



# Redesigning Boeing's Service Request Form ~ DawgsTakeFlight

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## Background & Objectives

**Purpose:** Reevaluate webform used by employees within all Boeing sites to submit service requests. Project limited to front-end redesign

### Most Submitted Requests in January 2023:

1. General Equipment Repairs/Maintenance (1601)
2. Production Equipment Repairs/Maintenance (367)
3. Plumbing (258)

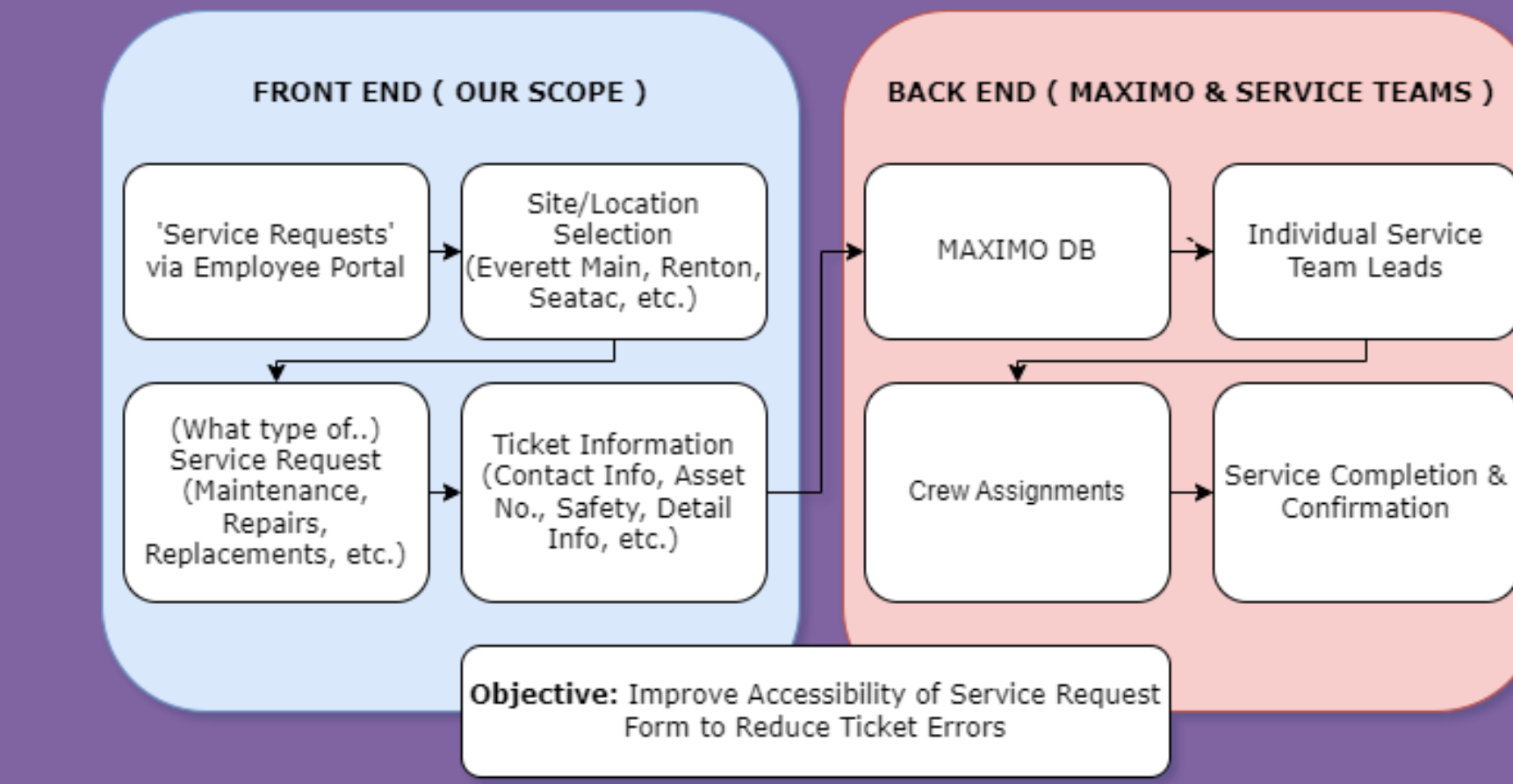
### Goals:

- **Reduce Errors (Zero errors)**
  - Autofill
  - Smart Search
  - Dropdown Menus
- **Enhance Usability/Learnability (Likert rating of 5)**
  - Improve Aesthetics
  - Improve Description
  - Detail
  - Accuracy
- **Improve Efficiency**
  - Remove Redundancy
  - Minimize Manual Input
  - Reduce Completion Times (By at least 10%)

## Methodology

- **Conduct usability testing on current Service Request Form**
  - 1 of 2 hypothetical Boeing scenarios in which a service request must be submitted
  - Non-Boeing employees to simulate Boeing's inexperience with the form
  - Target audience to reflect Boeing's demographic
- **Record and compile data from tests**
  - Number of errors and where they were made
  - Likert survey of user likability
  - Participants thoughts and suggestions
- **Create newly updated prototype**
  - Base changes off testing data
  - Focus on errors prone areas
  - Confirm changes are feasible with Timothy (Mentor)
- **Repeat iterative process until project objectives are met**
  - 0 errors/insufficient submissions
  - T-test for significance of decrease of errors
  - Maximum scores on Likability surveys

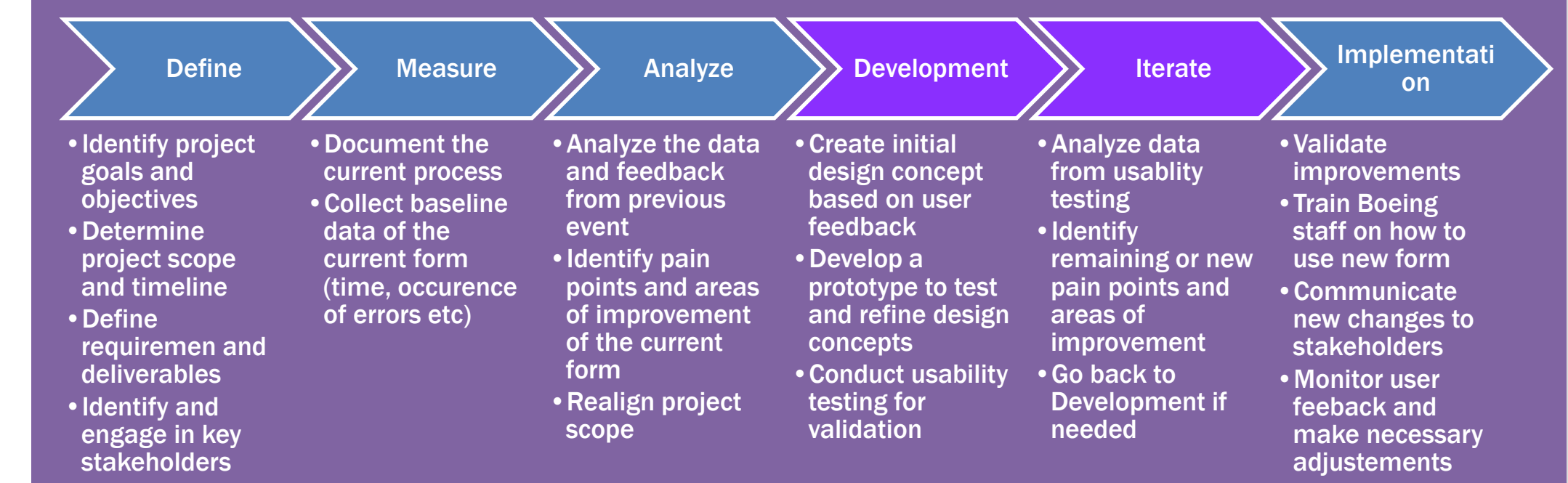
## Scope



## Benefits

- Due to decreased service request errors, we predict approximately \$236,000 of monthly savings for Boeing
- Equation used:  
 $(\# \text{ of errors} / \# \text{ of usability test}) * (\# \text{ of equipment service requests}) * (\text{average time to rectify incorrectly submitted service requests}) * (\text{Hourly machine technician cost})$
- Due to a more infallible form, employees will no longer neglect completing a service request

## Process Checks



## Gap Analysis

PROJECT AREA	CURRENT	IDEAL	GAP
Content	Form focuses on service requests within Everett Main	Covers services across all regions.	Other sub regions, cities and sub sites should be added on.
Auto-Fill System	Not applicable	Auto-fill contact info and location	Not supported by our software, require back-end support from Boeing
History Request Record	Users unable to view request submission record	User can easily search for the form they filled and check the status and	No access to the database and server
Maximo	Unorganized data stored and missing information	Record completion time and error rate	The time period on each page, Error rate of the request, frequency of services
Hyperlink	The Service request form is not easily accessible	Access this form from Boeing's Home page	Support from Boeing's Engineers and Leaders

## Resources

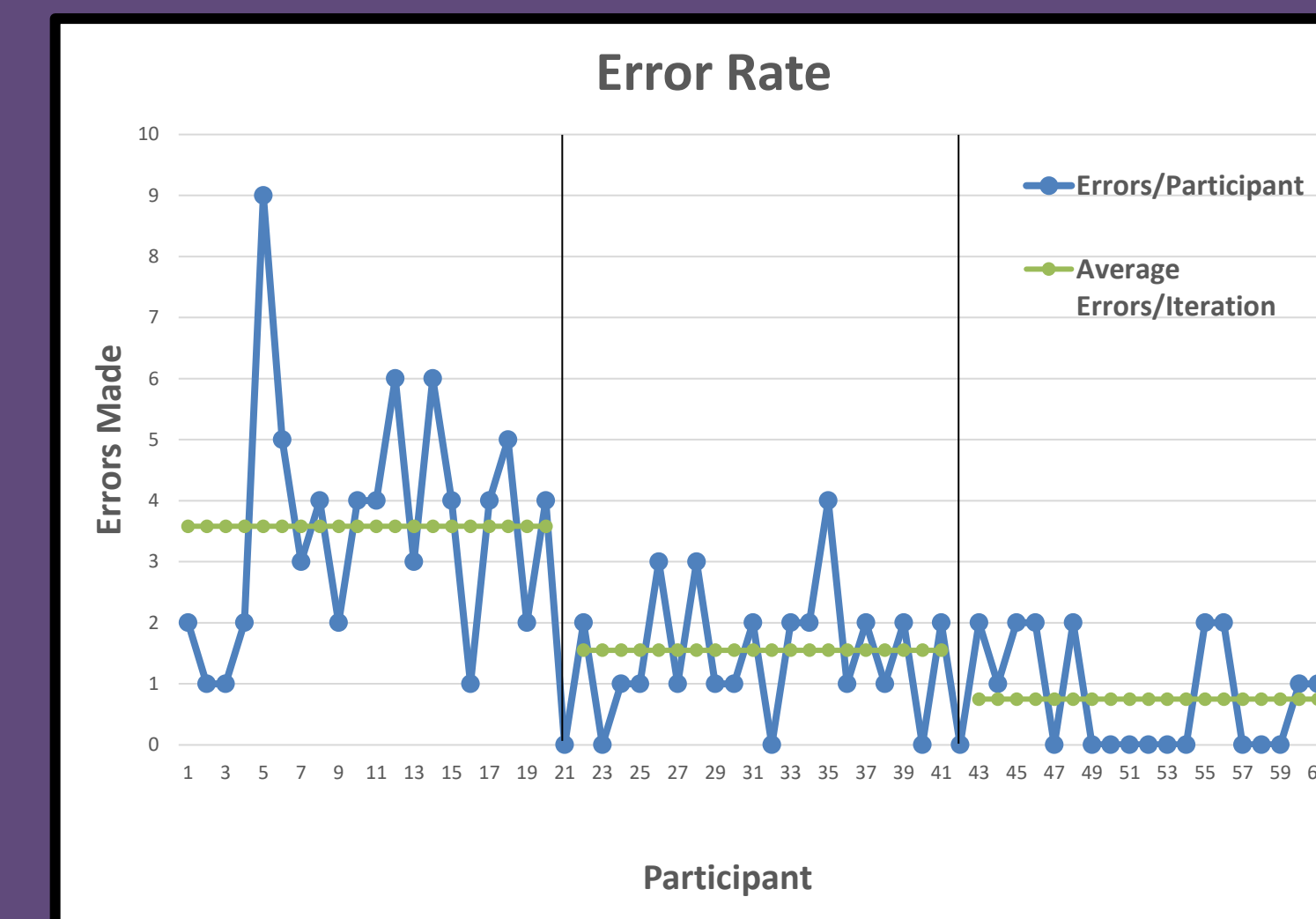
**Information:** Data from past service request and fulfillment queues. Research on user preferences, human factors and design and error production.

**Software:** Web-building applications (Figma & ProtoPie) and data analysis (Excel)



**Human:** Consult with outside experts and key stakeholders and recruit users for testing

## Data



Current Form Average: 3.58 St. Dev: 2.01  
 Iteration 1 Average: 1.55 St. Dev: 1.05  
 Iteration 2 Average: 0.75 St. Dev: 0.91

$\alpha=0.05$	Current Form	Iteration 1	Current Form	Iteration 2	Iteration 1	Iteration 2
Mean	3.60	1.55	3.60	0.75	1.55	0.75
Variance	4.04	1.1	4.04	0.83	1.1	0.83
Observations	20.0	20.0	20.0	20.0	20.0	20.0
Hypothesized Mean Difference	0.00		0.00		0.00	
df	29.0		26.0		37.0	
t Stat	4.04		5.78		2.57	
P(T<=t) one-tail	1.78E-04		2.20E-06		7.02E-03	
t Critical one-tail	1.69		1.71		1.69	

Likert Survey (Likeability)  
 Current = 1.66  
 Iteration 2 = 4.25

## Progress towards Objectives (Baseline to Iteration 2)

- Submission errors decreased by 79%
- Time to completion decreased by 16%
- Likert rating increased by 57%

## Acknowledgements

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## Proposed Solution

