The Power of a Pleasant Train Journey

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Introduction

If people want to visit an activity by train they go through a couple of trip phases. NS (Netherlands Railways) has investigated the (emotional) evaluation and the importance of each phase in the total trip (Van Hagen & de Bruyn, 2012, Van Hagen & Bron, 2014, Van Hagen & de Bruyn, 2015). Research (Van Hagen & de Bruyn, 2015) shows that the phase ‘In the train’ is the most important one, and also the phase that has the highest evaluation, emotionally. The most important emotions are ‘satisfied’ and ‘relaxed’, which are positive emotions with little arousal. But there are also more exciting positive emotions, that can make people really happy (Van Hagen & De Bruyn, 2015, Van Hagen, 2011). Research into emotions on railway stations (Van Hagen, 2011) shows that a higher intensity of the emotions (more arousal) leads to a higher customer satisfaction (Van Hagen & De Bruyn, 2015) and a higher satisfaction leads to a higher loyalty (Jones & Sasser, 1995). The main question to be answered in this paper is: which interventions have to be made to make a train journey a pleasant one? We focus thereby on influencing the experience of the train journey, and creating those circumstances that initiate arousing emotions and make passengers happy. In the first part of the paper we will introduce relevant theories on this subject. Next we will highlight results from customer research on activities during the train trip and their influence on customer satisfaction. Finally we will discuss three live experiments on the train and their results on customer satisfaction including some conclusions and recommendations.

Theory

Why would a railway company want to make its passengers happy? Simply, because companies that focus on positive emotions have achieved better from a financial point of view. Waterman Consulting (2014) investigated the top 500 listed companies in the USA and divided these into early adopters and laggards with regards to the experience economy (Pine & Gilmore, 2011). They found out that early adopters by far have a healthier financial position than laggards. NS research shows that passengers that experience most positive emotions are most satisfied about both their trips and the company providing the service (Van Hagen & De Bruyn, 2015). Moreover customers that are more satisfied are also more loyal and spend more money (Jones & Sasser, 1995). Figure 1 shows that there is no linear relationship between loyalty and customer satisfaction, but loyalty increases exponentially with higher satisfaction. The big difference is made between 7 and 8 on a 1-10 scale, and scores exceeding 8 can be seen as a break away zone: customers become very loyal fans of the company. NS research showed the same mechanism also works for train passengers (NS Barometer, 2008-2012). Up to a score of 7 on a 1-10 scale the passenger is in fact indifferent about the services offered. If a railway company truly wants to touch its passengers and make them happy, scores of 8 or up are needed.
Figure 1. Relation between customer satisfaction and loyalty.

More pleasure

The Stimulus Organism & Response model (Mehrabian & Russel, 1974) states that positive emotions lead to approach behaviour (see figure 2).

Figure 2. Stimulus Organism & Response model (Mehrabian & Russell, 1974).

This means that when people experience positive emotions, they want to stay longer, explore their surroundings, come back, and give more positive evaluations. Emotions are influenced by stimuli from the surroundings, which are noticed consciously for less than 5% (Zaltman, 1995). This means that people, on a conscious level are not very aware of their surroundings, but the surroundings do influence their emotions and behaviour. This also means that creating surroundings with the right amount of stimuli can lead to positive emotions and cause higher customer satisfaction. This makes people wanting to come back, without them being fully conscious of the positive influence of their surroundings. In reverse this also means that stimuli leading to negative emotions cause low satisfaction and avoidance behaviour. Each surroundings creates stimuli, thus the surroundings always influence emotions and behaviour. Companies should therefore focus on positive stimuli from the surroundings.
How can emotions be influenced?

The optimal arousal and reversal theories of Berlyne (1971) and Apter (2007) respectively offer some clues for influencing emotions in a positive way. In figure 3 this is visualized. The x-axis shows the amount of stimuli by the surroundings, ranging from very little to very much stimuli. The y-axis shows the emotional state (hedonic tone), ranging from negative to positive emotions. From the optimal arousal theory (Berlyne 1971, Wundt, 1910) we learn that people feel most pleasant when they are in their comfort zone, meaning not experiencing too many but also not too few stimuli (see figure 3).

![Figure 3. Optimal arousal theory: connection between amount of stimuli and pleasure.](image)

Apter (2007) enhances the optimal arousal theory by stating that the motivational orientation and thus the situation is key in determining the right amount of stimuli for experiencing pleasure. This way there are situations in which people want as little stimuli as possible (visiting a graveyard) but also situations that require a lot of stimuli (for instance visiting a discotheque). Translating this into train travel, we can distinguish ‘must’ passengers (commuters, students) that focus on a fast and reliable trip and ‘lust’ passengers (leisure purpose), that are also open to non-trip related stimuli from the surroundings. Must passengers feel best while experiencing little stimuli, while lust passengers like lots of stimuli (Van Hagen, 2011). For a railway company that wants to attract more customers that also travel more frequently it is important to focus on the emotions of their lust passengers. Lust passengers make up the largest group of unique people, they are open to stimuli, mostly travel during the off-peak period and make relatively few train trips currently. Must and lust passengers both have an optimal arousal curve: one with few stimuli for must passengers and one with high stimuli for lust passengers (see figure 4). People that experience few stimuli feel relaxed. There is a danger though that people that feel relaxed in the end will experience too few stimuli and get bored. Boredom is a negative emotion, and one wants to avoid such a situation. The essence of the reversal theory is that people that are bored because they experience too few stimuli actually want to be stimulated in that situation and seek for more stimuli. In figure 4 this situation can be found in the upper right corner. It is indicated as “excitement”. Van Hagen (2011) was able to show that the reversal theory can be applied to passengers waiting at train stations. In an environment
with lots of stimuli (for instance by adding music, warm colours or infotainment) lust passengers experience more positive emotions, are more satisfied about the train station, and they feel that time passes by more quickly than in an environment with few stimuli.

Figure 4  Reversal theory: two optimal arousal levels for must and lust passengers
Activities during the train trip

Now we have discussed the relevant theories behind influencing emotions and customer satisfaction, it is time to apply these theories, by taking a closer look at train trips and the way passengers experience their trip in the Netherlands. Passengers spend on average 36 minutes on the train during a trip with NS. About half of all trips with NS takes less than 30 minutes, but also 15% lasts over an hour.

During the train trip passengers can carry out a lot of different activities. In an extensive quantitative research (NS, 2015) respondents were asked what activities they carried out during the train trip. The most popular activities are ‘Looking outside’, ‘Reading’ and ‘Talking’ (see table 1).

<table>
<thead>
<tr>
<th>Activity</th>
<th>Carried out on x% of all train trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Looking outside</td>
<td>34%</td>
</tr>
<tr>
<td>Reading</td>
<td>28%</td>
</tr>
<tr>
<td>Talking</td>
<td>23%</td>
</tr>
<tr>
<td>Surfing the internet</td>
<td>21%</td>
</tr>
<tr>
<td>Social media</td>
<td>20%</td>
</tr>
<tr>
<td>Listening to music</td>
<td>20%</td>
</tr>
<tr>
<td>Relaxing</td>
<td>16%</td>
</tr>
<tr>
<td>Daydreaming</td>
<td>15%</td>
</tr>
<tr>
<td>Eating/drinking</td>
<td>11%</td>
</tr>
<tr>
<td>Working/studying</td>
<td>9%</td>
</tr>
<tr>
<td>Gaming</td>
<td>9%</td>
</tr>
<tr>
<td>Sleeping</td>
<td>5%</td>
</tr>
<tr>
<td>Looking up travel info</td>
<td>5%</td>
</tr>
<tr>
<td>Phoning</td>
<td>4%</td>
</tr>
<tr>
<td>Making puzzles</td>
<td>3%</td>
</tr>
</tbody>
</table>

There is a big difference in activities per trip purpose: commuters are often reading or surfing the internet, both activities that are ‘train only’. On leisure trips on the other hand passengers are often looking outside or talking.

In a Customer Journey research (MuConsult, 2015) has been investigated how each trip phase contributes to total customer satisfaction (Van Hagen & De Bruyn, 2015). For the phase ‘On the train’ the activities that are carried out were recorded (with a little less categories than in NS (2015)), as well as the extent to which travel time was regarded useful or pleasant. The activities ‘Working’ and ‘Phoning’ correlate stronger with useful time, while the other activities are regarded as pleasant. The activities that correlate strongest with pleasant time are ‘Looking outside’, ‘Making puzzles’ and ‘Talking’ (see figure 5).
Effect of time spent on the train on customer satisfaction

As shown in the Stimulus Organism & Response model (Mehrabian & Russel, 1974) a pleasant experience leads to positive emotions. With a train trip regarded as more pleasant, passengers have more positive emotions. The most common emotions for a pleasant train trip are ‘relaxed’ and ‘satisfied’, but also the more intense emotion ‘happy’ occurs for 10% of all pleasant train trip (see figure 6).

Figure 6: Emotions for different scores of a pleasant train trip

The positive emotions during a pleasant train trip lead to a positive evaluation of the trip (Van Hagen & De Bruyn, 2015). With time spent more pleasantly the evaluation of the trip rises: from 2.5 (on a
scale ranging from 1 to 10) for a score of 1 on time spent pleasantly to 9.2 for a score of 10 on time spent pleasantly. For a useful trip the evaluation rises as well, but less sharply: from 4.2 to 8.9 (see figure 7). Spending time pleasantly thus leads to higher customer satisfaction than useful time. Correlation coefficients for both categories of spending time with the trip satisfaction show the same result: 0.62 for pleasant time versus 0.49 for useful time. Both correlations are significant (p < 0.01).

![Figure 7: Correlation between a useful or a pleasant time and trip satisfaction](image)

Three experiments

We have seen that reversal theory explains how lust passengers can positively be stimulated. We have also seen that if we want to get higher scores from our passengers we have to make sure that passengers experience time on the train spent pleasantly instead of usefully. In order to test the applicability of the reversal theory on a train trip NS has carried out three experiments which focus on trips made by ‘lust’ passengers. For those trips we stimulated the experience in a positive way by entertainment during the trip. We have chosen three experiments connected to events, or leisure destinations that mostly attract lust passengers. The goal of the experiments is to make the passengers happier by creating an atmosphere in the train on the way to the event that fits to the motivational orientation of the passengers.

The three experiments are:

1. **Pink Monday Express (July 2013)**
2. **3-Uurkes Express (February 2014)**
3. **GLOW Train Experience (November 2015)**

1. **Pink Monday Express**

The experiment ‘Pink Monday Express’ (in Dutch: RozeMaandagExpress) is an experience concept linked to the event ‘Pink Monday’. Pink Monday is part of a 10-day public event called the Tilburg fair. Tilburg’s fair has been around for years and is the largest fair in the Benelux. Each year the fair,
in the North Brabant city of Tilburg counts more than a million visitors. The busiest day of the fair is Pink Monday, annually around 300,000 visitors a day. Both the Tilburg fair as Pink Monday are open to the public.

The experience concept Pink Monday Express consists of three elements:
- train
- train station
- parade

The Pink Monday Express took place on the 22nd of July 2013, a regular train running from Amsterdam via Utrecht to Tilburg. The theme of the Pink Monday Express was "pink karaoke". Passengers were invited to sing along with the music that was specifically composed for this train. Members of the Lesbian, Gay, Bisexual and Transgender (LGBT) network of the rail sector distributed the lyrics to the passengers so that everyone could participate. Music equipment in all trainsets, except the 1st class, made the pink karaoke possible. On arrival in Tilburg, passengers were warmly welcomed at the train station which was decorated as festive meeting place for all visitors to Pink Monday. DJ's played music and there was a performance by local artists on a stage. The Mayor of the city of Tilburg sounded the starting signal for the parade. From the station to the location where the opening of the Pink Monday took place, a parade of visitors walked together through the streets of Tilburg. It was a great party of fraternization!

2.1 3-Uurkes Express
The 3-Uurkes Express is an experiment linked to the event ‘3-Uurkes Vurraf’. 3-Uurkes Vurraf is a carnival event for which a (free) ticket is required. The event takes place, one day before the start of the 4-day public event Carnival. Carnival is annually celebrated especially in the southern provinces of the Netherlands. On average this event has around 1 million visitors. Carnival is open to the public.

The experience concept 3-Uurkes Express consists of 3 elements:
- train
- railway restaurant
- from the railway restaurant to the event

The 3-Uurkes Express took place on Friday the 28th of February 2014, on the rail route from Roosendaal, Breda and Tilburg to Eindhoven. At each station (except the arrival station) 75 carnival celebrants got in a carnivalesque decorated train, accompanied by a local brass band. Each town has been allocated a trainset where consumption cans were ready for them. At the station of Roosendaal artists with regional recognition got on the train. These artists went singing through all the trainsets and were photographed with passengers. On arrival in Eindhoven, final destination, the passengers were taken to the railway restaurant where they were offered a lunch. Here, they also got an event ticket for the ‘3-Uurkes Vurraf’. After lunch, a highly colourful parade walked together from the station restaurant to the event.

3.1 GLOW Train Experience
The third experiment is the GLOW Train Experience linked to the GLOW event. GLOW is a public light art festival in the city centre of Eindhoven. Artists and designers show during this 8-day public event, their light installations, sculptures, projections and performances. These all offer the visitors of
GLOW a surprisingly new perspective on the city. GLOW can be visited, free of charge. Over 730,000 people visited GLOW last year. In 2015, the 10th edition of the event took place.

The GLOW Train Experience took place from Saturday the 7th of November till Saturday the 14th of November 2015. Daily a GLOW compartment was decorated in a regular train on one of the rail routes to Eindhoven. In the GLOW compartment passengers were handed a VR master, a smartphone and headphones by which they could see a 360 degree movie after a brief instruction. In the movie passengers were taken in a moving train that slowly turned into a roller coaster. Sitting in this virtual train, passengers were able to see the highlights of the past 9 years GLOW. This movie could also be experienced at one of the many locations of the event.

The method
The primary goal was to create a happy experience for our passengers on the way to the events, and the secondary objective was to enable as many people as possible in this happy experience. In order to reach these goals we first had to create experiments that make people happy, followed by setting up a network to communicate with as many people as possible and then we had to measure the effects. For creating the right experiments and setting up a network for the communication, we used the Imagineering design method (Nijs, 2014) because this method aims to strengthen the relationship between the organization and its stakeholders in the broadest sense of the word through experience communication. Imagineering also means value creation and value innovation from the experience perspective.

The central question in these experiments was ‘How can NS develop loyalty among lust passengers by having them to experience something that is not only in the interest of NS but also generate value for all stakeholders involved?’ Therefore, we set up a design process and we established a network for the communication.

Procedure experiments
In order to measure the effects we used the Train Experience Monitor (for explanation of the method see Van Hagen & Sauren, 2013, Van Hagen & Sauren, 2014). The Train Experience Monitor is a short theoretical based and profoundly tested questionnaire which people can fill in during the experience, so while travelling on the train to the event. Questions are asked about the experience (e.g. "I think this train experience is a nice initiative form NS"), the emotions (e.g. "I feel pleasant in this train"), end values (e.g. "what is your score for the train/train trip/ NS as a company"). Also questions were asked about dissatisfiers ("I experience this train as clean/safe") and satisfiers (e.g. "I have spent my time on this train in a pleasant way, I experience the staff as friendly and I experience this train as comfortable /colourful").

The participants of the experiments 'Pink Monday Express' and the 'GLOW Train Experience' were regular passengers; both lust and must passengers. A random list of passengers travelling from A to B. These passengers could be aware of the experiments because the experiments have been published beforehand.

The 3-Uurkes Express concerned private passenger transport. Passengers in this train could register through the website of the collaborating partner. The partner selected a total of 200 passengers on
the basis of residence. Per departure station of the 3-Uurkes Express, 50 people were sent a train ticket.

Results of the experiments

The impact of the three experiments on customer satisfaction is measured with the Train Experience Monitor (Van Hagen & Sauren, 2013; Van Hagen & Sauren, 2014). Because in the Pink Monday Express and the 3-Uurkes Express experiments an entire train is involved, there are enough respondents for reliable analyses (N = 352 for Pink Monday Express, N = 418 for 3-Uurkes Express). The Glow Experience took place in just one carriage, which means the number of respondents is limited (N = 48), and results are indicative only. Table 2 shows the key results of the three experiments.

Table 2. Key results of the three experiments*.

<table>
<thead>
<tr>
<th></th>
<th>Pink Monday</th>
<th>3-Uurkes Express</th>
<th>Glow Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-test</td>
<td>Post-test</td>
<td>Pre-test</td>
</tr>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Nice initiative</td>
<td>-</td>
<td>9.2 (1.15)</td>
<td>-</td>
</tr>
<tr>
<td>Pleasant</td>
<td>7.1 (1.66)\textsuperscript{a} 9.2 (1.25)\textsuperscript{a}</td>
<td>7.1 (1.32)\textsuperscript{a} 8.9 (1.54)\textsuperscript{a}</td>
<td>7.0 (1.20)\textsuperscript{a} 7.8 (1.30)\textsuperscript{b}</td>
</tr>
<tr>
<td>Train</td>
<td>7.2 (1.03)\textsuperscript{a} 8.7 (1.08)\textsuperscript{a}</td>
<td>7.1 (1.19)\textsuperscript{a} 8.7 (1.61)\textsuperscript{a}</td>
<td>6.8 (1.45)\textsuperscript{a} 8.4 (1.12)\textsuperscript{a}</td>
</tr>
<tr>
<td>Train trip</td>
<td>6.7 (1.79)\textsuperscript{a} 8.8 (1.04)\textsuperscript{a}</td>
<td>7.5 (1.10)\textsuperscript{a} 8.7 (1.55)\textsuperscript{a}</td>
<td>7.7 (0.94)\textsuperscript{a} 8.6 (1.07)\textsuperscript{a}</td>
</tr>
<tr>
<td>NS as a company</td>
<td>6.4 (1.61)\textsuperscript{a} 7.0 (1.94)\textsuperscript{a}</td>
<td>6.5 (1.68)\textsuperscript{a} 7.8 (2.22)\textsuperscript{a}</td>
<td>6.1 (1.75)\textsuperscript{a} 7.6 (1.30)\textsuperscript{b}</td>
</tr>
<tr>
<td>Pleasant time</td>
<td>7.6 (1.67)\textsuperscript{a} 8.9 (1.56)\textsuperscript{a}</td>
<td>7.3 (1.61)\textsuperscript{a} 8.8 (1.78)\textsuperscript{a}</td>
<td>-</td>
</tr>
<tr>
<td>Colourful</td>
<td>6.1 (1.72)\textsuperscript{a} 7.3 (2.59)\textsuperscript{a}</td>
<td>5.9 (1.77)\textsuperscript{a} 7.9 (1.95)\textsuperscript{a}</td>
<td>5.8 (1.95)\textsuperscript{a} 6.9 (1.58)\textsuperscript{b}</td>
</tr>
<tr>
<td>Comfort</td>
<td>7.4 (1.53)\textsuperscript{a} 8.5 (1.38)\textsuperscript{a}</td>
<td>6.9 (1.44)\textsuperscript{a} 8.4 (1.66)\textsuperscript{a}</td>
<td>7.2 (1.05)\textsuperscript{a} 7.5 (1.45)\textsuperscript{a}</td>
</tr>
<tr>
<td>Staff</td>
<td>5.7 (2.35)\textsuperscript{a} 8.6 (2.03)\textsuperscript{a}</td>
<td>6.1 (2.32)\textsuperscript{a} 7.6 (2.59)\textsuperscript{a}</td>
<td>6.6 (2.03)\textsuperscript{b} 8.2 (1.26)\textsuperscript{a}</td>
</tr>
<tr>
<td>Cleanliness</td>
<td>6.6 (1.86)\textsuperscript{a} 8.3 (1.80)\textsuperscript{a}</td>
<td>6.1 (1.93)\textsuperscript{a} 8.1 (2.15)\textsuperscript{a}</td>
<td>6.6 (1.48)\textsuperscript{a} 7.9 (0.97)\textsuperscript{b}</td>
</tr>
<tr>
<td>Safety</td>
<td>8.2 (1.19)\textsuperscript{a} 9.0 (1.38)\textsuperscript{a}</td>
<td>7.9 (1.44)\textsuperscript{a} 8.6 (1.99)\textsuperscript{a}</td>
<td>8.1 (0.98)\textsuperscript{a} 8.6 (1.02)\textsuperscript{b}</td>
</tr>
</tbody>
</table>

Note: Means with identical superscripts (\textsuperscript{a,b}) differ significantly in the row: \textit{p < 0.001, }\textit{p < 0.05}

SD = Standard Deviation

*Scores on scale from 1 (very bad) to 10 (excellent)

Emotions and appreciation of the initiatives

It turned out that with these experiments the train trip is experienced in a much more pleasant way. Especially in the 3-Uurkes Express and the Pink Monday Express people experience the train trip as much more pleasant.

All three experiments (initiatives) are rated with a score of close to 9 on a scale of 1-10. Because the 3-Uurkes Express and the Pink Monday Express consist of an entire train, there are no reference scores within the same train. The Glow Experience was one carriage only. A normal carriage in the same train is taken as a reference. People visiting the Glow exhibition \textit{and} being in the Glow
Experience rated their train trip almost 2 grades higher on a 10 point scale than people in a normal carriage visiting the Glow exhibition.

**Total satisfaction scores**

The Train Experience Monitor has three end values, the so called total satisfaction scores: train, train trip and NS as a company. On all three of these total satisfaction scores the respondents in the three experiments show significant higher satisfaction scores, with differences up to 2 grades on a 10 point scale. The Pink Monday Express also influences the image of NS as a company, though less than the 3-Uurkes Express and the Glow Experience, that showed over 1.5 higher grade for the image of NS.

**Influence on dissatisfiers**

It is quite logical that the experiments highly influence satisfaction on satisfier items like colourful, comfort or pleasant time (see table 2). Scores on these items are 1 to 2 grades higher than normal for the experiments. But also scores of dissatisfiers like safety and cleanliness are 0.5 to even 2 grades higher than normal. And also staff is evaluated more positively with the experiments, with the Pink Monday Express having the most extreme effect: almost 3 grades higher than normal. This means that events like these affect also the core business of NS in a positive way.

**Communication**

So the impact on the passengers who experienced the three experiments is quite impressive. But due to the communication plan via (social) media and the platforms of the partners thousands of people were aware that NS was co creating positive events.

**Results communication**

![Image of communication results]

**Conclusions**

A train trip to a pleasant destination has a higher satisfaction score than a trip to a less pleasant destination. The expected pleasure at the destination influences the mood of the passengers positively while on the way to the event. The pleasure of the train trip can be augmented by giving special attention to the passengers on the way to the event. With three experiments we have shown
that both the pleasure during the trip and total satisfaction scores about the trip and NS were significantly higher. It is remarkable that scores are higher not only for satisfiers but also for dissatisfiers. By creating a pleasant atmosphere during the trip the trip is evaluated much more positively than without this attention. The accent shifts from a functional trip that has to be predictable to a pleasant experience, in which passengers want to be surprised. Moreover it seems that passengers do not care that much about the dissatisfiers like cleanliness for example when they are in an excellent mood, so that shows us the power of a pleasant train trip.

**Recommendations**

This research shows that bringing the essence of events to the train towards the events has a huge positive impact on the travel experience. Not only for the passengers themselves, that can enjoy their trip in the moment, but they also share their positive experiences on social media. This way lots of other people learn that NS makes traveling by train fun. With this knowledge it seems wise to make a year calendar with events that are suitable for extra festivities on the train and/or station. It would be best if every day there is an event somewhere in the country, generating a continuous flow of positive attention for NS that can be shared with others. At the end of the day we expect that this will have a huge impact on the image of NS.
Literature