



BOOST YOUR SERVICE DESK WITH THESE NEW TICKET PRIORITIZATION STRATEGIES

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In this white paper, we explore new and innovative methods of prioritizing tickets so that the highest value is returned in the shortest time. By adopting an enhanced prioritization approach, improved SLA delivery rates and dramatically improved business value can be achieved for no additional effort.

AUDIENCE

Senior IT Managers, Service Desk Managers, Business Analysts and anyone working in the Service Desk environment.

INTRODUCTION

Not all tickets are equal. While best practice advises that a ticket's priority is the product of its impact and urgency, extending that approach to prioritization can deliver improved value to your business.

TICKETS AND TICKET ATTRIBUTES

Tickets are discrete packages of work. When a ticket is submitted, the owners of the ticket aim to resolve the work and close the ticket. When a ticket is submitted, it can be defined in a number ways by the following attributes:

- **Category:** The purpose or type of work. Understanding what type of work is to be done can help appropriate assignment and speedy ticket resolution, as well provide insight into the work to be done that can be used to drive organisational improvements.
- **Status:** The condition of the ticket within its life cycle. A typical, simple lifecycle for a ticket might be 'In Progress', 'On Hold' or 'Closed.' A more elaborate set of statuses can be used to capture a more structured lifecycle that might record those tickets that are 'Pending Authorisation,' for example.
- **Priority:** The measure of how much pain the business experiences without the ticket being completed. It is the comparison of ticket priorities that will decide which ticket is tackled next. This attribute is the focus of this white paper.

ITIL GUIDANCE ON TICKET PRIORITIZATION

The current guidance from ITIL advises us that priority can be derived from the ticket's urgency and impact:

	High	Medium	Low
High	P1	P2	P3
Medium	P2	P3	P4
Low	P3	P4	P5

In this example, tickets with a P1 priority code would be causing the most pain to the business and treated with the highest priority.

If we had a queue of tickets that were ordered with the highest priority at the top and the lowest at the bottom, then it would make sense to pick from the top of the queue when the next ticket is to be addressed. The reality of work queues, though, are that they are ever-changing as tickets are closed and more tickets are submitted. The end result would be that P1 tickets would always be dealt with first, and those with a lower priority bump down the queue and could, in some cases, never get dealt with.

To address this, ITIL suggests assigning a target resolution time to each priority code, so for instance:

Priority Code	Priority Description	Target Resolution Time
P1	Critical	1 hour
P2	High	8 hours
P3	Medium	24 hours
P4	Low	48 hours
P5	Planning	Planned

How much time a ticket has before it breaches its target resolution time is often referred to as the ticket's SLA. Now if we order the ticket in the queue not by their priority code, but rather by the time remaining on their SLA, we get an improved result. The lower priority tickets would typically start toward the bottom of the queue, but as the time remaining on their SLA counts down those tickets, even those of a low priority come to the top of the queue.

While this improves prioritization, there are still flaws with this approach. Primarily, if a critical ticket gets raised, it may get bumped by a low priority ticket that only has 30 minutes left before it breaches its SLA, despite the critical ticket returning greater business value. How can we improve the rate at which business value is returned?

WEIGHTED TICKETS: A BETTER WAY

Before tickets are assigned to owners to be resolved, they sit in a queue prioritized by their urgency and impact. As we've discussed, the order is dynamic, as new tickets come into the system with different priorities and SLAs. This results in tickets with the least amount of time remaining rising up to the top, while tickets with plenty of time are left pending more active attention.

Using a model that applies a weighting to the time left on the ticket, for the purposes of ordering, it is possible to adjust the priority order of tickets, in a way that can bias those tickets of a more critical nature while still ensuring that the lowest priority tickets will be dealt with.

The model here reorders the tickets by their weighted time left, not simply their time left:

Weighting formula: $Time\ left / weighting$

This model reorders the tickets by their weighted time left, not simply their time left, and since the weighting will vary from one priority code to another, the order of tickets in the queue can be biased toward those tickets that are more likely to return the greater business value. Or, putting it another way, tickets that are most likely to return the best business value are emphasized in a simple, effective manner.

Weighted Examples

Here we see standard prioritization with time left applied to three tickets with IDs 'A', 'B' and 'C'. Please note that the least amount of time left appears at the top of the queue.

Ticket ID	Priority Description	Time Left
A	Low	00:27:33
B	High	00:37:33
C	Critical	00:55:58

In the following example, two columns have been added to the table, showing the weighting and the time left with the weighting applied. A higher weighting value has been linked to critical tickets versus less critical ones. Please note that the least amount of weighted time left appears at the top of the queue and the queue order has changed so that the

Ticket ID	Priority Description	Time Left	Weighting	Weighted time left
C	Critical	00:55:58	3	00:18:39
B	High	00:37:33	2	00:18:46
A	Low	00:27:33	1	00:27:33

Extending this example, we can consider the same three tickets after 20 minutes have elapsed:

As the time left reduces, the effect of the weighting is less in real terms for those tickets with the least amount of actual time left, so as 20 minutes pass in the above example, the tickets re-order in the queue.

Ticket ID	Priority Description	Time left	Weighting	Weighted time left
A	Low	00:07:33	1	00:07:33
B	High	00:17:33	2	00:08:46
C	Critical	00:35:58	3	00:11:59

Now that we have considered a surprisingly simple method of tweaking the queue behaviour, a number of alternatives present themselves.

ADDITIONAL WEIGHTING METHODS

Weighting doesn't have to apply just to priorities. While this methodology can increase the business value returned by weighting critical and high priority tickets, weightings can also be tied to other attributes to get other desirable effects.

Departments or people

This might be clients, individuals or departments based on their business value. By applying a weighting to tickets raised by certain organisations or individuals it is possible to ensure that they receive improved service delivery. For example, prioritizing billable individuals/departments over non-billable ones.

Assets

Troublesome networked assets such as particular servers might have an elevated priority weighting associated with them since, from past experience, we know that these tickets typically take longer to resolve.

Categories

By applying weighting to ticket categories, it's possible to emphasize specific types of work. By amending the value of a chosen category, a particular IT service could become the focus for Service Desk Analysts in response to changing business needs. A temporary drive to improve the turnaround of the onboarding requests can be made with a simple amendment to a category's weighting.

FIXED SLA REDUCTION

The benefit of applying weighted time left is the reduction of target time breaches and tickets with the highest business value being prioritized. In practice, a particular ticket queue may require the effects of the weighting to be toned down.

Since the effect of the weighting reduces as the open ticket approaches its target time, it is possible to artificially reduce the time left by a set duration. This reduced time left then has its weighting applied to create a calculated time left. Remember, none of these adjustments are applied to the actual time left.

Ticket ID	Priority Description	Time left	Time Left -00:30	Weighting	Calculated Time Left
A	Low	00:27:33	-00:02:27	1	-00:02:27
B	High	00:37:33	00:07:33	2	00:03:46
C	Critical	00:55:58	00:25:58	3	00:08:39

WEIGHTED VS NON-WEIGHTED

So, what are the effects of applying a priority weighting on the rate of tickets being resolved in their target resolution time?

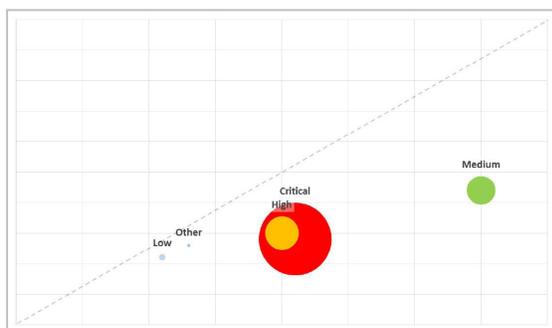
We took a sample of ticket data and did some testing.

The sample of data was made up of tickets with a spread of priorities typical for ticket queues. Each ticket had an effort associated with it that would represent the time to resolve from when the ticket is assigned. Each ticket was 'opened' at a different time but within a defined period.

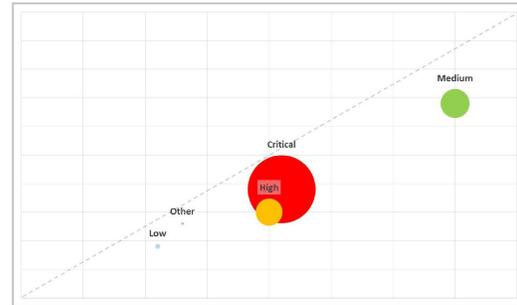
Priority	Mild Weighting
P1	8
P2	4
P3	4
P4	0.5
P5	0.5

Weighting applied during testing

The first run-through of the test is illustrated in the following chart. For each ticket raised of a particular priority, the indicator moves a step to the right. Each ticket that is resolved within its SLA steps the indicator up vertically. The ideal path of the indicators will be along the dotted line – that is to say, when a ticket is raised, it is immediately resolved within its SLA. Importantly, the order in which the tickets are assigned is based on their un-weighted time left.



The second test took exactly the same sample data, but this time assigned the tickets based on a weighted time left. The results dramatically show the increased number of tickets resolved within their SLA, i.e. the indicators being closer to the 'ideal' dotted line:



DIFFERENT WEIGHTINGS

In our testing, we found that different weights had little or no difference between them – it was simply applying a weighting that made the difference.

THE RESULT

In the following table, the difference between the numbers of tickets resolved when mild or extreme weighting is applied is very little, but the difference between no weight and mild weighting is significant.

Priority	No Weighting	Mild Weighting	Extreme Weighting*
P1	12	16	12
P2	15	18	18
P3	21	22	23
P4	11	10	10
P5	13	13	13
SLA Targets Met	72%	79%	80%

** Double Mild Weighting*

While these numbers were applied to our sample data, individual service desks would need their own profile, depending on the nature of business, type of work, frequency, effort, ratios of ticket types and SLAs in place.

For future research, we plan to adopt a down-tools policy in which engineers can stop working on lower priority tickets to address a high priority or critical ticket. We predict that this will further improve the hit rate at the high end, and have a little effect at the lower end.

CONCLUSION

By applying a mild weighting, we were able to achieve an uplift of 9.7% in tickets being resolved within the target time: a significant increase in performance.

The numbers open up opportunities for significant cost savings or increased business performance.

While ITIL best practice simply looks at time left on a ticket, weighting tickets based on specific criteria to the business has a huge impact on the efficiency and success of the service desk, even with mild weightings.

APPLYING THE KNOWLEDGE IN PRACTICE

Apply this knowledge to your business

Currently, the weighted approach to ticket prioritization is in its infancy. This is both a good and a bad thing.

Since service desk profiles vary widely, a generic model to weighted prioritization just won't work. A more complex model that takes into consideration a multitude of factors is required – a complex algorithm that can be customized to the individual service desk.

The good news: at Vivantio, we recognize the value that weighted prioritization can offer and we are industry leaders in this area.

Reach out to us today to find out how weighted ticketing can help improve your organization's overall level of service.

ABOUT THE AUTHOR

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A Senior IT Service Management consultant with over 20 years of success within the IT industry. Quentin has a wealth of experience in ITSM implementation from small organizations right through to global enterprises specializing in change and service level management.

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At Vivantio, We Build Service Management Solutions To Help Organizations Provide The Very Best Service Possible.

We've been building software-as-a-service (SaaS) solutions for customers across the globe since 2003, including public sector organizations, large businesses and independent service companies.

In that time, we've come to learn that great service reaches well beyond your organization's help desk: it permeates every department of entire organizations and can mean the difference between reaching and exceeding goals and coming up short.

With the Vivantio Platform, we provide a service management solution that is competitively priced, flexible and scalable, so you can improve service while reducing costs and know that your unique service vision will be supported into the future.



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