## Executive Summary

With the goal of determining whether the current knowledgebase is adequate to handle ticket deflection, the Documentation Team has determined that the knowledge base is not reliably preventing ticket creation.

Within a sample study of 8 ticket-knowledgebase pairings, 7 of 8 tickets required further escalation despite the knowledge base providing partial coverage. This small but representative example suggests that the current coverage and structure are not meeting user needs.

Each ticket created costs an average of $20 in terms of labor costs. Using the sample study to determine costs of labor, the increase in ticket creation costs the company $43,200 annually, on the high end of ticket creation.

The documentation team recommends expanding the knowledge base to cover issues regarding password protection, security, and page access. These particular pages showed the need for coverage.

### Recommendations

1. Expand targeted coverage for in-demand topics tied to frequent tickets (passwords, security, page access) to reduce ticket creation.
2. Consolidate the “Sharing & Permissions” and “Manage Members & Guests” articles into a single, task-oriented resource to reduce confusion and clarification requests.
3. Improve the knowledgebase information hierarchy and UI to bring more attention to decision-critical content sooner.

Following these recommendations will:

- Increase ticket deflection
- Increase user search success
- Reduce the number of clarification tickets
- Reduce overall support labor costs

## Organizational Context

Over the past two quarters, Notion has experienced significant growth in its user base, resulting in a corresponding increase in revenue. However, this growth has also led to a substantial rise in support volume, creating new operational pressures. As the number of users increases, the demand for customer support scales accordingly, making the efficiency of support systems a critical concern.

Support tickets represent a measurable cost to the organization. Even Tier 1 tickets require dedicated labor time. More complex issues that escalate to higher tiers demand additional time from specialized personnel, significantly increasing overall support costs. As user volume continues to grow, even minor inefficiencies in support processes or documentation can scale into significant financial and operational burdens.

Response to the growing costs, Notion sought to optimize support deflection, but there still persists significant support ticket volume suggesting a disconnect between available documentation and user behavior.

This discrepancy raises a critical organizational question: if relevant information exists within the KB, why are users still submitting support tickets? The issue may not lie in the absence of information, but rather in how that information is structured, presented, or accessed.

In response, leadership has initiated an investigation into the effectiveness of KB content within a defined sub-domain. The goal is to evaluate whether user needs are being met, identify points of friction between users and documentation, and determine how these factors contribute to support ticket creation and escalation. By analyzing user tickets alongside corresponding KB articles, this project aims to uncover patterns that have measurable impacts on support costs and operational efficiency.

## Findings

The documentation team found the following findings, discussed and elaborated below.

**Finding 1**

While there were adequate knowledgebases for the majority of the tickets, users still could not troubleshoot by themselves. This is observable through the ticket creation.

4 of 7 tickets had a knowledgebase that fully addressed the ticket issue, but 3 of 4 of those tickets had to be escalated further.

Example: Ticket 3 states, “User invited team member as "guest" but now that person needs full access to workspace. Can't figure out how to convert guest to member without re-inviting.” The knowledgebase pair to this ticket clearly states how to convert guest to member without re-inviting but user still created ticket to escalate problem.

**Finding 2**

Many of the knowledgebases overlap with certain topics and information. This is observed within the small sample size of 7 tickets.

4 of 7 tickets shared the same knowledgebase articles, but 3 of 4 of those tickets have Tier 1 escalation, while 1 of 4 of those tickets are Escalated escalation.

Example: Ticket 3, Ticket 5, Ticket 26, and Ticket 26 all pull from ‘Sharing & Permissions’ and ‘Manage members & guests’ articles but have varying escalation levels.

## Organizational Impact Estimates

Quantifying the cost of change is essential for prioritizing our strategy. Below, we break down the financial burden of recurring issues and the projected savings of our recommended updates. By scaling these figures to 30 and 90 tickets per month (using a $40/hr labor rate), we can visualize the potential

impact on the bottom line. While these are rough estimates with medium confidence, they provide a clear roadmap for where intervention is most needed.

| Issue Pattern | # of Tickets | Escalation Distribution | Est. Time per Ticket | Cost per Ticket | Est. Monthly Ticket Volume | Est. Monthly Cost ($) | Est. Annual Cost ($) | Confidence Level | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Issues w/ user findability | 3 | 1 (Tier 1), 2 (Escalated) | 0.58 | $23 | 30 (Low) | $600 | $7,200 | | Ref. recommendation # 1 |
| Issues w/ KB article not providing sufficient information | 3 | 2 (Escalated), 1(multi-escalation) | 1 | $40 | *The amounts above and below in this section signify the average cost of each ticket on the low and high end of ticket creations* | | | Medium | Ref. Recommendation #2 |
| Bringing more attention to Toc in KB articles | 5 | 4 (Tier 1), 1 (multi-escalation) | 0.5 | $20 | 90 (High) | $3,600 | $43,200 | | Ref. Recommendation #3 |

## Evidence-Based Recommendations

Our understanding of this KB recommends three major changes. These we evaluated by ticket deflection and how those tickets are being managed in an efficient way. With some tickets having to be escalated or repeat tickets for the same issue.

1) To best decrease ticket deflection Notion needs to consolidate Share & Permissions and Manage Members & Guest. These two articles have one of the highest tickets due to users confusing the information as being different. The information has been proven to be the same.
2) Notion should update the user interface of the knowledge base to highlight more relevant information which will increase user search success, such as bringing more attention to the table of contents by changing the layout and color scheme.
3) Notion needs to expand its knowledge base to help users find exactly what they are looking for. Tickets that were being created were due to poor information about information that has not been updated on the site yet. These same articles need to be prioritized as they are most relevant as user who are currently struggling with that issue can read the article sooner.

This table is a further detailed analysis of the Notion knowledge base.

| | | |
|---|---|---|
| KB SHOULD BE EXPANDED. | **5 of 8 tickets use the same 2 KB articles and do not provide adequate information for user troubleshoot.** | **Decrease in ticket deflection. Increased user cognitive load.** |
| KB SHOULD BE CONSOLIDATED | **2 of 8 KBs are used for multiple tickets while covering what could be deemed the same issue. Sharing & Permissions should be merged with Manage members & guests to reduce click-through rate.** | **Decrease ticket deflection** |
| KBS W/ TABLE OF CONTENT SHOULD CHANGE THE COLOR | **6 of 8 KBs have a table of contents that could be easily missed and cause users to scroll more than needed** | **Increase user cognitive loads. Decreases user search success** |

(Use rewritten recommendation instead)

## Appendix

### 1. Methods Overview

The team was assigned eight help tickets to evaluate the accuracy and effectiveness of the knowledge base, specifically assessing whether it provided users with sufficient information to resolve issues without escalation. Several analytical methods were used, including Krippendorff's alpha and pattern recognition tests, to determine the overall value and consistency of the information contained within the knowledge base system. However, due to the limited number of tickets analyzed, the data set was relatively small, which restricted the ability to obtain fully generalizable results. As a result, the findings are based on this limited sample and should be interpreted with this constraint in mind.

| Samples | Variables | |
|---|---|---|
| **8 tickets from Q2** | Issue Category | Task Unattainable/ User Error/ Administrative Access/ Information Clarity |
| **4 out of 8 Tickets managing members' access and permissions** | Outcome severity | Clarification/ Task Blocked/ Repeated Attempt |
| | Escalation Level | Tier 1/ Escalated/ Escalated + Follow Up |
| | Coverage Status | Fully Addressed/ Partially Addressed/ Unclear/ Not Addressed/ Outdated |
| | Amount of Barriers | Level 1/ Level 2/ Level 3/ Level 4 |

### 2. Codebook Overview

Indicating that the codebook created was to help determine the outcome of ticket deflection, we used our knowledge base as a foundation of our understanding. Separating the most common types of

variables, they would further label the definition for each outcome of possible values. Our variable names are

- Issue Category
- Outcome Severity
- Escalation Level
- Coverage Status
- Amount of Barriers

This would lead to each operational definition which would categorize each into their own level of severity. Number of Barriers would start with no KB available to only one being necessary for the ticket to be closed. Possible values and Inclusion Criteria are similar in category but have different meanings. Possible values state with the level the ticket has reached, and Inclusion Criteria defines the state the ticket is in.

Exclusion Criteria is a detailed definition of each level the category falls under. As Inclusion Criteria would say “KB fully addressed issue” Exclusion Criteria would further classify that to “User needed additional help”

Example Ticket gives a real-world demonstration of a ticket that would fall under each Variable Name. With this section too many tickets were used to demonstrate the same variable so it does not define each category efficiently.

| Variable Name | Operational Definition | Possible Values | Inclusion Criteria | Exclusion Criteria | Example (Ticket ID) |
|---|---|---|---|---|---|
| *Issue category* | User cannot complete task due to specific task not being available/visible. | Task Unattainable | Similar Tasks Available, Specifc Task Not-Available | Task is specifically included, but not working. | Ticket 4 |
| | User cannot troubleshoot task without help. | User Error | Adequate KB available, User Confused | User is completing task correctly but product not working. | Ticket 13 |
| | User cannot complete task without admin intervention | Administative Access | User does not have access, admin is necessary for enable function | User just needed to upgrade plan, User needed to enable other feature to accomplish | Ticket 31 |
| | User just needs more clarification or information | Information Clarity | User requesting information | User needs help with a task | Ticket 23 |
| *Outcome severity* | User needs clarification or guidance to complete task. | Clarification | User only needed clarification from admin | User needed more than clarification | Ticket 3 |

| | | | | | |
|---|---|---|---|---|---|
| | User cannot complete task. | Task Blocked | User could not complete task without aid. | User needed only had to try again | Ticket 4 |
| | User needed to try again. | repeated attempt | User just had to try again | User could not complete task without aid. | Ticket 26 |

| | | | | | |
|---|---|---|---|---|---|
| *Escalation level* | Could be solved using KB. | Tier 1 | KB fully addressed issue. | User needed additional help. | Ticket 18 |
| | Required internvention. | Escalated | User needed additional help. | KB fully addressed issue. | Ticket 13 |
| | Required interenvention and manager escalation. | Escalated + Follow Up | User needed more an additional help. | User did not need more than additional help, KB fully addressed issue. | Ticket 31 |

| | | | | | |
|---|---|---|---|---|---|
| *Coverage Status* | Full information available in the KB | Fully Addressed | Task complete with KB | No information was needed from KB | Ticket 3 |
| | KB only partially addresses the topic | Partially Addressed | KB only partially addressed issue. | Task complete with KB | Ticket 4 |
| | There are related but not specific KB | Unclear | KB does not have specific information about issue. | KB does not address information regarding issue. | N/A |
| | There are no KB availble | Not Addressed | KB does not address information regarding issue. | KB does not have correct/up-to-date information. | Ticket 26 |
| | KB does not have relevant information | Outdated | KB does not have correct/up-to-date information. | KB only partially addressed issue. | N/A |

| | | | | | |
|---|---|---|---|---|---|
| *Amount of Barriers* | No KB available. | Level 1 | No knowledge base that covers issue specificially. | There is at least one KB that will resolve issue | Ticket 26 |
| | More than 2 KBs necessary. | Level 2 | User had to go to more than 2 KBs to solve issue, User still needed help after viewing available KBs | There is one KB or more than 3 KB that will reslove issue | Ticket 24 |
| | More than 1 KB necessary. | Level 3 | User had to go to more than 1 KB to resolve issue | No KB available or used more than 2 to resolve issue | Ticket 28 |
| | One KB necessary. | Level 4 | User only needed one KB to solve issue. | No KB available or used at least 2 to resolve issue | Ticket 3 |

## 3. Reliability Results

After establishing variables of which each ticket will be graded on through the collaborative effort of creating a codebook, the Documentation Team conducted a pilot study to determine the reliability of the codebook with 7 ticket-knowledge base pairs to further establish our methods.

Three coders independently coded the group of 7 ticket-knowledgebase pairs.

Overall Krippendorff's alpha was 0.653, which denotes a higher-than-average reliability score. Variable-level reliability measures are shown in the table below.

**Krippendorff's Alpha Results by Variable**

| Variable | K-Alpha | Explanation |
|---|---|---|
| **Issue category** | 0.508 | Moderate alignment indicating slight disagreement amongst coders. |
| **Outcome Severity** | 0.844 | Very strong alignment amongst coders establishing reliable results. |
| **Escalation Level** | 0.496 | Lower than average agreement indicates conflicting decisions on escalation level. |
| **Coverage Status** | 0.559 | Slightly above moderate alignment. |
| **Amount of Barriers** | 0.664 | High alignment amongst coders suggesting reliable results. |

With the limitations of having a small data pool into account, we believe that our codebook is strong enough to support our recommendations. To achieve a higher reliability, score overall additional ticket-knowledge base pairs and more research would be required.