



## *Amazon Connect Agent Screen Recording*

### Evidencia 1

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## Sección 1: Project Charter (Acta Constitutiva del Proyecto)

### Resumen Ejecutivo

Amazon Connect es un centro de contacto en la nube omnicanal en el cual los agentes desde cualquier lugar pueden interactuar con los clientes. Recientemente, Amazon ha identificado competencia en cuanto a la experiencia del cliente relacionado a la utilización de tecnologías avanzadas y la introducción de técnicas de Inteligencia Artificial y Machine Learning. En este escenario, Amazon debe permanecer competitivo y explorar nuevas soluciones para la plataforma de Amazon Connect sin incurrir en grandes costos.

### Propósito del Proyecto/Justificación

Un buen servicio al cliente es el secreto para preservar a sus clientes. Es decir, las personas siempre vuelven al lugar donde fueron bien tratados. Amazon Connect ya proporciona diversas herramientas a sus clientes, pero con la implementación de este proyecto el servicio puede ser mucho mejor. De cierta forma en que todas las grabaciones que se realizarán podrán ser utilizadas y estudiadas con el propósito de entregar mejores soluciones, mejores tiempos, y hasta en un futuro agregar respuestas rápidas después de analizar los casos más requeridos. Con la no implementación de este sistema, Amazon Connect no tendrá ningún impacto negativo, pero por otro lado es una área de oportunidad que podría ser fácilmente explorada, y que sí tendría impacto positivo. Llevando Amazon Connect a un nivel mayor a sus competidores

### Necesidad de Negocio

El proyecto Agent SR ha sido creado para mejorar la experiencia de usuario a los clientes del Contact Center de Amazon (i.e., Amazon Connect). En este sentido, se espera que los supervisores de los agentes de servicio del centro de contacto cuenten con información que les apoye a mejorar el servicio a cliente que ofrecen a los clientes finales.

### Objetivos del Negocio

Los objetivos de negocio del proyecto soportan la cultura corporativa de Amazon centrada en el cliente, así como la adquisición de recursos humanos a través de proyectos académicos.

- Mejorar la experiencia de los clientes de Amazon Connect a través de la generación de herramientas tecnológicas que les permitan almacenar grabaciones de las llamadas.
- Diseñar e implementar un aplicativo que permita el registro de la pantalla, audio y video de los agentes de servicio que utilizan Amazon Connect para proveer el servicio al cliente.
- Maximizar el éxito de los clientes de Amazon Connect al mejorar el rendimiento de los agentes.
- Terminar la implementación de la funcionalidad en máximo 14 semanas

### Descripción del Proyecto

El proyecto consiste en hacer una solución full stack en la que creamos una aplicación web con el fin de proveer a los usuarios de Amazon Connect la opción de grabar las llamadas de los usuarios que contacten al Contact Center. La grabación de las llamadas incluye la grabación de audio de la llamada, grabación la pantalla, movimiento de mouse y teclas del agente. Se hace esto con el fin de mejorar la experiencia de los end users, por lo cual se almacenan estas grabaciones que posteriormente los supervisores de los agentes podrán ver y buscar áreas de oportunidad y mejora en cómo los agentes atienden y resuelven los problemas de los clientes.

## Objetivos del Proyecto y Criterios de éxito

- Generar una solución full stack para grabar y almacenar llamadas en las siguientes 14 semanas.
- Completar la lista de requerimientos de hardware y software en las primeras 5 semanas del proyecto.
- Crear la funcionalidad para grabar la pantalla, teclas, mouse y audio del agente junto con el almacenamiento de estas y posteriormente la búsqueda y filtros de grabaciones en las siguientes 10 semanas.
- Lograr una solución simulada y producto mínimo viable que nos permita probar la solución sin problemas de seguridad en las siguientes 12 semanas.
- Crear una solución utilizando los servicios web de AWS con los que nuestra aplicación se pueda conectar en las siguientes 14 semanas.

## Requerimientos

El proyecto debe cumplir con las siguientes listas de requerimientos para lograr el éxito:

- El aplicativo contará con distintos rangos de usuarios tales como: agente, supervisor y manager.
- El aplicativo permitirá capturar y grabar la pantalla del agente que atiende la llamada (incluyendo pulsaciones del teclado y movimientos del mouse), la voz del usuario final y la voz del agente.
- El aplicativo permitirá a los agentes ver sus propias grabaciones.
- El aplicativo permitirá a los supervisores y managers la búsqueda de grabaciones registradas a través de metadatos tales como ID del agente, timestamp, entre otros.
- El aplicativo permitirá la navegación de los registros a través de categorías pre-cargadas.
- El aplicativo permitirá a los supervisores y managers editar los metadatos de las grabaciones.
- El aplicativo permitirá a los managers hacer altas y bajas de supervisores.
- El aplicativo permitirá a los managers hacer altas y bajas de agentes, así como la asignación de supervisores a cada uno de ellos.
- El aplicativo deberá alinear las diversas pistas grabadas en un solo medio.
- El aplicativo automáticamente iniciará la grabación una vez que se haya establecido la conexión con el agente.
- El aplicativo permitirá la configuración de la funcionalidad de grabación.

- El aplicativo debe mostrar visualmente el estatus de grabación de la sesión.
- El aplicativo

## Restricciones

Las siguientes restricciones son parte del proyecto Agent SR.

- El aplicativo debe ser entregado bajo la licencia Apache versión 2.0
- El código deberá entregarse en un repositorio GitHub público
- Los resultados del proyecto deben publicarse bajo una licencia de código abierto
- Deberá utilizarse el API de Amazon Connect para realizar el desarrollo del aplicativo
- Deberá realizarse autenticación Servicio a Servicio cuando se integren el aplicativo web con el módulo Amazon Connect CCP
- El aplicativo requerirá un sistema de autenticación siguiendo las mejores prácticas de seguridad como 2FA.
- El aplicativo debe de usar uno de los servicios de AWS Web Services para el almacenamiento de información y hosteo de la aplicación web.

## Supuesto

Los siguientes supuestos se consideran para el proyecto AutoConnect. Con base en los acuerdos y a la firma del presente documento, todas las partes afirman que los siguientes supuestos son verdaderos y correctos:

- El entrenamiento de los alumnos se llevará a cabo a través de la Academia AWS
- Se espera que el proyecto genere un producto innovador, por lo tanto el cliente no estará definiendo lineamientos específicos para la implementación de cada una de las funcionalidades.
- El aplicativo final no se estará integrando a ningún ambiente producto de Amazon AWS.
- AWS nos proveerá créditos para trabajar con la plataforma de Amazon Connect y su API.
- Se cumplirán con todos los requerimientos establecidos al inicio del proyecto.
- Se estará en constante comunicación con el personal de Amazon por lo que todos los stakeholders están al tanto durante todo el desarrollo.

## Descripción del Alcance

El proyecto AutoConnect incluirá el diseño, pruebas y deploy de un sistema full stack que permitirá la grabación de la actividad de los agentes y llamada entre agentes y end users, de manera que se puedan almacenar las grabaciones y supervisores de los agentes puedan buscar, filtrar y ver dichas grabaciones. Todo los recursos como el personal, hardware y software van a ser manejados y utilizados por el equipo de proyecto. El proyecto AutoConnect va a ser independiente de Amazon Connect pero el API de AWS será utilizado. Este proyecto tiene una duración de 14 semanas y el

objetivo es añadir más herramientas para Amazon Connect de manera que los usuarios puedan mejorar la experiencia de su Contact Center.

## Riesgos

Los siguientes riesgos para el proyecto de AutoConnect han sido identificados:

- Tiempo limitado y fechas cortas para el desarrollo del proyecto.
- No hay soporte necesario para mantener el proyecto.
- Amenazas externas que afecten el proyecto y traspasen la parte de ciberseguridad del proyecto.
- Mala comunicación con los stakeholders.
- En caso de un ataque cibernético o fallas en alguno de los equipos de desarrollo, los archivos y documentos del proyecto se pueden perder, retrasando el proyecto y los avances de este.

El project manager va determinar y ejecutar las estrategias contra riesgo necesarias para minimizar dichos riesgos:

- Mantener al tanto las herramientas en donde los programadores pueden ir visualizando las tareas por hacer, fechas de entrega e hitos importantes, así como mantener al equipo informado.
- El project manager hablará con los stakeholders en caso de que surja algún inconveniente en cuanto a soporte.
- Habrá designado un equipo que se encargará de agregar funcionalidades de seguridad para mantener la integridad del código y evitar software malicioso.
- Se establecerán canales de comunicación en donde se estará en constante comunicación.
- Se utilizarán herramientas que de forma automática generan copias de seguridad para tener respaldos siempre de la versión más reciente del proyecto.

## Entregables del Proyecto

Los siguientes entregables deben cumplirse al terminar el proyecto Autoconnect:

- Solución full-stack completa e instalada
- Documentación de las funcionalidades de la aplicación
- MVP
- SRS
- Wiki
- Control de Cambios
- WBS

## Resumen de Calendarización de Hitos

En la siguiente tabla podemos observar los el calendario de los hitos a cumplir en el proyecto Autoconnect. En caso de que los requerimientos se actualicen para ser más específicos, las fechas podrían ser modificadas. Cualquier cambio deberá ser comunicado en las reuniones del estatus del proyecto por el project manager.

| <b>Calendario de hitos</b><br><b>Lista de hitos clave para arrancar con el proyecto</b> |  |
|---|--|
| <b>Hito</b>   | <b>Fecha de entrega<br/>(dd/mm/yyyy)</b> |
| · Project Start   | 14/02/2022                               |
| · Complete Solution Design  | 06/05/2022                               |
| · Acquire Hardware and Software   | 12/05/2022                               |
| · Complete Solution Simulation with New Hardware/Software                               | 20/05/2022                               |
| · Complete Solution Simulation and Testing  | 06/06/2022                               |
| · Deploy Solution   | 25/06/2022                               |
| · Project Complete  | 17/07/2022                               |

## Resumen de Presupuesto

| <b>Resumen de Presupuesto – Lista de Componentes y Costos del Proyecto</b> |                             |
|--|-----------------------------|
| <b>Componente del Proyecto</b>   | <b>Costo del Componente</b> |
| · Colegiatura de 5 personas  | \$645,000                   |
| · Costo de Gasolina de 5 personas por 5 meses                              | \$55,000                    |
| · Comida de 5 personas por 15 semanas (\$425 por día)                      | \$31,875                    |
| · Horas de trabajo de 5 personas por 15 semanas (3000 horas)               | \$4,500,000                 |
| <b>Total</b>   | <b>\$5,231,875</b>          |

## Requerimientos para aprobar el Proyecto

El éxito del proyecto se logrará cuando el sistema Autoconnect sea probado en su totalidad y cumpla con todos los requerimientos documentados, tanto funcionales como no funcionales. Así mismo, se deberán haber realizado las pruebas pertinentes para verificar que el sistema es seguro y no es susceptible a ataques. El sistema debe ser desplegado en una solución full stack que se conecte con el API de Amazon Web Services e incluya la documentación en un blog sobre el proyecto. El éxito será determinado por los Project Sponsor, los cuales son miembros del equipo de Amazon y adicionalmente, los profesores del bloque TC3004B.

## Project Manager

Manuel Hernandez será el Project Manager durante la realización del proyecto Amazon Capstone 2022. La responsabilidad de Manuel es administrar todas las tareas, horarios y comunicación relacionados con el proyecto. Nuestro equipo consiste en 5 estudiantes de ITC. Manuel coordinará todos los requerimientos de recursos del proyecto entre todo el equipo. Manuel entregará actualizaciones semanales al equipo y al sponsor del proyecto.

## Autorización

Approved by the Project Sponsor:

Marlene Ofelia Sánchez Escobar

Date: 04/03/2022

## Sección 2: Plan de gestión del proyecto

### Introducción

The Introduction provides a high-level overview of the project and what is included in this Project Management Plan. This should include a high-level description of the project and describe the projects deliverables and benefits. Excessive detail is not necessary in this section as the other sections of the project plan will include this information. This section should provide a summarized framework of the project and its purpose. Look back at the Project Charter for information to include in this section.

Total Software Incorporated (TSI) has recently approved the SmartVoice project to move forward for project initiation within the research and development (R&D) group. This project will result in the development of new voice recognition software and supports TSI's corporate strategy of providing progressive solutions to clients which improve productivity in both the workplace and home environment. While voice recognition software is currently available, TSI believes that new technological developments will enable our team to develop a solution far superior to what is currently available.



TSI has been successful in gaining market share because of its aggressive pursuit of product quality, ease of use, flexibility, and customer service. Additionally, customers understand that our products may be applied to a wide range of uses for business and personal functions. By leveraging our reputation for superior quality and user-friendly products, and capitalizing on new technology, TSI can position itself as the premier provider of effective and easy to use voice recognitions software in today's marketplace.

## Enfoque de Gestión del Proyecto

This section is where you outline the overall management approach for the project. This section should describe, in general terms, the roles and authority of project team members. It should also include which organizations will provide resources for the project and any resource constraints or limitations. If there are any decisions which must be made by specific individuals—for example authorizing additional funding by the project sponsor—this should also be stated here. It should be written as an Executive Summary for the Project Management Plan.

The Project Manager, Joe Green, has the overall authority and responsibility for managing and executing this project according to this Project Plan and its Subsidiary Management Plans. The project team will consist of personnel from the coding group, quality control/assurance group, technical writing group, and testing group. The project manager will work with all resources to perform project planning. All project and subsidiary management plans will be reviewed and approved by the project sponsor. All funding decisions will also be made by the project sponsor. Any delegation of approval authority to the project manager should be done in writing and be signed by both the project sponsor and project manager.

The project team will be a matrix in that team members from each organization continue to report to their organizational management throughout the duration of the project. The project manager is responsible for communicating with organizational managers on the progress and performance of each project resource.

## Alcance del Proyecto

State the scope of the project in this section. The scope statement from the project charter should be used as a starting point; however, the project plan needs to include a much more detailed scope than the charter. This detail should include what the project does and does not include. The more detail included in this section, the better the product. This will help to clarify what is included in the project and help to avoid any confusion from project team members and stakeholders.

The scope of TSI's SmartVoice project includes the planning, design, development, testing, and transition of the SmartVoice voice recognition software package. This software will meet or exceed organizational software standards and additional requirements established in the project charter. The scope of this project also includes completion of all documentation, manuals, and training aids to be used in conjunction with the software. Project completion

will occur when the software and documentation package has been successfully executed and transitioned to TSI's manufacturing group for production.

All SmartVoice project work will be performed internally and no portion of this project will be outsourced. The scope of this project does not include any changes in requirements to standard operating systems to run the software, software updates or revisions.

## Listado de Hitos

Provide a summary list of milestones including dates for each milestone. Include an introductory paragraph in this section which provides some insight to the major milestones. This section should also mention or discuss actions taken if any changes to the milestones or delivery dates are required.

The below chart lists the major milestones for the SmartVoice Project. This chart is comprised only of major project milestones such as completion of a project phase or gate review. There may be smaller milestones which are not included on this chart but are included in the project schedule and WBS. If there are any scheduling delays which may impact a milestone or delivery date, the project manager must be notified immediately so proactive measures may be taken to mitigate slips in dates. Any approved changes to these milestones or dates will be communicated to the project team by the project manager.

| Milestone   | Description   | Date     |
|---|---|----------|
| Complete Requirements Gathering                     | All requirements for SmartVoice must be determined to base design upon                    | 2/28/xx  |
| Complete SmartVoice Design                          | This is the theoretical design for the software and its functionality                     | 5/31/xx  |
| Complete SmartVoice Coding                          | All coding completed resulting in software prototype                                      | 7/31/xx  |
| Complete SmartVoice Testing and Debugging           | All functionality tested and all identified errors corrected                              | 8/31/xx  |
| Complete Transition of SmartVoice to TSI Production | Completed software and documentation transitioned to operations group to begin production | 11/30/xx |

## Línea Base del Calendario y Work Breakdown Structure (WBS)

This section should discuss the WBS, WBS Dictionary, and Schedule baseline and how they will be used in managing the project's scope. The WBS provides the work packages to be performed for the completion of the project. The WBS Dictionary defines the work packages. The schedule baseline provides a reference point for managing project progress as it pertains to schedule and timeline. The schedule baseline and work breakdown

structure (WBS) should be created in Microsoft Project. The WBS can be exported from the MS Project file.

The WBS for the SmartVoice Project is comprised of work packages which do not exceed 40 hours of work but are at least 4 hours of work. Work packages were developed through close collaboration among project team members and stakeholders with input from functional managers and research from past projects.

The WBS Dictionary defines all work packages for the SmartVoice Project. These definitions include all tasks, resources, and deliverables. Every work package in the WBS is defined in the WBS Dictionary and will aid in resource planning, task completion, and ensuring deliverables meet project requirements.

The SmartVoice Project schedule was derived from the WBS and Project Charter with input from all project team members. The schedule was completed, reviewed by the Project Sponsor, and approved and base-lined. The schedule will be maintained as a MS Project Gantt Chart by the SmartVoice Project Manager. Any proposed changes to the schedule will follow TSI's change control process. If established boundary controls may be exceeded, a change request will be submitted to the Project Manager. The Project Manager and team will determine the impact of the change on the schedule, cost, resources, scope, and risks. If it is determined that the impacts will exceed the boundary conditions then the change will be forwarded to the Project Sponsor for review and approval. The SmartVoice boundary conditions are:

CPI less than 0.8 or greater than 1.2  
SPI less than 0.8 or greater than 1.2

If the change is approved by the Project Sponsor then it will be implemented by the Project Manager who will update the schedule and all documentation and communicate the change to all stakeholders in accordance with the Change Control Process.

The Project Schedule Baseline and Work Breakdown Structure are provided in Appendix A, Project Schedule and Appendix B, Work Breakdown Structure.

## Plan de Gestión del Cambio

This section should describe your change control process. Ideally, this process will be some type of organizational standard which is repeatable and done on most or all projects when a change is necessary. Changes to any project must be carefully considered and the impact of the change must be clear in order to make any type of approval decisions. Many organizations have change control boards (CCBs) which review proposed changes and either approve or deny them. This is an effective way to provide oversight and ensure adequate feedback and review of the change is obtained. This section should also identify who has approval authority for changes to the project, who submits the changes, how they are tracked and monitored.

For complex or large projects the Change Management Plan may be included as an appendix to the Project Management Plan or as a separate, stand-alone document. We have a detailed Change Management Plan template available on our website.

The following steps comprise TSI's organization change control process for all projects and will be utilized on the SmartVoice project:

Step #1: Identify the need for a change (Any Stakeholder)

Requestor will submit a completed TSI change request form to the project manager

Step #2: Log change in the change request register (Project Manager)

The project manager will maintain a log of all change requests for the duration of the project

Step #3: Conduct an evaluation of the change (Project Manager, Project Team, Requestor) The project manager will conduct an evaluation of the impact of the change to cost, risk, schedule, and scope

Step #4: Submit change request to Change Control Board (CCB) (Project Manager)

The project manager will submit the change request and analysis to the CCB for review

Step #5: Change Control Board decision (CCB)

The CCB will discuss the proposed change and decide whether or not it will be approved based on all submitted information

Step #6: Implement change (Project Manager)

If a change is approved by the CCB, the project manager will update and re-baseline project documentation as necessary as well as ensure any changes are communicated to the team and stakeholders

Any team member or stakeholder may submit a change request for the SmartVoice Project. The SmartVoice Project Sponsor will chair the CCB and any changes to project scope, cost, or schedule must meet his approval. All change requests will be logged in the change control register by the Project Manager and tracked through to completion whether approved or not.

## Plan de Gestión de la Comunicación

The purpose of the Communications Management Plan is to define the communication requirements for the project and how information will be distributed to ensure project success. You should give considerable thought to how you want to manage communications on every project. By having a solid communications management approach you'll find that many project management problems can be avoided. In this section you should provide an overview of your communications management approach. Generally, the Communications Management Plan defines the following:

- Communication requirements based on roles
- What information will be communicated
- How the information will be communicated
- When will information be distributed
- Who does the communication
- Who receives the communication

- Communications conduct

For larger and more complex projects, the Communications Management Plan may be included as an appendix or separate document apart from the Project Management Plan. We have a detailed Communications Management Plan template available on our website.

This Communications Management Plan sets the communications framework for this project. It will serve as a guide for communications throughout the life of the project and will be updated as communication requirements change. This plan identifies and defines the roles of SmartVoice project team members as they pertain to communications. It also includes a communications matrix which maps the communication requirements of this project, and communication conduct for meetings and other forms of communication. A project team directory is also included to provide contact information for all stakeholders directly involved in the project.

The Project Manager will take the lead role in ensuring effective communications on this project. The communications requirements are documented in the Communications Matrix below. The Communications Matrix will be used as the guide for what information to communicate, who is to do the communicating, when to communicate it, and to whom to communicate.

| Communication Type           | Description   | Frequency | Format    | Participants/ Distribution              | Deliverable                               | Owner           |
|------------------------------|---|-----------|-----------|---|---|-----------------|
| Weekly Status Report         | Email summary of project status                           | Weekly    | Email     | Project Sponsor, Team and Stakeholders  | Status Report                             | Project Manager |
| Weekly Project Team Meeting  | Meeting to review action register and status              | Weekly    | In Person | Project Team                            | Updated Action Register                   | Project Manager |
| Project Monthly Review (PMR) | Present metrics and status to team and sponsor            | Monthly   | In Person | Project Sponsor, Team, and Stakeholders | Status and Metric Presentation            | Project Manager |
| Project Gate Reviews         | Present closeout of project phases and kickoff next phase | As Needed | In Person | Project Sponsor, Team and Stakeholders  | Phase completion report and phase kickoff | Project Manager |

|                         |   |           |           |              |                          |                 |
|-------------------------|---|-----------|-----------|--------------|--------------------------|-----------------|
| Technical Design Review | Review of any technical designs or work associated with the project | As Needed | In Person | Project Team | Technical Design Package | Project Manager |
|-------------------------|---|-----------|-----------|--------------|--------------------------|-----------------|

Project team directory for all communications is:

| Name                           | Title                               | E mail                 | Office Phone | Cell Phone   |
|--------------------------------|-------------------------------------|------------------------|--------------|--------------|
| David Atias                    | Software Development Engineer       | datias@tec.mx          | xxx-xxx-xxxx | xxx-xxx-xxxx |
| Sandhya Edupuganti             | Senior Software Engineering Manager | sedupuganti@amazon-com | xxx-xxx-xxxx | xxx-xxx-xxxx |
| Carlos Alberto Salas Bernal    | Software Development Manager        | cbernal@tec.mx         | xxx-xxx-xxxx | xxx-xxx-xxxx |
| Rosa Thomas                    | Senior Software Development Manager | rthomas@amazon.com     | xxx-xxx-xxxx | xxx-xxx-xxxx |
| Patricia Escamilla E.          | Sponsor                             | pescamil@tec.mx        | xxx-xxx-xxxx | xxx-xxx-xxxx |
| J. Julieta Noguez Monroy       | Sponsor                             | noguez@tec.mx          | xxx-xxx-xxxx | xxx-xxx-xxxx |
| Andrés F Torres Morán          | Sponsor                             | aftorres@tec.mx        | xxx-xxx-xxxx | xxx-xxx-xxxx |
| Marlene Ofelia Sánchez Escobar | Sponsor                             | marlenes@tec.mx        | xxx-xxx-xxxx | xxx-xxx-xxxx |
| Bruno Santos                   | Executive Sponsor                   | a016xxxxx@tec.mx       | xxx-xxx-xxxx | xxx-xxx-xxxx |
| Alejandro Hernández Ramos      | Technology Support                  | ahernandez@tec.mx      | xxx-xxx-xxxx | xxx-xxx-xxxx |

|                                  |                     |                  |              |              |
|----------------------------------|---------------------|------------------|--------------|--------------|
| Marco Antonio Bosquez González   | Process Improvement | a016xxxxx@tec.mx | xxx-xxx-xxxx | xxx-xxx-xxxx |
| Manuel Alejandro Hernandez Bravo | Project Manager     | a016xxxxx@tec.mx | xxx-xxx-xxxx | xxx-xxx-xxxx |
| Christian Jesús González Ramírez | Software Support    | a01657929@tec.mx | xxx-xxx-xxxx | xxx-xxx-xxxx |

#### Communications Conduct:

##### Meetings:

The Project Manager will distribute a meeting agenda at least 2 days prior to any scheduled meeting and all participants are expected to review the agenda prior to the meeting. During all project meetings the timekeeper will ensure that the group adheres to the times stated in the agenda and the recorder will take all notes for distribution to the team upon completion of the meeting. It is imperative that all participants arrive to each meeting on time and all cell phones and blackberries should be turned off or set to vibrate mode to minimize distractions. Meeting minutes will be distributed no later than 24 hours after each meeting is completed.

##### Email:

All email pertaining to the SmartVoice Project should be professional, free of errors, and provide brief communication. Email should be distributed to the correct project participants in accordance with the communication matrix above based on its content. All attachments should be in one of the organization's standard software suite programs and adhere to established company formats. If the email is to bring an issue forward then it should discuss what the issue is, provide a brief background on the issue, and provide a recommendation to correct the issue. The Project Manager should be included on any email pertaining to the SmartVoice Project.

##### Informal Communications:

While informal communication is a part of every project and is necessary for successful project completion, any issues, concerns, or updates that arise from informal discussion between team members must be communicated to the Project Manager so the appropriate action may be taken.

## Plan de Gestión del Costo

The Cost Management Plan clearly defines how the costs on a project will be managed throughout the project's lifecycle. It sets the format and standards by which the project costs are measured, reported, and controlled. Working within the cost management guidelines is imperative for all project team members to ensure successful completion of the project.



These guidelines may include which level of the WBS cost accounts will be created in and the establishment of acceptable variances. The Cost Management Plan:

- Identifies who is responsible for managing costs
- Identifies who has the authority to approve changes to the project or its budget
- How cost performance is quantitatively measured and reported upon
- Report formats, frequency and to whom they are presented

For complex or large projects the Cost Management Plan may be included as an appendix to the Project Management Plan or as a separate, stand-alone document. We have a detailed Cost Management Plan template available on our website.

The Project Manager will be responsible for managing and reporting on the project's cost throughout the duration of the project. The Project Manager will present and review the project's cost performance during the monthly project status meeting. Using earned value calculations, the Project Manager is responsible for accounting for cost deviations and presenting the Project Sponsor with options for getting the project back on budget. All budget authority and decisions, to include budget changes, reside with the SmartVoice Project Sponsor.

For the SmartVoice Project, control accounts will be created at the fourth level of the WBS which is where all costs and performance will be managed and tracked. Financial performance of the SmartVoice Project will be measured through earned value calculations pertaining to the project's cost accounts. Work started on work packages will grant that work package with 50% credit; whereas, the remaining 50% is credited upon completion of all work defined in that work package. Costs may be rounded to the nearest dollar and work hours rounded to the nearest whole hour.

Cost and Schedule Performance Index (CPI and SPI respectively) will be reported on a monthly basis by the Project Manager to the Project Sponsor. Variances of 10% or +/- 0.1 in the cost and schedule performance indexes will change the status of the cost to yellow or cautionary. These will be reported and if it's determined that there is no or minimal impact on the project's cost or schedule baseline then there may be no action required. Cost variances of 20%, or +/- 0.2 in the cost and schedule performance indexes will change the status of the cost to red or critical. These will be reported and require corrective action from the Project Manager in order to bring the cost and/or schedule performance indexes back in line with the allowable variance. Any corrective actions will require a project change request and be must approved by the CCB before it can be implemented.

Earned value calculations will be compiled by the Project Manager and reported at the monthly project status meeting. If there are indications that these values will approach or reach the critical stage before a subsequent meeting, the Project Manager will communicate this to the Project Sponsor immediately.

## **Plan de Gestión del Aprovisionamiento**

The Procurement Management Plan should be defined enough to clearly identify the necessary steps and responsibilities for procurement from the beginning to the end of a



project. The project manager must ensure that the plan facilitates the successful completion of the project and does not become an overwhelming task to manage. The project manager will work with the project team, contracts/purchasing department, and other key players to manage the procurement activities.

For larger projects or projects with more complicated procurement management requirements, you can include the Procurement Management Plan as a separate document apart from the Project Management Plan. We have a detailed Procurement Management Plan available on our website.

The Project Manager will provide oversight and management for all procurement activities under this project. The Project Manager is authorized to approve all procurement actions up to \$50,000. Any procurement actions exceeding this amount must be approved by the Project Sponsor.

While this project requires minimal or no procurement, in the event procurement is required, the Project Manager will work with the project team to identify all items or services to be procured for the successful completion of the project. The Project Manager will then ensure these procurements are reviewed by the Program Management Office (PMO) and presented to the contracts and purchasing groups. The contracts and purchasing groups will review the procurement actions, determine whether it is advantageous to make or buy the items or resource required services internally, and begin the vendor selection, purchasing and the contracting process.

In the event a procurement becomes necessary, the Project Manager will be responsible for management any selected vendor or external resource. The Project Manager will also measure performance as it relates to the vendor providing necessary goods and/or services and communicate this to the purchasing and contracts groups.

## **Plan de Gestión del Alcance del Proyecto**

It is important that the approach to managing the projects' scope be clearly defined and documented in detail. Failure to clearly establish and communicate project scope can result in delays, unnecessary work, failure to achieve deliverables, cost overruns, or other unintended consequences. This section provides a summary of the Scope Management Plan in which it addresses the following:

- Who has authority and responsibility for scope management
- How the scope is defined (i.e. Scope Statement, WBS, WBS Dictionary, Statement of Work, etc.)
- How the scope is measured and verified (i.e. Quality Checklists, Scope Baseline, Work Performance Measurements, etc.)
- The scope change process (who initiates, who authorizes, etc.)
- Who is responsible for accepting the final project deliverable and approves acceptance of project scope

We have a detailed Scope Management Plan available on our website which can be included as an appendix to the Project Management Plan for larger or more complex projects. Be sure to review it and determine if it's necessary for managing your project.

Scope management for the SmartVoice Project will be the sole responsibility of the Project Manager. The scope for this project is defined by the Scope Statement, Work Breakdown Structure (WBS) and WBS Dictionary. The Project Manager, Sponsor, and Stakeholders will establish and approve documentation for measuring project scope which includes deliverable quality checklists and work performance measurements.

Proposed scope changes may be initiated by the Project Manager, Stakeholders or any member of the project team. All change requests will be submitted to the Project Manager who will then evaluate the requested scope change. Upon acceptance of the scope change request the Project Manager will submit the scope change request to the Change Control Board and Project Sponsor for acceptance. Upon approval of scope changes by the Change Control Board and Project Sponsor the Project Manager will update all project documents and communicate the scope change to all stakeholders. Based on feedback and input from the Project Manager and Stakeholders, the Project Sponsor is responsible for the acceptance of the final project deliverables and project scope.

The Project Sponsor is responsible for formally accepting the project's final deliverable. This acceptance will be based on a review of all project documentation, testing results, beta trial results, and completion of all tasks/work packages and product functionality.

## **Plan de Gestión del Calendario**

This section provides a general framework for the approach which will be taken to create the project schedule. Effective schedule management is necessary for ensuring tasks are completed on time, resources are allocated appropriately, and to help measure project performance. This section should include discussion of the scheduling tool/format, schedule milestones, and schedule development roles and responsibilities.

Be sure to check out the detailed Schedule Management Plan available on our website. The separate Schedule Management Plan is suitable for larger projects or projects where the schedule management is more formalized.

Project schedules for the SmartVoice Project will be created using MS Project 2007 starting with the deliverables identified in the project's Work Breakdown Structure (WBS). Activity definition will identify the specific work packages which must be performed to complete each deliverable. Activity sequencing will be used to determine the order of work packages and assign relationships between project activities. Activity duration estimating will be used to calculate the number of work periods required to complete work packages. Resource estimating will be used to assign resources to work packages in order to complete schedule development.

Once a preliminary schedule has been developed, it will be reviewed by the project team and any resources tentatively assigned to project tasks. The project team and resources

must agree to the proposed work package assignments, durations, and schedule. Once this is achieved the project sponsor will review and approve the schedule and it will then be base lined.

In accordance with TSI's organizational standard, the following will be designated as milestones for all project schedules:

- Completion of scope statement and WBS/WBS Dictionary
- Base lined project schedule
- Approval of final project budget
- Project kick-off
- Approval of roles and responsibilities
- Requirements definition approval
- Completion of data mapping/inventory
- Project implementation
- Acceptance of final deliverables

Roles and responsibilities for schedule development are as follows:

The project manager will be responsible for facilitating work package definition, sequencing, and estimating duration and resources with the project team. The project manager will also create the project schedule using MS Project 2007 and validate the schedule with the project team, stakeholders, and the project sponsor. The project manager will obtain schedule approval from the project sponsor and baseline the schedule.

The project team is responsible for participating in work package definition, sequencing, duration, and resource estimating. The project team will also review and validate the proposed schedule and perform assigned activities once the schedule is approved.

The project sponsor will participate in reviews of the proposed schedule and approve the final schedule before it is base lined.

The project stakeholders will participate in reviews of the proposed schedule and assist in its validation.

## **Plan de Gestión de la Calidad**

This section discusses how quality management will be used to ensure that the deliverables for the project meet a formally established standard of acceptance. All project deliverables should be defined in order to provide a foundation and understanding of the tasks at hand and what work must be planned. Quality management is the process by which the organization not only completes the work but completes the work to an acceptable standard. Without a thorough Quality Management Plan, work may be completed in a substandard or unacceptable manner. This section should include quality roles and responsibilities, quality control, quality assurance, and quality monitoring.

For larger or more complex projects, the Quality Management Plan may be included as an appendix or separate document. A detailed Quality Management Plan is available for use on our website.

#### REFERENCIA A:

##### PLAN DE SQA (RESUMIDO)

- PLAN DE PRUEBAS
- PLAN DE REVISIONES

All members of the SmartVoice project team will play a role in quality management. It is imperative that the team ensures that work is completed at an adequate level of quality from individual work packages to the final project deliverable. The following are the quality roles and responsibilities for the SmartVoice Project:

The Project Sponsor is responsible for approving all quality standards for the SmartVoice Project. The Project Sponsor will review all project tasks and deliverables to ensure compliance with established and approved quality standards. Additionally, the Project Sponsor will sign off on the final acceptance of the project deliverable.

The Project Manager is responsible for quality management throughout the duration of the project. The Project Manager is responsible for implementing the Quality Management Plan and ensuring all tasks, processes, and documentation are compliant with the plan. The Project Manager will work with the project's quality specialists to establish acceptable quality standards. The Project Manager is also responsible for communicating and tracking all quality standards to the project team and stakeholders.

The Quality Specialists are responsible for working with the Project Manager to develop and implement the Quality Management Plan. Quality Specialists will recommend tools and methodologies for tracking quality and standards to establish acceptable quality levels. The Quality Specialists will create and maintain Quality Control and Assurance Logs throughout the project.

The remaining member of the project team, as well as the stakeholders will be responsible for assisting the Project Manager and Quality Specialists in the establishment of acceptable quality standards. They will also work to ensure that all quality standards are met and communicate any concerns regarding quality to the Project Manager.

Quality control for the SmartVoice Project will utilize tools and methodologies for ensuring that all project deliverables comply with approved quality standards. To meet deliverable requirements and expectations, we must implement a formal process in which quality standards are measured and accepted. The Project Manager will ensure all quality standards and quality control activities are met throughout the project. The Quality Specialists will assist the Project Manager in verifying that all quality standards are met for each deliverable. If any changes are proposed and approved by the Project Sponsor and CCB, the Project Manager is responsible for communicating the changes to the project team and updating all project plans and documentation.

Quality assurance for the SmartVoice Project will ensure that all processes used in the completion of the project meet acceptable quality standards. These process standards are in place to maximize project efficiency and minimize waste. For each process used

throughout the project, the Project Manager will track and measure quality against the approved standards with the assistance of the Quality Specialists and ensure all quality standards are met. If any changes are proposed and approved by the Project Sponsor and CCB, the Project Manager is responsible for communicating the changes to the project team and updating all project plans and documentation.

## **Plan de Gestión del Riesgo**

This section provides a general description for the approach taken to identify and manage the risks associated with the project. It should be a short paragraph or two summarizing the approach to risk management on this project.

Since risk management is a science in itself, we have many risk management templates available on our website. Look for the detailed Risk Management Plan, Risk Register along with templates for performing a risk assessment meeting.

The approach for managing risks for the SmartVoice Project includes a methodical process by which the project team identifies, scores, and ranks the various risks. Every effort will be made to proactively identify risks ahead of time in order to implement a mitigation strategy from the project's onset. The most likely and highest impact risks were added to the project schedule to ensure that the assigned risk managers take the necessary steps to implement the mitigation response at the appropriate time during the schedule. Risk managers will provide status updates on their assigned risks in the bi-weekly project team meetings, but only when the meetings include their risk's planned timeframe.

Upon the completion of the project, during the closing process, the project manager will analyze each risk as well as the risk management process. Based on this analysis, the project manager will identify any improvements that can be made to the risk management process for future projects. These improvements will be captured as part of the lessons learned knowledge base.

## **Registro de Riesgo**

The Risk Register for this project is provided in Appendix C, Risk Register.

## **Plan de Gestión de Recursos Humanos**

Discuss how you plan to staff the project. This section should include discussion on matrixed or projectized organizational structure depending on which is being used for this project. This section should also include how resources will be procured and managed as well as the key resources needed for the project.

The SmartVoice Project will consist of a matrix structure with support from various internal organizations. All work will be performed internally. Staffing requirements for the SmartVoice Project include the following:

Project Manager (1 position) – responsible for all management for the SmartVoice Project. The Project Manager is responsible for planning, creating, and/or managing all work

activities, variances, tracking, reporting, communication, performance evaluations, staffing, and internal coordination with functional managers.

Senior Programmer (1 position) – responsible for oversight of all coding and programming tasks for the SmartVoice Project as well as ensuring functionality is compliant with quality standards. Responsible for working with the Project Manager to create work packages, manage risk, manage schedule, identify requirements, and create reports. The Senior Programmer will be managed by the Project Manager who will provide performance feedback to the functional manager.

Programmer (1 position) – responsible for coding and programming for the SmartVoice Project. All coding and programming tasks will be reviewed by the Senior Programmer prior to implementation. Responsibilities also include assisting with risk identification, determining impacts of change requests, and status reporting. The Programmer will be managed by the Project Manager and feedback will be provided to the functional manager for performance evaluations by the Project Manager and Senior Programmer.

Senior Quality Specialist (1 position) – responsible for assisting the Project Manager in creating quality control and assurance standards. The Senior Quality Specialist is also responsible for maintaining quality control and assurance logs throughout the project. The Senior Quality Specialist will be managed by the Project Manager who will also provide feedback to the functional manager for performance evaluations.

Quality Specialist (1 position) – responsible for assisting the Project Manager and Senior Quality Specialist in creating and tracking quality control and assurance standards. The Quality Specialist will have primary responsibility for compiling quality reporting and metrics for the Project Manager to communicate. The Quality Specialist will be managed by the Project Manager who will provide feedback, along with the Senior Quality Specialist to the functional manager for performance evaluations.

Technical Writer (1 position) – responsible for compiling all project documentation and reporting into organizational formats. Responsible for assisting the Project Manager in Configuration Management and revision control for all project documentation. Responsible for scribing duties during all project meetings and maintaining all project communication distribution lists. The Technical Writer will be managed by the Project Manager who will also provide feedback to the functional manager for performance evaluations.

Testing Specialist (1 position) – responsible for helping establish testing specifications for the SmartVoice Project with the assistance of the Project Manager and Programmers. Responsible for ensuring all testing is complete and documented in accordance with TSI standards. Responsible for ensuring all testing resources are coordinated. The Testing Specialist will be managed by the Project Manager who will also provide feedback to the functional manager for performance evaluations.

The Project Manager will negotiate with all necessary TSI functional managers in order to identify and assign resources for the SmartVoice Project. All resources must be approved

by the appropriate functional manager before the resource may begin any project work. The project team will not be co-located for this project and all resources will remain in their current workspace.

## Calendario de Recursos

Include a Resource Calendar as part of your project plan. The resource calendar identifies key resources needed for the project and the times/durations they'll be needed. Some resources may be needed for the entire length of the project while others may only be required for a portion of the project. This information must be agreed to by the Project Sponsor and Functional Managers prior to beginning the project.

The SmartVoice Project will require all project team members for the entire duration of the project although levels of effort will vary as the project progresses. The Project is scheduled to last one year with standard 40 hour work weeks. If a project team member is not required for a full 40 hour work week at any point during the project, their efforts outside of the SmartVoice Project will be at the discretion of their Functional Manager.

## Línea base del Costo

This section contains the cost baseline for the project upon which cost management will be based. The project will use earned value metrics to track and manage costs and the cost baseline provides the basis for the tracking, reporting, and management of costs.

The cost baseline for the SmartVoice project includes all budgeted costs for the successful completion of the project.

| Project Phase | Budgeted Total | Comments   |
|---------------|----------------|--|
| Planning      | \$350,000      | Includes work hours for all project team members for gathering requirements and planning project |
| Design        | \$250,000      | Includes work hours for all project team members for work on SmartVoice conceptual design        |
| Coding        | \$200,000      | Includes all work hours for coding of SmartVoice   |



|                         |           |   |
|-------------------------|-----------|---|
| Testing                 | \$175,000 | Includes all work hours for testing (including beta testing) of SmartVoice software |
| Transition and Closeout | \$150,000 | Includes all work hours for transition to operations and project closeout           |

## Línea Base de la Calidad

This section should include the quality baseline for the project. The purpose of this baseline is to provide a basis for ensuring that quality can be measured to determine if acceptable quality levels have been achieved. It is important for all projects to clearly define and communicate quality standards and the quality baseline serves this purpose.

The SmartVoice Project must meet the quality standards established in the quality baseline. The quality baseline is the baseline which provides the acceptable quality levels of the SmartVoice Project. The software must meet or exceed the quality baseline values in order to achieve success.

| Item                     | Acceptable Level  | Comments                                      |
|--------------------------|---|---|
| Voice Recognition        | At least 98% recognition level with 2% or less errors in text                                       | Using standard TSI English language databases |
| Compatibility            | No errors associated with running software with compatible applications                             | Using the _____ suite of applications         |
| Supporting Documentation | Less than 1% failure rate in beta testing new users to run setup and execute software functionality |   |

## Aceptación del Sponsor

Approved by the Project Sponsor:

\_\_\_\_\_ Marlene Ofelia Sánchez Escobar

Date:\_\_\_\_\_.



## **Sección 3: Anexos**

### **Minutas de Reuniones**