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## MEASURING AND ESTIMATING THE IMPACT OF HARDWARE/ SOFTWARE CHANGES TO NPS SCORE

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## Title

Measuring and estimating the impact of hardware/software changes to NPS score

## Abstract

Loyal customers are an asset to any company. Net Promotor Score (NPS) is used to measure customer loyalty and how likely they are to refer your products and services to others. NPS indicates the health of the company and its potential to do well in the future. Customers are sent a satisfaction survey which includes the question, “on the scale of 0-10, how likely are you to recommend HP’s product to a friend or colleague?”. Based on their answers the customer is divided into one of three groups, promoters (9 and 10), passives (7 and 8) and detractors (6 and below). NPS is calculated by subtracting the percentage of detractors from the percentage of promoters:

$$NPS = \%promoters - \%detractors$$

Using this formula, one can calculate, a product/platform NPS score. Assuming once calculated, the NPS score is -10, which is not a great one. The company wants to fix this by doing some changes in hardware, software, or services. How do we know these changes will increase or change the NPS score? We propose a methodology that can be applied to quantify how changes or improvement in software, hardware or services improve NPS score.

## Problems Solved

We solved the problem of how to measure the effect of any changes that we do with our product/hardware/services to NPS score.

## Prior Solutions

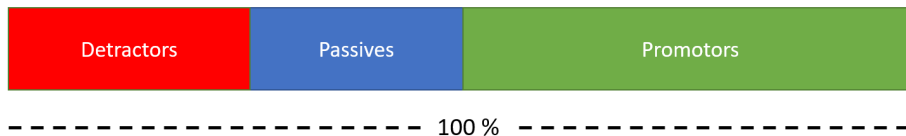
We are not aware of prior solutions.

## Description

Imagine we created a new product/service and then we carefully design this product/service. Finally, we release the product/service to customers. To understand how customer experience our product/service we send a NPS survey to customers. Each customer will get this survey and they will return a Likely to Recommend (LTR) score. The LTR scores range from 0 – 10, and further divided into three categories: (i) 9,10 are promoters, (ii) 7, 8 are passives and (iii) else are detractors. From these LTR, we calculate Net Promotor Score (NPS).

$$NPS = \%promoters - \%detractors$$

Imagine in a population of 100 people whom we send NPS survey to, some portion of the people would be Promoters, Passives and Detractors as shown in a figure below:



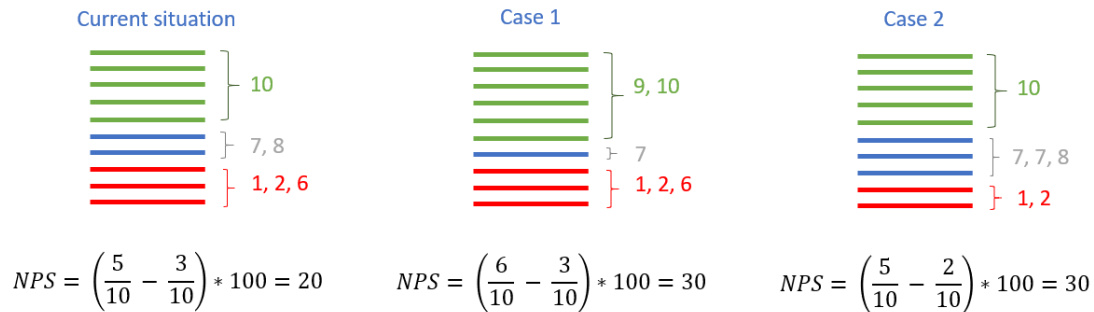
As we can see from the formula and figure above, we can increase NPS by:

1. Increase Promoters (coming from Passives) and keep Detractors constant.
2. Keep Promoters constant and decrease Detractors (becoming Passives).

3. Increase Promoters as well as decrease Detractors.

If we have an immediate effort to increase NPS, what is the easiest way to do? Or whom to target? With this invention, we create a recommendation that we should focus on people who give us LTR score 6 and 8. Score 6 is the upper bound of Detractors and score 8 is the upper bound of Passives.

10 Customers



In the figure above, imagine we have 10 customers that provided NPS survey. In the current situation, we have five people are Promoters (LTR = 10), two people are Passives (LTR = 7, 8) and three people are Detractors (LTR = 1, 2, 6). The NPS score for the current situation is 20. There are three possibilities to increase NPS as we have shown earlier, but the first two are the easier to do, which we demonstrate in figure above. In case 1, we work on people with score 8 (Passive) and convert them to a 9 (Promoters) and keep Detractors constant. As we can see, NPS score is increased to 30. In case 2, we work on people with score 6 (Detractor) and convert them to a 7 (Passive) and keep the Promoters constant. The NPS increase to 30 which is like case 1.

With this information, we know which group of customers to target to increase the overall NPS score. With combination with text analytics, we would know what those group of people not happy about the experiences and we can set up an intervention in between to improve the experiences.

## Advantages

This invention will help us:

1. Find a way to strategically increase NPS score
2. Find a customer segment where we can target them first to increase NPS score.

***Disclosed by Anton Wiranata and Parvin Shabeena, HP Inc.***