<BusinessUnit> Resource Business Case

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MM-DD-YYYY

Notes:

- *All the contents of this document have been scrubbed of real names, references to tools/systems/hardware, and any other otherwise sensitive or potentially proprietary information.*
- *This document is regularly maintained in Microsoft Word, so some minor changes have been made to accommodate the formatting constraints outside of Word.*
- *All contents of this document are my own work.*
- ***This document was:***
    - ***Created in its entirety by me in the effort to secure additional budget in April of a fiscal year, amending original & faulty estimates provided by directors of the business unit the prior year.***
    - ***Successfully utilized to secure approximately $3,000,000 in additional funding for the year for the requested resources outlined.***
    - ***It was so well received by the executive leadership team that this format was mandated as the new standard for any such budget requests within the business unit moving forward.***

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Efficiency Gains - <Tool>

Assumptions

	Assumption	Basis
A	Current headcount of impacted population = 400	• Estimate from "Adam" = 400 • Estimate from "Bob" (via "Casey") = 400
B	Estimated headcount of impacted population by EOY YYYY = 45% • Quarterly growth Q2-Q4 = 15%	• Estimate from "Devin" – currently at 620 FTE in <BusinessUnit>, expected to be at 900 by EOY = 45% growth
C	Population impacted by <Tool> = 42.5% • i.e. 42.5% of EDO would be directly impacted by this tool	• Estimate from "Evan" of 20%-50% - average = 35% • Estimate from "Bob" (via "Casey") = 50%

D	Workload impacted for relevant personnel = 26%
	• i.e. of the 42.5% of the impacted personnel, this tool would impact the equivalent of 26% of their workload
		• Estimate from "Evan" of 5%-20% - average = 12.5%
		• Estimate from "Bob" (via "Casey") of 10%-20% - average = 17.5%
		• Estimate from "Fiona" & "Gavin" = 47.5% [1]
		  ○ CA = 95%
		  ○ IPTL = 10%
		  ○ TE is 25%-50% - average = 37.5%
		  ○ CDM = 80%
		  ○ DL is 5%-25% - average 15%

E	Process Automation = 90%	• A buffer for the pieces of the process that may have been included in above estimates that cannot be automated
F	Hourly rate of cost to Company = $190/hr	• Provided by "Casey"

G	Core functions of <Tool> (identified to date) to bring online at each major version release = 9
	• Est. 11% of efficiency gain realized per major release
		• Provided by "Casey"
		  i. Overall System Architecture
		  ii. IA
		  iii. RE/ME/SE Usage Redesign
		  iv. CM Read/Write
		  v. DNG/P6 Integration
		  vi. SWAT/BU Onboarding
		  vii. Data Reduction (BU)
		  viii. Gated Review
		  ix. System Experiences

H	2080 labor hours per year • 520 labor hours per quarter	• Assuming a standard base of 40-hour weeks

[1] See **Appendix A** for full write-up from "Fiona" - not all personas reflected in this calculation as not all had easily derived values.

Time-Phased Impacts to BU

Q2-YYYY

400	Starting Headcount (HC), See Assumption A
+ 10%	Prorated Projected Growth for Quarter
440	**Total Quarter HC**
x 42.5%	See Assumption C
187	**Impacted Population of HC**
x 26%	See Assumption D
48.6	**HC Equivalent of Impacted Work**
x 90%	See Assumption E
43.8	**HC Equivalent of Automation**
x 44%	See Assumption G [2]
19.3	**HC Equivalent of Delivered Functionality**
x 520	See Assumption H
10,012	**Impacted Labor Hours for Q2-YYYY**
x $190	See Assumption F
$1,902,248	***Est. Labor Cost Reduction Q2-YYYY***

[2] Items 1-4 from Assumption G anticipated to be fully online and operational by end of Q2-YYYY.

Q3-YYYY

440	QTR Starting Headcount (HC), See Assumption A
+ 15%	Prorated Projected Growth for Quarter
506	**Total Quarter HC**
x 42.5%	See Assumption C
215.1	**Impacted Population of HC**
x 26%	See Assumption D
55.9	**HC Equivalent of Impacted Work**
x 90%	See Assumption E
50.3	**HC Equivalent of Automation**
x 66%	See Assumption G [3]
33.2	**HC Equivalent of Delivered Functionality**
x 520	See Assumption H
17,270	**Impacted Labor Hours for Q3-YYYY**
x $190	See Assumption F
$3,281,377	***Est. Labor Cost Reduction Q3-YYYY***

[3] Items 1-6 from Assumption G anticipated to be fully online and operation by end of Q3-YYYY.

Q4-YYYY

506	QTR Starting Headcount (HC), See Assumption A
+ 15%	Prorated Projected Growth for Quarter
582	**Total Quarter HC**
x 42.5%	See Assumption C
247.3	**Impacted Population of HC**
x 26%	See Assumption D
64.3	**HC Equivalent of Impacted Work**
x 90%	See Assumption E
57.9	**HC Equivalent of Automation**
x 77%	See Assumption G [4]
44.6	**HC Equivalent of Delivered Functionality**
x 520	See Assumption H
23,171	**Impacted Labor Hours for Q4-YYYY**
x $190	See Assumption F
$4,402,515	***Est. Labor Cost Reduction Q4-YYYY***

[4] Items 1-7 from Assumption G anticipated to be fully online and operation by end of Q4-YYYY.

Q1-YYYY

582	QTR Starting Headcount (HC), See Assumption A
+ 15%	Prorated Projected Growth for Quarter
669	**Total Quarter HC**
x 42.5%	See Assumption C
284.4	**Impacted Population of HC**
x 26%	See Assumption D
73.9	**HC Equivalent of Impacted Work**
x 90%	See Assumption E
66.6	**HC Equivalent of Automation**
x 88%	See Assumption G [5]
58.6	**HC Equivalent of Delivered Functionality**
x 520	See Assumption H
30,453	**Impacted Labor Hours for Q1-YYYY**
x $190	See Assumption F
$5,786,162	***Est. Labor Cost Reduction Q1-YYYY***

[5] Items 1-8 from Assumption G anticipated to be fully online and operation by end of Q1-YYYY.

Q2-YYYY

669	QTR Starting Headcount (HC), See Assumption A
+ 15%	Prorated Projected Growth for Quarter
770	**Total Quarter HC**
x 42.5%	See Assumption C
327.1	**Impacted Population of HC**
x 26%	See Assumption D
85	**HC Equivalent of Impacted Work**
x 90%	See Assumption E
76.5	**HC Equivalent of Automation**
x 100%	See Assumption G [6]
76.5	**HC Equivalent of Delivered Functionality**
x 520	See Assumption H
39,797	**Impacted Labor Hours for Q2-YYYY**
x $190	See Assumption F
$4,402,515	***Est. Labor Cost Reduction Q2-YYYY***

[6] Items 1-9 from Assumption G anticipated to be fully online and operation by end of Q2-YYYY.

Estimated Labor Cost Reduction Summary

- **Total estimated efficiency gains and labor cost reduction implications for YTD thru YYYY = $9,586,140**
- **Total estimated efficiency gains and labor cost reduction implications for YTD thru Q2-YYYY = $22,933,764**

This analysis does not capture cost reduction as a result of reduced manufacturing rework.

Resource & Staffing Analysis

Prior Estimate (Q4-YYYY)

The resource and staffing estimates provided in Q4-YYYY were best estimates at the time, but have since been determined to have been deficient in:

- Accurately capturing all functionality needed within the team, roles not captured in original SWAG estimate:
    - Delivery Manager/Scrum Master
    - Quality Assurance
- Accurately capturing the level of effort and deliverables for <Tool>
- Accurately capturing the level of effort of supporting other products within the Team Software Portfolio

These oversights were not the result of poor planning or execution but rather limited understanding due to resource constraints at the time of estimating. Since the original SWAG estimates were provided both the Project Manager and Product Manager, in tandem with the UX researchers and designers, have conducted more thorough pain point analysis. This research has yielded additional scope not originally captured.

This additional scope requires either temporary additional headcount, or additional time to execute on.

Proposed Path Forward (Thru Q2-YYYY)

In an effort to develop and deploy software solutions to support 10x <BusinessUnit> delivery, the ask is to support the following resource/staffing plan (per the Proposed column) through Q2-YYYY.

This is to allow Team to develop a robust Software Development team and processes while also actively deploying best-in-class software solutions. Maintaining a temporary presence of experienced contract resources allows us to develop our processes faster and avoid falling into common pitfalls of "new" software development teams by leveraging their expertise and lessons learned.

Original Resource Plan	**Proposed**
Technical Product Manager x1 UX Researcher/Designer x1 Developer x4	Technical Product Manager x1 UX Researcher/Designer x2 Developer x8 Delivery Manager x1 Quality Assurance x1

Technical Product Manager

There is no perceived change needed to this function of the original resource plan.

UX Researcher/Designer

In addition to supporting multiple products (<Tool1> and <Tool2> currently, possibly <Tool3> in the near future), UX teams generally are comprised of specialists in:

- Research
- Design

Even with 2 headcount supporting UX, both resources are at capacity today and have not yet provided to support to other products in the Team portfolio other than <Tool1>.

Developer

The original assumption of 4 Software Development Engineers (SDE's) was based on the notion that 1 person would be able to fully support each of the following functions:

- Data Engineer/Data Science
- System Architect
- Gateway
- Front End

This did not account for:

- The scale of Tool
- The ability of Team to accommodate bandwidth demands for onboarding and training FTE resources
- The ability of Team to support a portfolio of solutions beyond Tool

Delivery Manager

At the time of the original estimate, one person was attempting to serve as:

- Project Manager
- Product Manager
- Delivery Manager/Scrum Master

This is not sustainable or scalable and the original resource plan neglected to account for the Delivery Manager/Scrum Master functionality.

Quality Assurance

At the time of the original estimate there was no planning for automated testing and an assumption was made that the development team would be able to perform all rigorous testing needed prior to each release.

The present SDE team is at capacity and with the amount of feature releases scheduled for both <Tool1> and <Tool2> there is a headcount's worth of work in this space.

Impacts of Prematurely Reducing Staffing Resources

If the decision were to be made to reduce contract staffing support, then the schedule for all deliverables would double, at minimum – depending on the areas where staffing would be reduced. Risk: In 6-months' time will there be pushback from leadership on the team's inability to quickly deliver needed solutions and functionality?

Additional Context

False Equivalencies

There is no other group to deliver these solutions or do this work for <BusinessUnit>.
Various groups within <BusinessUnit> programs have tried to be self-sufficient in developing software or software-like solutions and have:

- Found that they do not have the bandwidth to support
- Found that they do not have the resources to scale these solutions
- Been unable to achieve standardization in processes across programs due to ad-hoc solution development

As a result, these various groups have approached Team to take ownership of these tools including:

- <Tool1>
- <Tool2>
- Potentially <Tool3>

Additionally, there is no central group in a position to support these development needs as <BusinessUnit>:

- Does not categorically support custom software, they have specific teams for internally developed tools (i.e. System)
- Is understaffed (see Lessons Learned from Elsewhere at Company)

Lessons Learned from Elsewhere at <Company>

<BusinessUnit> Today

In the recent <BusinessUnit1>/<BusinessUnit2> summit, when asked if "John Doe" had the resources he needed to support Company he responded that “[he] has a third to half the headcount [he] actually needs”.

Software Team

The System software solution suffers from a lack of user adoption, homegrown “solutions” to avoid using the tool, and a general lack of trust in the development team from years of the team being understaffed and as a result unresponsive to customer needs.

They are now having to dig their way out of this hole and rebuild trust with the organization at large, which has likely been more costly than had the group been maintained at appropriate levels consistently throughout the development cycle.

Appendix A - Persona Level Impacts

Provided by "Fiona" on MM/DD/YYYY:
Okay here's what I've found. It varies quite a bit per role so I'll send this broken down by role:

- For a CA:
  - They spend probably 95% of the time working in the change management space. This includes documenting training, updating Docs, and reviewing CRs/CNs for quality assessment
- For an IPTL:
  - They spend 10% of their week working on change management tasks
- For a TE:
  - They spend 5-10% of their time working on CNN during active testing. But, they'll spend 25-50% in the NC space (a space that triggers things in change management) in a given week, primarily looking through data and developing the course of action
- For an ME that works on tWOs:
  - They create CNs on a daily basis and this creation takes them ~20 min each time. They also get assigned subtasks on ECRs to either update the tWO or whatever existing instance is out there already. After they submit an CN, rework on CNs can take a minute or two or an hour or two.
- For another ME:
  - Doing stuff daily but didn't give a time estimate
- For an RE:
  - Creating CN 1-2x per week and reviewing 3x a week.
- For a CDM:
  - "It's my job role, it's probably 80% [of their week]. The other 20% [of their week] is meetings around Change Management."
- For a design lead:
  - For CN or CM aspects, probably only 1-2 hours a week, but total time to create each CN is 3 hours. Average is about a month from beginning to end – in terms of actual hours or activity effort expended, probably more like 10 – 40 hours.

Disclaimer

Everything supplied in this document is a conservative estimate or best guess and is based on broad generalizations that do not fully account for the nuance of each program. As our research into the various <BusinessUnit> programs continues, the business case for Tool – as well as the rest of the software development portfolio – is subject to change based on new findings, better context, and changing demand from the business unit.