Technology Transfer Planning Template

Sample Output Reports

by

Center on Knowledge Translation

KT4TT

for Technology Transfer
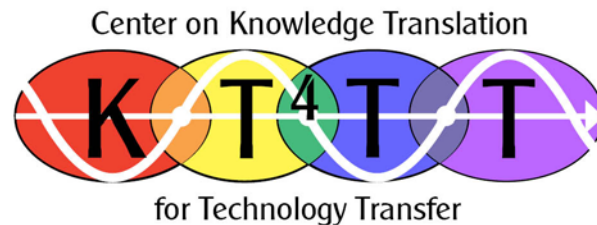
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Introduction

Explore five different output reports to learn about how the technology transfer planning template (TTPT) can benefit you. These examples demonstrate the various output report formats using content from an example project called the Expanded Keyboard.

Index and Report Descriptions

Page 3: Summary Output Report- Compiles user input into a narrative. It is useful for communicating with project partners and fleshing out plans for development and transfer projects.

Page 4: Technology Transfer Plan- This report matches user input to the Need to Knowledge Model steps. Users gain a complete picture of which best practices have been applied or addressed, and which may require additional consideration. Submit this report to project sponsors, use for creating proposals, or use in discussions with team members and collaborators.

Pages 5-6: SBIR Proposal Output Report- This report matches user input to commonly required components of Small Business Innovation Research (SBIR) Phase II commercialization plans. Use this report as a framework for preparing an SBIR proposal or for discussions with collaborators.

Page 7: Flow Chart- This chart matches user input to the Need to Knowledge Model steps in a flowchart format, indicating steps completed, in process, planned for the future, or skipped. Helpful for determining where a project stands in relation to the complete new product development process. Use this report for identifying missed steps, or as a front end to a technology transfer plan.

Page 8: Timeline- This timeline details when major project milestones will occur. Use for completing Annual Performance Reports, identifying upcoming tasks, or as a checklist for completed activities.

Summary Output Report

The Expanded Keyboard project began on September 30, 2015, and will continue until September 29, 2017. We are creating/developing an expanded keyboard that makes it easier for kids who have difficulty with fine motor control to use a graphing calculator. This project addresses an important unmet need. The problem is some children lack the fine motor control skills needed to successfully operate a Texas Instruments graphing or scientific calculator. This product solves the problem/fulfills the unmet need by providing an enlarged, lightweight, independently powered replica of the keyboard face of these calculators. Alternatives presently used by consumers include computer programs offering graphing capabilities. However, the product being developed is superior because it offers access to the same calculator being used by a student's peers. Features include enlarged key size, reducing an individual's need for fine motor control, tilt adjustable cover to improve display visibility, lightweight design with physical dimensions similar to a laptop, and battery powered operation.

Once it is available in the market, the product will be used by students who lack the fine motor control skills necessary to operate a standard scientific calculator, but wish to take courses in chemistry and mathematics. The product may be paid for by a user's caregiver, friend or relative.

To complete this project, we plan to conduct development activities; and some activities will be performed by external parties. Problems may be encountered while the product is being created. During development, we may encounter problems while enabling the interface to control the calculator's functions. When selling the product, there may be limited acceptance from teachers and school boards when students require this technology to complete tests. We will overcome these problems by working closely with the calculator's manufacturer to ensure we can achieve seamless functionality. We will work with teachers and school administrators to address their concerns regarding use of the technology for tests.

Technology Transfer Plan (abbreviated version)

This output report matches the Need to Knowledge Model's steps to your TTPT responses to form a comprehensive technology transfer plan. For your convenience, each step in the NtK Model is listed, along with the corresponding TTPT questions and your responses. Use this report to identify steps requiring more attention, or to share your plans and progress with your project officer, potential partners, and/or your project team.

Phase I: Research Activity

Stage 1: Define Problem and Solution

Step 1.1. Assess needs with input from stakeholders

TTPT Part 1- Q5- Describe how you assessed stakeholder needs. We reviewed relevant literature and talked with children and teachers.

Step 1.2. Identify a problem (need)

TTPT Part 1- Q4: As described by end users, what problem does your product solve or what unmet need does it fulfill? The problem is some children lack the fine motor control skills needed to successfully operate a Texas Instruments graphing or scientific calculator.

Step 1.3. Propose a plausible solution

TTPT Part 1- Q3: What are you creating/developing? We are creating/ developing an expanded keyboard that makes it easier for kids who have difficulty with fine motor control to use a graphing calculator.

TTPT Part 1- Q6: How does the product solve the problem/fulfill the unmet need? The product solves the problem/ fulfills the unmet need by providing an enlarged, lightweight, independently powered replica of the keyboard face of these calculators.

Step 1.4. Determine scope of project

TTPT Part 1- Q7: Check the boxes that relate to the project activities you would like to describe in your technology transfer plan. You have indicated that you plan to conduct engineering development activity for this project.

Step 1.5. Consider the path from project output to the marketplace

TTPT Part 1- Q8: Who will be responsible for manufacturing, selling and servicing your product when it is in the market? All manufacturing, selling, and servicing will be performed by external parties.

SBIR Proposal Output Report (abbreviated version)

This document contains components commonly required in Phase II SBIR proposal commercialization plans. The content you entered into the TTPT will populate relevant proposal sections, however some sections will need elaboration or additional content that is beyond the scope of the TTPT.

The blue boxes represent the major sections commonly required in Phase II SBIR proposals. Each of these major sections includes the SBIR requirements, relevant TTPT questions, and your TTPT responses.

SBIR Proposal Requirement 1: Research and Development Plan

Content for this section was drawn from the information you input into the TTPT regarding your plans for prototype development and testing. You may have included details about activities that have already occurred, as well as plans for the future. Therefore, some of this information may be more applicable to the Phase I results section of your proposal.

SBIR R&D Plan Instructions: Include a detailed description of the Phase II research and development plan. The plan should indicate not only what will be done, but also how the research and development will be carried out. The adequacy of the work plan (and schedule) will be considered. Phase II research and development should address the technical objectives cited in the prior section of the proposal. The methods planned to achieve each objective or task should be discussed in detail. The applicant should provide sufficient detail to indicate how the research objectives will be investigated.

Technical Objectives and Engineering Implementation Plan

TTPT Part 2- Q3: What technical objectives do you intend to achieve through your development activity? 1) Design and produce a functioning case; 2) Establish electronic interface to allow for communication between the expanded keyboard's buttons and a TI calculator.

TTPT Part 2- Q5: Describe the details that are included in your engineering implementation plan. It includes CAD drawings that will be used to communicate technical specs with our hardware and software engineering teams. It also details the electrical wiring diagram being used to create the prototype. Specific roles and responsibilities are described and laid on a timeline.

Development Activity- Product Engineering and Testing- Alpha Prototype

TTPT Part 2- Q21: Describe the steps or tasks involved in creating the alpha prototype. Early questions that guided the prototype development effort included the following: What should be the device's size, shape, and color? What material should be used? What should be the size of each key and distance between keys? Should the device include a moisture guard and how should it be cleaned? What will be the device's power source? *When will this activity occur?* 01/20/2016

TTPT Part 2- Q22: Describe the testing that will be performed to ensure the alpha prototype functions as desired. Testing of the alpha prototype included bench-testing within our development shop. We also provided the alpha prototype to focus group participants to gauge their reaction to its form and function. ***When will this activity occur?*** 01/30/2016

Development Activity- Product Specifications

TTPT Part 2- Q20: Describe how you have or will develop product specifications. We held an initial consumer panel, followed by two consumer focus groups on the Expanded Keyboard to define product specifications. The groups were comprised of a cross section of potential users from the primary target market. Included were high school and college students lacking the fine motor control skills necessary to operate the current scientific calculators, teachers, teaching assistants, and occupational therapists. Specifications resulting from the groups were derived from the participants' descriptions of their current status and satisfaction with existing alternatives, and their conceptualization of the ideal Expanded Keyboard product. ***When will this activity occur?*** 03/21/2016

Development Activity- Product Engineering and Testing- Beta Prototype

TTPT Part 2- Q23: Describe the steps or tasks involved in creating the beta prototype. Following the alpha focus groups, product specifications were refined. As a result, we sought manufacturers who could deliver production-quality components, including the full case and all calculator keys. At the same time, refinements to the electronics were performed by a sub-contractor, who ensured that the necessary connections would be made between the Expanded Keyboard case/keys, and the original TI calculator. ***When will this activity occur?*** 03/21/2016

TTPT Part 2- Q24: Describe the testing (i.e. user testing and/or field testing) that will be performed to ensure the beta prototype functions as desired. Beta focus groups were conducted with a sample of the same participants from the alpha groups. These individuals reacted to the improved form and function of the prototype device, and were overwhelmingly positive about the beta version. ***When will this activity occur?*** 09/19/2016
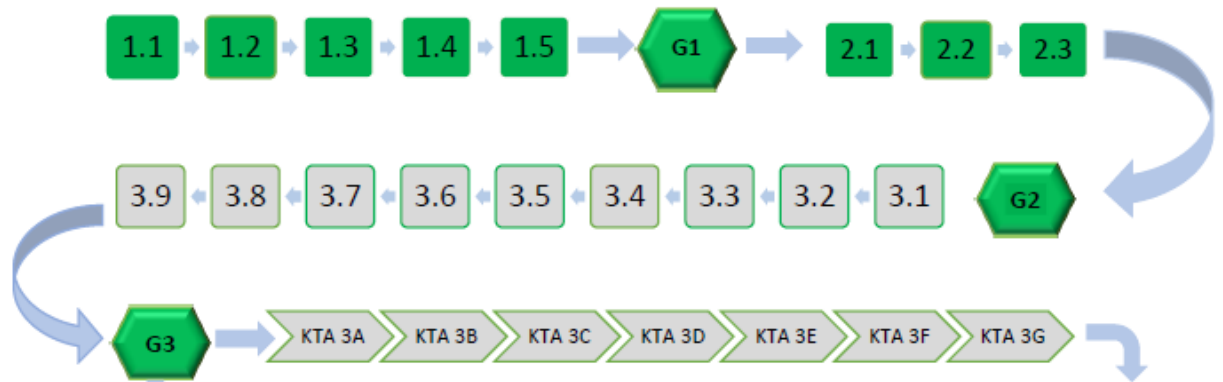
Development Activity- Technology Transfer Office

TTPT Part 2- Q15: Describe your current or planned interactions with your University's Technology Transfer Office. We have received a waiver from our Technology Transfer Office, which allows us to proceed with this project without additional disclosure requirement.
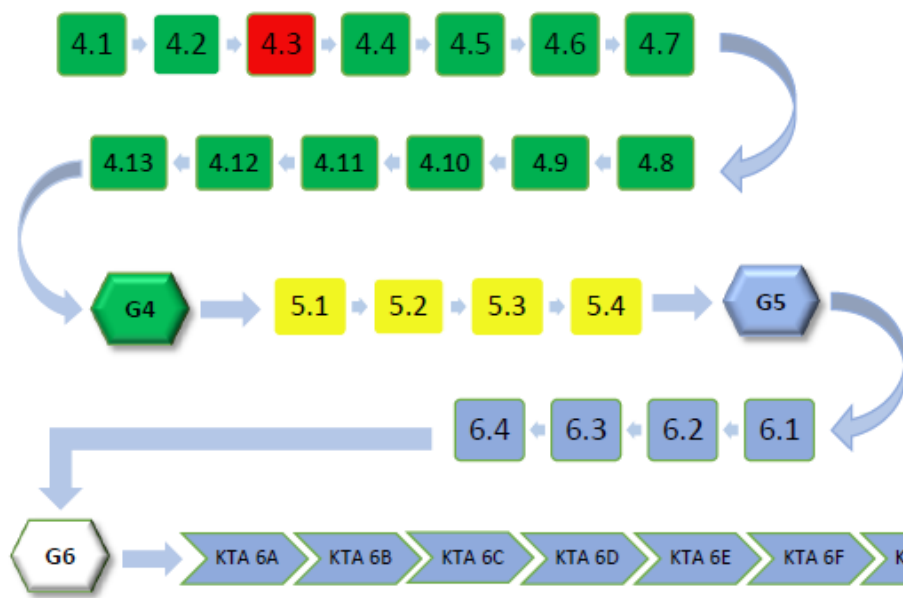
TTPT Part 2- Q16: Moving forward, describe the role that the Technology Transfer Office will play in the project. The TTO may assist us in locating an appropriate manufacturer. ***When will these activities begin?*** 10/20/2016

Sample Project
TTPT Flowchart Output Report
Need to Knowledge Model Steps

Phase 1 - Research

1.1 → 1.2 → 1.3 → 1.4 → 1.5 → G1 → 2.1 2.2 2.3

3.9 ← 3.8 ← 3.7 ← 3.6 ← 3.5 ← 3.4 ← 3.3 ← 3.2 ← 3.1 ← G2

G3 → KTA 3A KTA 3B KTA 3C KTA 3D KTA 3E KTA 3F KTA 3G

Expected outcome – Uptake and use of New Knowledge

Phase 2- Development

4.1 → 4.2 → 4.3 → 4.4 → 4.5 → 4.6 → 4.7

4.13 ← 4.12 ← 4.11 ← 4.10 ← 4.9 ← 4.8

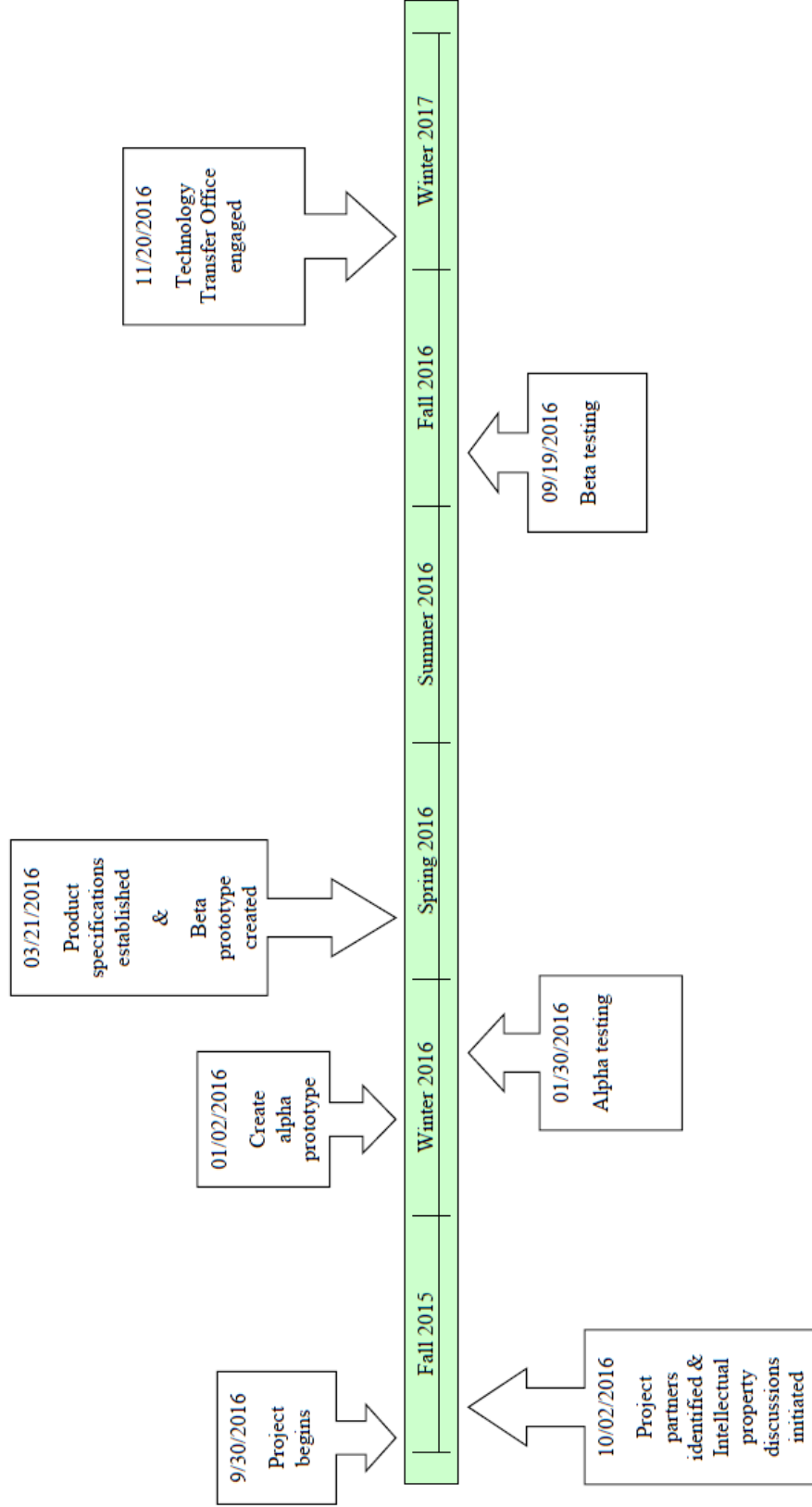G4 → 5.1 → 5.2 → 5.3 → 5.4 → G5

6.4 ← 6.3 ← 6.2 ← 6.1

Color Key:

Green- complete

Yellow- in process

Blue- to be completed at a later date

Red- skipped or not addressed

Gray- Not included in project plans

G6 → KTA 6A KTA 6B KTA 6C KTA 6D KTA 6E KTA 6F KTA 6G

Phase 3 - Production

Expected outcome – Uptake and use of Invention

Stage 7 - Production Planning

Stage 8 - Product Launch

Stage 9 - Post-Launch Review

Expanded Keyboard
Timeline of Key Activities

9/30/2016 Project begins

01/02/2016 Create alpha prototype

03/21/2016 Product specifications established & Beta prototype created

11/20/2016 Technology Transfer Office engaged

09/19/2016 Beta testing

01/30/2016 Alpha testing

10/02/2016 Project partners identified & Intellectual property discussions initiated

Fall 2015 | Winter 2016 | Spring 2016 | Summer 2016 | Fall 2016 | Winter 2017