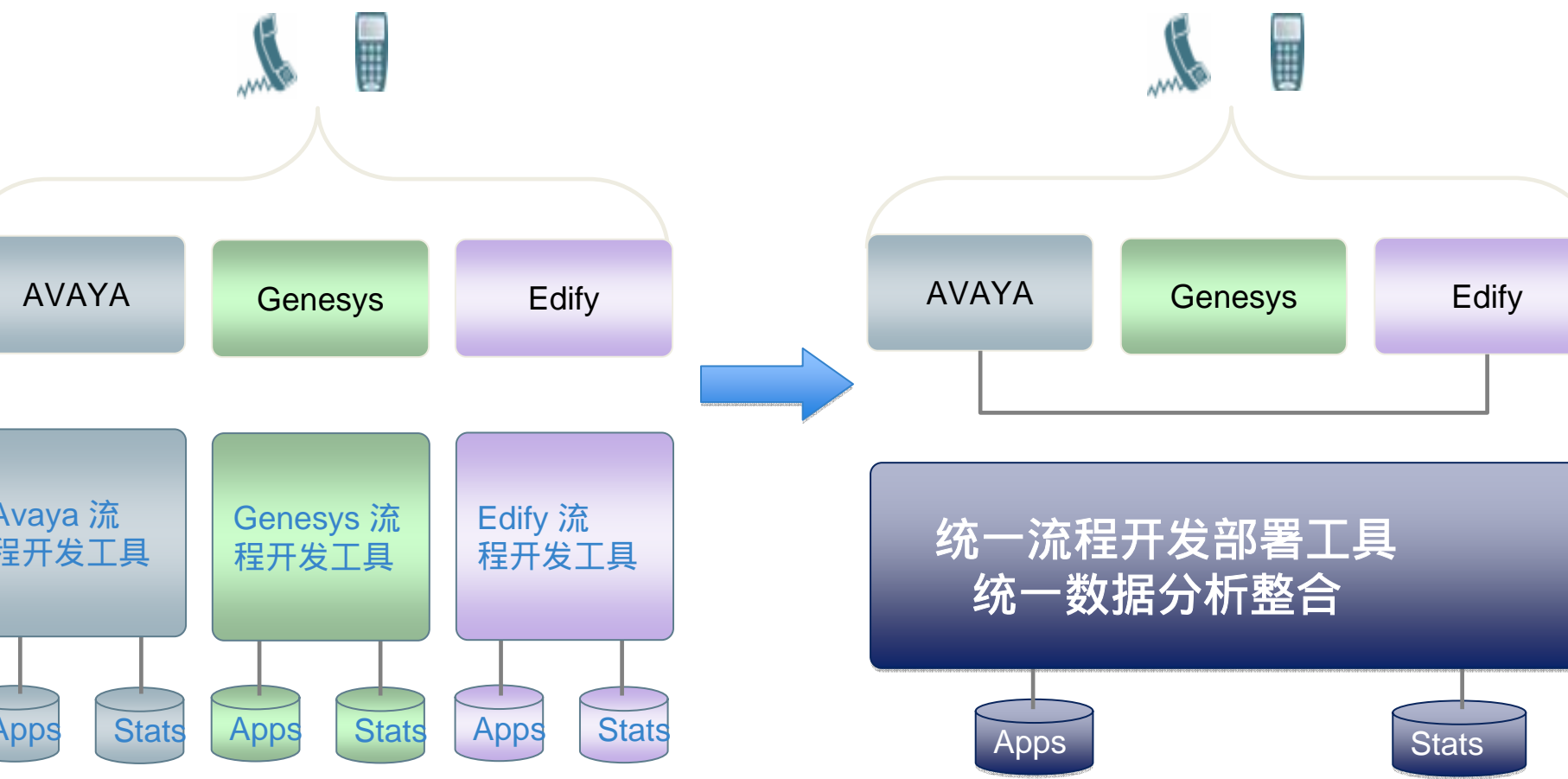
IKEA - 多平台统一开发



LOCAL STORE	PRODUCT DESCR. 1	PRODUCT DESCR. 2	PRODUCT CATEGORY	Color	Height	Width	Depth	Length
Ludwigsburg	Mysa	Olvon	Cloth			150		200
Berlin-Spandau	Pax		Shelf board	Birch Replica		75	58	
Berlin-Tempelhof	Billy		Shelf	Birch		120		
Berlin-Waltersdorf	Malm		TV tray	Birch Veneer		93		
EXPO-Park	Frosta		Chair	Aluminum-white	45			
Halle/Leipzig	Lack		Rack	white		130		

语音业务分散在好几个IVR平台上：统一式开发, 部署, 维护, 管理

T-Mobile: 多平台式统一开发, 部署, 管理, 分析





Highlights:

- Each region has its own IVR systems
- Unified application development and management
- Single application for multi-channel
- Analysis – want dominate path analysis

Design once, deploy anywhere



Voice and Video

- IVR / IVVR
- DTMF & Speech Recognition
- Inbound & outbound



Texting

- SMS / USSD
- Instant Messaging
- Social Networking



Multi-Channel Application

Mobile Web

- Simplified Web UI
- Mobile Web Browser
- Web Plugin
- Kiosk Terminals



Mobile Apps

- Smartphone Apps
- Rich user interface
- Online & offline

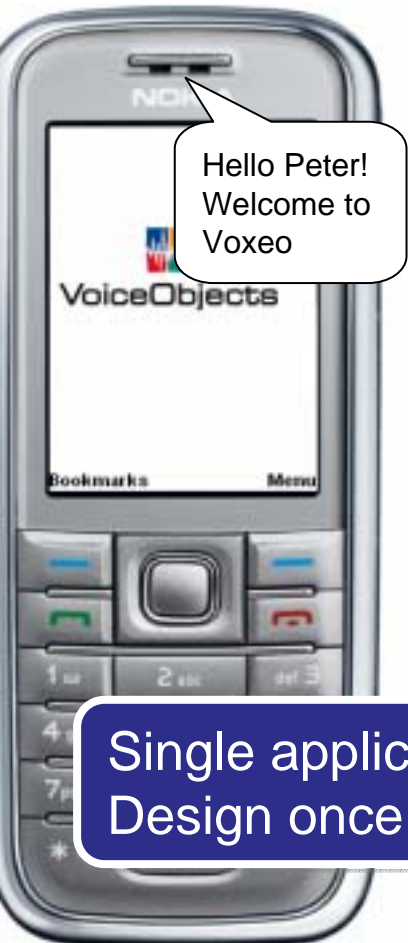


T-Mobile - Multiple Phone Channels



Voice, Mobile Web, Mobile Video, Mobile Text

Voice



Video



Text



Mobile Web



Single application definition across all mobile phone channels
Design once & deploy anywhere

Speech & DTMF

Speech & DTMF

Texting

Point & Click

Understanding caller behavior

VoiceObjects Analyzer

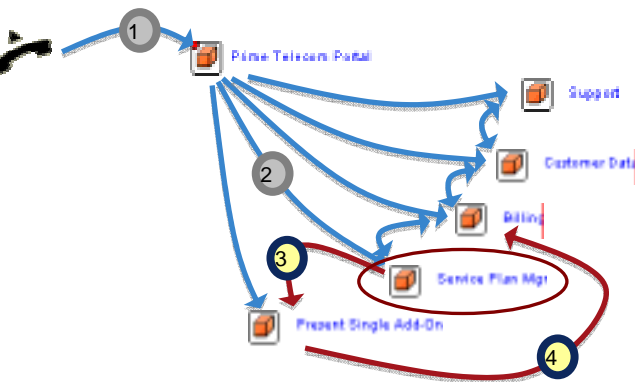
Dominant Path Analysis (3)

Service

* Prime Telecom

Start Module

* Main: Service Plan Mgr



Start Module	%	Module 2	%	End Module	% Abs.	# Occurrences				
Main: Service Plan Mgr	79.81%	Present Single Add-On	65.87%	Present List of Add-Ons	26.07%	1,783				
				Order Add-On	3.80%	260				
				[End of Dialog]	3.48%	238				
				Change Add-Ons	3.29%	225				
				Main: Service Plan Mgr	1.23%	84				
				Main: Customer Data	0.88%	60				
				Main: Support	0.54%	37				
				Main: Billing	0.25%	16				
				Change Payment Settings	0.06%	4				
				Present List of Add-Ons	17.42%	Present List of Add-Ons	34.18%	[End of Dialog]	2.95%	202
								Order Add-On	2.89%	198
								Main: Service Plan Mgr	1.18%	81
								Main: Customer Data	0.86%	59
								Main: Support	0.48%	33
								Main: Billing	0.25%	17
								Change Payment Settings	0.01%	1
Change Add-Ons	1.92%	Change Add-Ons	81.54%					[End of Dialog]	0.77%	53
								Main: Service Plan Mgr	0.07%	5
								Main: Customer Data	0.04%	3
				Main: Billing	0.03%	2				



VOLKSWAGEN FINANCIAL SERVICES

AKTIENGESELLSCHAFT

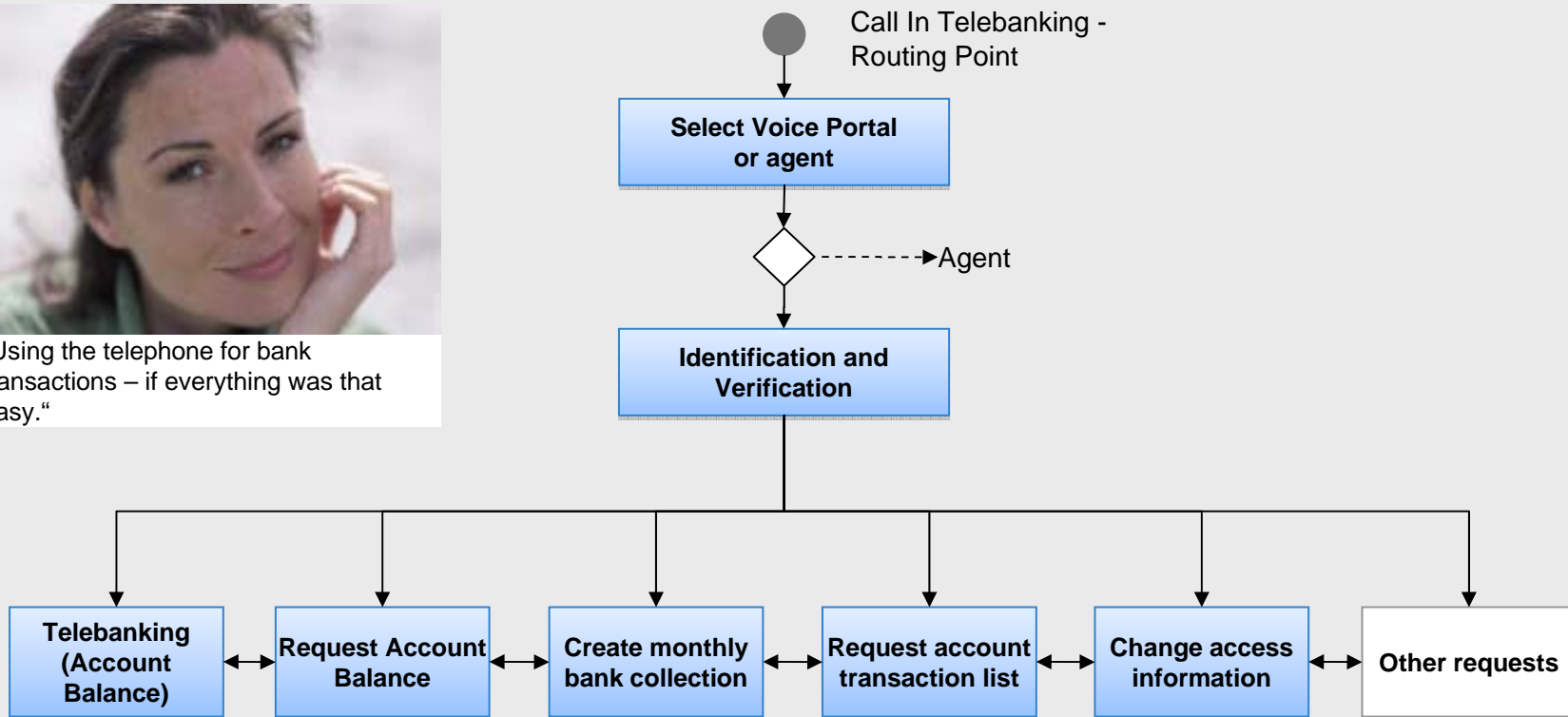
Highlights:

- Highly transactional IVR system
- Payment transfer, credit card binding etc
- Need success/failure analysis on all IVR transactions

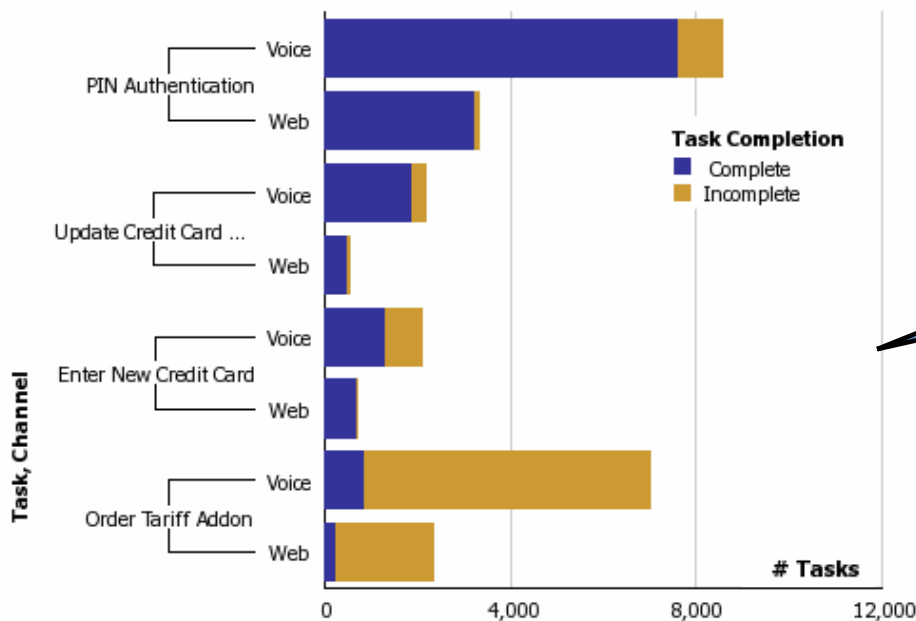
VW FS – The new Voice Portal



„Using the telephone for bank transactions – if everything was that easy.“



Business Tasks: Completion Rates



Cross-channel Reporting

Business-level statistics on Task completion rates

... but 82% actively aborted the "Order" transaction ...

... and there were recognition problems and hangups while entering new credit card data

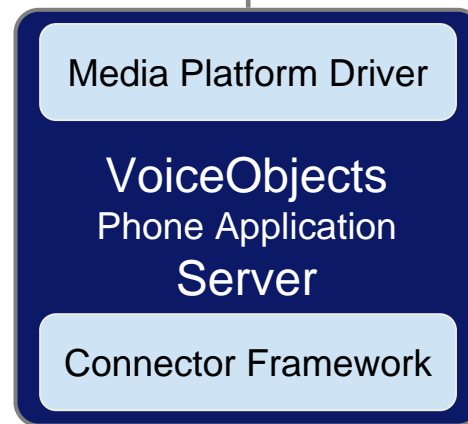
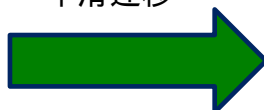
Voice		Complete		Incomplete				
		Complete	Incomplete	Caller abort	Recognition failure	Session termination		
		# Tasks	%	# Tasks	%	# Tasks	# Tasks	%
Authentication	PIN Authentication	7,640	89%	119	1%	220	552	3%
Transaction	Enter New Credit Card	1,300	62%	131	6%	327	343	16%
	Order Tariff Addon	883	13%	5,751	82%	245	115	2%
	Update Credit Card Expiration Date	1,900	87%	37	2%	96	147	7%
Summary		11,723		6,038		948	1,157	

"Update Expiration Date" was very

1. Build services independent of the IVR platform
如何应用开发独立，统一开发部署管理
2. Design once, deploy across multiple Phone Channels
如何一次开发，多通讯渠道部署：语音，短信，手机Web.
3. Real-time IVR Analytics on Customer Behavior and Experience
如何对客户行为做实时分析
4. Personalize the Call Experience
如何容易做到个性化的呼叫体验



平滑迁移



应用



分析报告

Customers using VoiceObjects

Mobile Carriers ,
Cable & Media,
Value-Added Service
Providers



Banking & Financial
Services



Consumer Products



Technology, Travel,
Healthcare, other





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The End
Thank You