

# Measuring IVR Performance

**Task completion rate is the metric that matters most when evaluating IVR performance and return on investment.**

Summary .....	3
Task Completion Rate: the one metric that matters.....	4
The difference between customer goals and tasks.....	4
Tasks and subtasks .....	4
Focusing on what's important .....	5
Applying TCR metrics .....	5
Step 1: Understand frequently occurring customer goals.....	5
Step 2: Define tasks and subtasks handled by the IVR .....	6
Step 3: Consider additional sources of information.....	6
Measuring TCR .....	8
Using TCR measurement to track ROI at every level.....	9
Conclusion.....	10
About Tellme .....	10
Appendix A: Sample goals, tasks, and subtasks in selected industries.....	11

The information contained in this document represents the current view of Microsoft Corporation on the issues discussed as of the date of publication. Because Microsoft must respond to changing market conditions, it should not be interpreted to be a commitment on the part of Microsoft, and Microsoft cannot guarantee the accuracy of any information presented after the date of publication.

This White Paper is for informational purposes only. MICROSOFT MAKES NO WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AS TO THE INFORMATION IN THIS DOCUMENT.

Complying with all applicable copyright laws is the responsibility of the user. Without limiting the rights under copyright, no part of this document may be reproduced, stored in or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), or for any purpose, without the express written permission of Microsoft Corporation.

Microsoft may have patents, patent applications, trademarks, copyrights, or other intellectual property rights covering subject matter in this document. Except as expressly provided in any written license agreement from Microsoft, the furnishing of this document does not give you any license to these patents, trademarks, copyrights, or other intellectual property.

### Summary

An interactive voice response (IVR) platform is a sizable investment and one that requires ongoing attention to ensure it delivers positive returns. Businesses need to know which IVR investments will improve caller experiences and yield desired results. Yet, when it comes to IVR improvements, a lack of information and insight has historically stood in the way of smart, bottom-line decision making. As a result, businesses have relied on indirect metrics like containment rate to assess ROI. Disparate recommendations in the industry have prevented the establishment of a standard metric, but Task Completion Rate (TCR) promises to be the metric that will provide measurable insight into IVR performance, and ultimately ROI.

This white paper provides a deeper understanding of how TCR applies to IVR systems by:

- Defining TCR and its contributions to overall customer satisfaction
- Identifying tasks to measure in the IVR
- Establishing methods to measure TCR in IVR applications
- Illustrating how TCR reports answer questions that are important to business executives, analysts, managers, and developers

This is the second in a series of white papers on IVR performance, available for download from the Performance Optimization section in the Tellme Resource Center at [www.tellme.com/business/resource\\_center#performance](http://www.tellme.com/business/resource_center#performance). The first paper, “Maximizing IVR Value,” provides a high-level guide to using TCR to prioritize high-impact adjustments that can be made to drive measurable business benefits.

### Task Completion Rate: the one metric that matters

TCR allows businesses to monitor and measure the success of user interactions with IVR applications. It helps to highlight problem areas and opportunities for improvement, while also indicating alignment with business objectives. The following sections define TCR and explain its place within the broader customer service context.

#### The difference between customer goals and tasks

Most customers who engage with a company's customer service infrastructure have a singular focus: to accomplish a **goal**. Typically, goals are fairly high-level, such as planning a trip or managing a financial portfolio.

It is essential to keep customer goals in mind when designing the IVR. However, it is important to note that it may not be appropriate for a customer to complete his entire goal within a single channel, such as the IVR. Customer goals can be divided into task and subtasks, which may be fulfilled through different interaction channels—even through information gathering from external sources. Customers will likely contact a company by phone for one or more of the tasks, en route to accomplishing the goal. When measuring IVR performance, it is critical to understand specifically those tasks the customer is trying to achieve on the phone.

#### Tasks and subtasks

Tasks are the guideposts for designing a successful IVR and determining whether it is doing its job. When a caller is able to easily complete his task through self-service, the IVR has served its purpose: to reduce call center costs, instill customer confidence in the brand's automated service, and strengthen customer loyalty.

- A **task** encompasses a customer interaction, from identification of the customer's intent to a final outcome. This may be a hang-up (due to completion in a fully automated environment) or a transfer to an agent for additional assistance. Tasks are often unique to a particular industry and roll up to a related goal. For example, to accomplish the goal of booking a flight, the related travel industry tasks might be checking mileage balances, booking a new reservation, or modifying an existing reservation. These are all common tasks in the travel industry and the TCR for each of these tasks can be benchmarked across peer companies within the industry.
- **Subtasks** divide tasks into commonly repeated dialogs, such as login, authentication, main menu selection, and yes/no confirmation. Subtasks may be common across many industries, making it possible for even disparate IVRs to benchmark against each other. For example, the proper handling of yes/no confirmations can be compared across all IVRs. However, such subtask comparisons do not indicate who has the

“Seek first to understand, then to be understood.”

Stephen R. Covey

better overall IVR performance since they do not capture whether the full task was completed successfully.

Customers are not consciously aware of tasks and subtasks, until they interfere with the ability to accomplish a goal efficiently. In other words, all the steps in the experience should be vital, efficient, and easy to accomplish to ensure that callers find them helpful and not a hindrance.


### Focusing on what's important

One of the challenges in measuring and improving IVR performance comes in knowing where to focus development efforts. Investment in each component of the IVR promises qualitative improvement, but companies lack a way to identify which component will yield the greatest improvement: voice user interface (VUI) design, speech grammars, audio quality, speech recognition technology, network quality, personalization, or integration with other channels. Further, companies often lack a framework for quantifying the ROI from those investments.

The industry is rife with recommendations that may not consider the whole picture, instead honing in on indirect metrics, such as containment and speech recognition rates. By adopting this approach, a business may be misled by flawed results and overlook how changes in one area impact the performance of others. For example, collecting an account number is a subtask that a company might tune to very high recognition accuracy. Yet, if callers cannot find their numbers easily, TCRs will be low.

Furthermore, businesses must be careful not to view TCR as a one-size-fits-all benchmark. TCR differs by industry and by task. For example, the TCR for checking an account balance with a financial institution is typically much higher than the TCR for booking a flight with an airline.

## Applying TCR metrics

 For a breakdown of common goals, tasks, and subtasks by vertical segment, refer to the Appendix in this document.

TCR allows businesses to gauge the performance of their IVRs not only holistically, but also, most importantly, with the customer's experience top of mind. To evaluate performance, it's helpful to put it in context of the entire conversation a customer has with a business. Consider the example of a customer engaging with his insurance company to get his car repaired after an accident.

### Step 1: Understand frequently occurring customer goals

Most voice application design starts with drafting a business requirements document (BRD). Central to this is understanding customer needs and how the project will fulfill those needs. In the example of an insurance company, common customer goals may include purchasing a new policy, filling a claim after an accident, or updating premium payment methods. These customer

## Measuring IVR Performance

goals would be captured in the BRD and the company would evaluate performance in serving each of these customer goals across all customer contact channels.

**Customer Goal:** To get car repair completed and paid for after an accident

A thorough BRD comprehends best practices and lays the groundwork for successful IVR design, implementation, management, and ultimately, assessment. The BRD serves as a constant reference of what elements of the application are in or out of scope. As customer goals change, the BRD should evolve. In turn, TCRs may vary, illuminating areas where IVR performance can improve.

### Step 2: Define tasks and subtasks handled by the IVR

With customer goals clearly defined, it's possible to map them to specific IVR tasks and subtasks. In the case of the insured driver, the list might include the following:

- Tasks:**
- Report the accident and file a claim
  - Determine coverage
  - Request a rental car
  - Check on claim status
- Subtasks:**
- Enter login information, e.g., policy number
  - Confirm identity: Yes/No, DOB
  - Choose an option from the main menu, i.e., specify intent
  - Report accident: Date, type, other details
  - Hear coverage information
  - Speak with an agent

### Step 3: Consider additional sources of information

It is important to remember that the user experience is not limited to IVR interactions. When customers connect with a business, they are set on accomplishing a goal and will use the channel or mix of channels that are most appropriate, often based on convenience or environmental factors.

When considering ways to improve the IVR channel on its own, businesses can examine cross-channel interactions to find ways to streamline the IVR interaction. That way, all touchpoints can be optimized for the best customer experience.

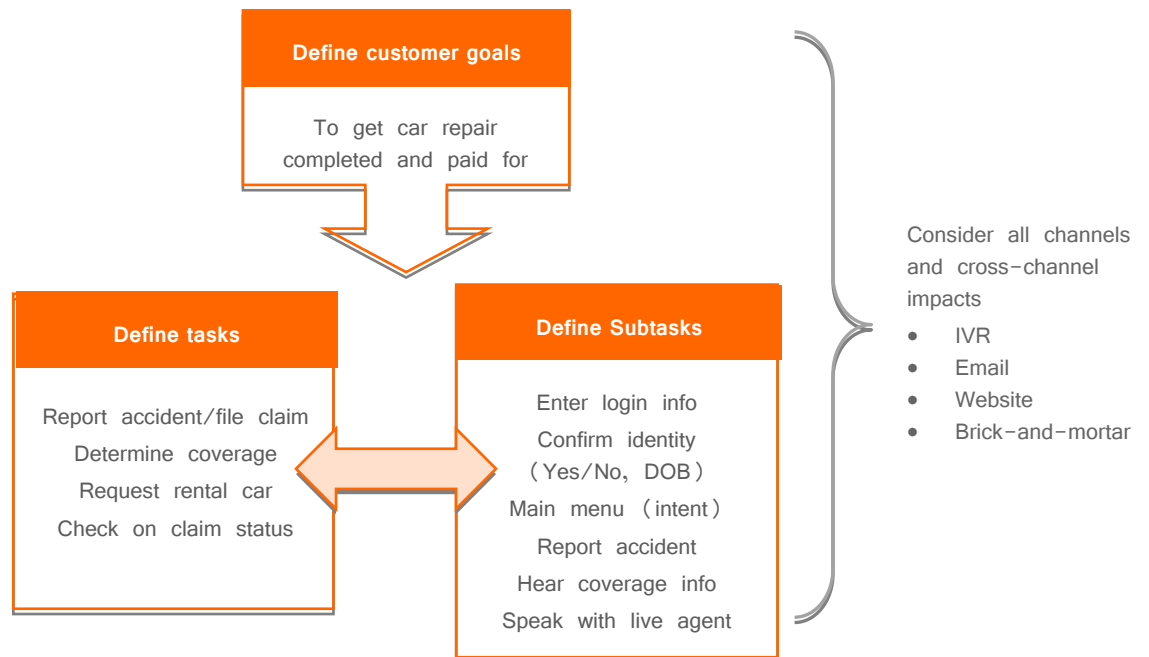
Using the car accident scenario, a customer might choose several channels to accomplish various tasks:

- Customer calls **insurance IVR** from his mobile phone at the scene of the accident.

## Measuring IVR Performance

- Customer, after giving some information to the IVR, is routed to a claims agent who initiates the claims process and **emails** the relevant information and next steps to the customer.
- The following day, the customer logs into the insurance company's **website** to check on the claim status and rental car coverage.
- Customer initiates **online chat** feature to ask question about rental car coverage.
- Customer still has questions about rental car coverage; calls **insurance IVR** to talk to live agent.
- Customer receives **email** from insurance provider, requesting feedback about recent online chat experience. Customer links to online feedback survey to submit feedback.

By understanding all the channels a customer can use — and how they overlap and influence each other — a business has a better picture of what's really affecting IVR performance.



**Figure 1** Measuring TCR starts with defining customer goals, tasks, and subtasks, while also comprehending all the channels that may impact IVR performance.

## Measuring TCR

To measure TCRs, voice application developers can start by defining and tagging each task within the application. They may demarcate task end points with standard VoiceXML <log> tags (or other appropriate programmatic means):

- When a task begins (task attempt)
- When the task is completed successfully (task success)
- When the user abandons the task by asking for an agent or hanging up (task opt-out)
- When the user is unable to complete the task due to an IVR issue, such as no matches or business logic (task failure)

By determining points of task success, or lack of it, in the call flow, it's possible to deduce when tasks fail. To calculate an overall task success rate for a given period, it's useful to look at:

$$[ \text{number of task successes} \div \text{number of task attempts} ]$$

Businesses can assess the effectiveness of their IVR strategies and adjust them accordingly by mapping task success rates back to higher-level customer goals.

Task Completion Summary Report						
Period: 11/15/2009 07:00 to 11/21/2009 23:59 ET						
Task Name	Attempts	Avg/Call	Successes	Comp Rate	Opt-outs	Rate
<b>- Authentication</b>	<b>38,885</b>	<b>1.00</b>	<b>31,067</b>	<b>78.89</b>	<b>2343</b>	<b>6.03</b>
Auth-AcctNum	27,641	1.00	20,399	73.80	1767	6.39
Auth-DOB	11,244	1.00	10,668	94.88	576	5.12
<b>MainMenu</b>	<b>44,215</b>	<b>1.21</b>	<b>37,503</b>	<b>84.82</b>	<b>6712</b>	<b>15.18</b>
<b>ClaimsMenu</b>	<b>17,607</b>	<b>1.43</b>	<b>12,862</b>	<b>73.05</b>	<b>4745</b>	<b>26.95</b>
<b>HearClaimNumber</b>	<b>8765</b>	<b>1.00</b>	<b>8648</b>	<b>98.67</b>	<b>117</b>	<b>1.33</b>
<b>CoverageRepeat</b>	<b>2394</b>	<b>2.11</b>	<b>1693</b>	<b>70.72</b>	<b>701</b>	<b>29.28</b>
<b>ClaimsStatusRepeat</b>	<b>3199</b>	<b>1.79</b>	<b>1216</b>	<b>38.01</b>	<b>1983</b>	<b>61.99</b>

Figure 2 Determining task success rate is key to measuring overall TCRs.



### Using TCR measurement to track ROI at every level

TCR allows different kinds of stakeholders to benchmark IVR performance at specific points in time. For example, business executives tend to be interested in higher-level performance statistics than developers. They may want to know how many people were able to sign up for a limited-time promotion through the IVR, without being transferred to a live agent. Additional use cases may include:

#### EVERY POINT COUNTS

When it comes to IVR performance, a little goes a long way. Recent enhancements on the Tellme platform have contributed to a 2 percentage point improvement in TCRs, which can translate to \$4 million in annual cost savings for a typical Tellme customer.

**When is 2% greater than 25%?** Some speech technology companies boast about large percentage improvements in various technical metrics, but those improvements may not improve your overall IVR performance and ROI. For example, a 25% improvement in word error rate (WER) on a recognition engine doesn't necessarily translate to any appreciable impact on TCRs. In this case, a 2% improvement in TCRs yields a much higher ROI than a 25% increase in a technical metric.

- **Business executives**
  - How has the call volume changed in response to a recent sales promotion?
  - What is the estimate of our future needs, based on our current port usage?
- **Business analysts and managers**
  - How much incoming call traffic has the application handled this month?
  - How much incoming call traffic did the application handle per day over the last month?
  - If the application changed recently, has traffic increased since the change occurred?
  - Has the incoming call traffic increased in the last six months?
  - Has the outgoing call traffic increased this month?
  - Do we have enough call center lines to handle transfers during peak voice traffic periods?
  - What are the most ports that are in use at any one time?
  - When is peak voice traffic happening?
- **Developers and quality assurance testers**
  - How do I trace exactly what happened during a specific call?
  - How can I tune and improve the voice application's overall performance?
  - What is the success rate for specific transactions in an application?
  - What areas in the application are caller utterances not being recognized?

### Conclusion

As with any business investment, an IVR system is only as valuable as its ability to meet clearly defined performance targets. TCR provides a single, significant, and quantifiable metric for measuring IVR performance against business objectives, using the customer experience as a barometer. By looking beyond narrow metrics, like automation rates or call containment, businesses can focus on caller success. Every time a customer accomplishes his goal, without the assistance of a live agent, the business saves money, builds loyalty, and strengthens brand preference.

For additional thought leadership on this topic, visit [www.tellme.com/business/resource\\_center#performance](http://www.tellme.com/business/resource_center#performance)

### About Tellme

Tellme operates the world's largest VoiceXML platform, improving automation and customer service performance for businesses across 2 billion+ calls every year. To deliver this world-class service, Tellme builds and maintains an award-winning platform that encompasses the following features:

“From a technological standpoint, Tellme's applications exhibit a great deal of breadth and maturity. The vendor has a strong focus on providing a positive customer experience.”

“Decision Matrix: selecting a speech applications vendor in North America”  
Ovum 2009

**Application Lifecycle Resources:** Customers, partners and developers who build applications on the Tellme platform use Application Lifecycle Resources to develop and optimize their applications throughout the lifecycle of the application. Tellme offers a variety of tools to ease voice application management and drive insights that can increase TCRs. Tellme helps you accomplish tasks such as: building and testing voice applications, changing your voice application in real-time, recording calls for tuning purposes, analyzing user segmentation and calling patterns, and much more.

**Core Platform Services:** Tellme experts manage, maintain and optimize the Core Platform Services to deliver the best performance on core platform functionality. Tellme's expertise in speech, audio and integrated customer experience enhance the quality of your inbound and outbound voice applications to enrich the caller experience, increase TCRs and create opportunities for further business growth.

**Network Services:** Tellme's industry leading carrier-grade network is optimized for scalability, security and reliability due to its attention to Network Services. Tellme customers enjoy both peace of mind and flexibility with a carrier-grade platform that supports the latest in technology. Tellme's powerful network-based platform encompasses carrier-grade TDM and VoIP telephony infrastructure to support your inbound and outbound voice traffic, as well as a highly reliable web infrastructure to support data transactions. With capacity on-demand, Tellme can easily handle seasonal or event-driven spikes in call volume, ensuring you are always available to your customers, and there's no bottleneck for important outbound communications.

## Appendix A: Sample goals, tasks, and subtasks in selected industries

### Airlines - Travel reservations

<u>Task</u>	<u>Subtasks</u>
Origin-Destination	verify/capture origin, capture destination
Date-Time	capture departure/return date and time
Passengers	capture number and names of passengers
Confirmation	verify itinerary
Payment	capture credit card information

### Banking - Get info and transfer funds

<u>Task</u>	<u>Subtasks</u>
Authentication	capture account number and PIN
Call reason	main menu, account action menu
Account information	present info, repeat prompt
Funds transfer	collect from/to accounts, amount, effective date

### Brokerage - Place trade

<u>Task</u>	<u>Subtasks</u>
Authentication	capture account number and PIN
Call reason	main menu
Place trade	collect type, equity, number of shares, effective time

### Wireless Carrier - Add minutes

<u>Task</u>	<u>Subtasks</u>
Authentication	verify PIN
Call reason	main menu, account menu
Add minutes	collect number, payment details