

# Applying tailor-made Growth Hacking to SMEs

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**Abstract.** Since the introduction of Growth Hacking, numerous papers researched company-specific implementations, thus making their solutions not versatile enough to apply to other companies. This paper proposes a Growth Hacking method suitable to SMEs by providing 4 step-by-step activities: Diagnose, Design, Implement and Monitor. These activities are visualized with Process-Deliverable Diagrams and result in suggested Growth Hacking tools, by a recommendation system, to be implemented at the SME in case. While not fully validated, with further research, this method should be easily applied to SMEs in an affordable and effective way to implement Growth Hacking and allowing SMEs to grow faster.

**Keywords:** Growth Hacking, SMEs, recommendation system, tools.

## 1 Introduction

In the year 2010, Sean Ellis coined a term called Growth Hacking (GH), which he defined as “a person whose true north is growth. Everything they do is scrutinized by its potential impact on scalable growth.” Over the years, various papers have stated numerous definitions of GH, emphasizing the recent introduction and wide scale of fields GH is touching [1, 2]. For this research paper, combining various definitions, we define GH as “A process in which, with quick experimentation, the most effective and efficient tools are found to expand a start-up”.

Since its introduction, several papers have been published describing the implementation of GH for specific cases [3, 4]. Hence, due to their very nature, it is difficult to apply these specific GH implementations to other SMEs. Their reusability is low. Therefore, the main research objective is to contribute a situational Growth Hacking method which tries to improve the effectiveness and efficiency of Growth Hacking at SMEs. The following research questions (RQ) are deduced from the main research objective:

- How can we measure effectiveness of the GH tools used at SMEs? (RQ1)
- What GH tools are currently available? (RQ2)
- How can a situational GH method be proposed in a way that it is versatile yet affordable for SMEs? (RQ3)
- What are the benefits and drawbacks of the contributed situational GH recommendation system? (RQ4)

This research paper is conducted as a technical action research at Goboony [5]. Goboony is a start-up in the upcoming market of renting out your own property or goods, via an online platform, such as Airbnb and Uber. The focus of Goboony can be found at motorhomes. They have created an online platform where possible motorhome renters can easily get in contact with motorhome owners and rent the motorhome via the platform. As with every online start-up, getting enough traffic to your website is key in building a sustainable company which can grow and be profitable. Finding motorhome owners who are willing to put their motorhome on their platform is one of the main foci of Goboony now. To find these motorhome owners and get in touch with them, multiple GH tools are used. Currently, Goboony is in the process of doing research on these tools, to eventually use them or develop their own tools.

In chapter 2, the research method of this paper is explained. The next three chapters present the situational Growth Hacking method by researching the current GH situation in chapter 3, proposing the situational Growth Hacking method in chapter 4 and applying the method in chapter 5. The final two chapters consist of the discussions and the conclusion where the benefits and drawbacks of the proposed method are stated.

## 2 Research Method

The framework that designs and explains the research method, used for this research project, is the design cycle by Wieringa [6]. This method consists of three tasks. These

three tasks are the Problem Investigation, Treatment Investigation and Treatment Validation. This cycle can be used multiple times as a treatment is deemed insufficient at the treatment validation task.

The problem investigation task will be used to understand the phenomena that must be improved and why. Interviews are conducted to get an understanding on the limitations of the GH tools currently used at Goboony, using the interview template found in Appendix A. A literature study is conducted to expand the knowledge about the limitations. The method used for this literature study can be found in Appendix B. At the end of this task, we can answer the first research question (RQ1).

During the treatment investigation task, the acquired information will be used to design a solution for the problem as stated in the introduction. First, we investigate how a situational Growth Hacking method can be used by an SME in an affordable yet effective way. A concrete set of methods and tools will be created to be used in combination. Moreover, a research will be conducted on the GH tools available and an overview will be given by categorizing them according to a fixed set of categories. An overview of GH tools will be created based on videos from Growth Tribe [7]. This is an academy where courses and workshops can be followed to gain a better understanding of applying Growth Hacking for yourself or a company. Their YouTube channel provides a playlist with videos called “Growth Insights” where in each video the most recent GH tools are presented and summarized [8]. At the end of this task, we answer the second research question (RQ2) and third research question (RQ3).

In the treatment validation task, the results of the methods are validated. This validation process consists of one step. This step involves an assessment from one expert with knowledge on Growth Hacking. During this assessment, the proposed situational Growth Hacking method is presented to the expert, in order to get feedback on the method. At the end of the treatment validation task, we answer the final research question (RQ4). A Gantt chart can be found in Appendix D, giving a visual representation of the time and effort planning of this paper.

The next chapter covers the problem investigation task and investigates the current situation of GH usage at Goboony and show a method to conclude where the current limitations of GH are and provides a way to categorize GH tools.

### **3 Understanding the current situation**

When creating a solution for a problem, the problem must be made clear. The goal of this paper is to create a situational Growth Hacking method which can be easily applied to the current situation of different SMEs. To be able to understand the current situation at Goboony, an interview is needed. This interview creates a clear view of the current use of GH tools within the company and provides a stepping stone for the situational Growth Hacking method. Before starting with the creation of an overview, we need to make clear what GH tools are, as there is much debate on the exact definition of Growth Hacking. However, consensus is found in the idea that Growth Hacking is a combination of marketing and IT where development is testable, trackable, scalable and cost-

efficient [3, 4, 9]. In this research paper we adhere to this definition and state that GH tools should be testable, trackable, scalable and cost-efficient.

The interview took place with Werner van den Bergh, Head of Support & Operations of Goboony, using the template shown in Appendix A. During this interview, an overview of the current GH tools used by Goboony was created to gain a better understanding of the current situation. To categorize these tools, the AARRR startup metrics model by Dave McClure was used [10]. This model divides the customer life cycle into five steps:

1. **Acquisition:** users come to the site from various channels
2. **Activation:** users enjoy 1<sup>st</sup> visit: “happy” user experience
3. **Retention:** users come back, visit site multiple times
4. **Revenue:** users conduct some monetization behaviour
5. **Referral:** users like product enough to refer others

A table is made, based on the AARRR model, and after finishing the interview, table 1 is created. Table 1 shows an overview of GH tools currently being used at Goboony, for the Dutch market only. A blue filled cell states that the specific GH tool is applied to the corresponding AARRR category. Furthermore, we focus on the period starting from June 1<sup>st</sup> and ending on September 30<sup>th</sup>. During this period, these tools were extensively used. The reason of choosing to focus on the Dutch market only is because the international markets of Goboony are still in rapid development where multiple tools are being tested and discarded thus making a reliable overview too difficult. The tools shown in table 1 are described and categorized in Appendix D. Please note that table 1 is specifically for Goboony and that the tools mentioned, can also possibly be applied to other AARRR categories.

Name of tool	Acquisition	Activation	Retention	Revenue	Referral
Mailchimp					
Zapier					
ProsperWorks					
Typeform					
Google Analytics					
Google Tag Manager					
Hotjar					
E-book download					
Facebook					
Blogs					

**Table 1.** – Overview GH tools at Goboony

Having created an overview of the GH tools currently used a Goboony, understanding if the effectiveness of the tools is high, is needed and if so, improve efficiency. Using a combination of Google Analytics data and data from the Goboony Database, we can further understand effectiveness of the GH tools used at Goboony.

During a brainstorm session at Goboony, eight critical steps were chosen where

growth is needed. These steps can be found in table 2, in the second column named 'User status'. Each step corresponds with one of the 5 steps from the AARRR model from McClure. Using the information provided by Google Analytics and the database from Goboony, a conversion percentage can be associated to each user status, thus providing us with the information necessary to conclude if the GH tools currently used at Goboony are effective, or not. The conversion statistic describes a percentage of users, relative to a previous conversion percentage as shown within the brackets. As with table 1, table 2 uses data from the Dutch market only and during the same period, being from June 1<sup>st</sup> until September 30<sup>th</sup>.

Category	User status	Conversion
Acquisition	User visits the website	100.0%
Acquisition	User stays on website (100%, minus the bounce rate: user who leaves the website while only viewing homepage)	65.0%
Activation	User creates an account (relative to staying users)	2.9%
Activation	User makes a request or inquiry (relative to staying users)	4.7%
Retention	User makes a 2 <sup>nd</sup> booking (relative to all users that have booked)	2.9%
Retention	User visits the site again (percentage of sessions)	47.0%
Revenue	User makes a booking (relative to staying users)	0.7%
Referral	User recommends friend	0.0%

**Table 2.** – Conversions Goboony per AARRR category

Having collected the data needed for making conclusions, we go through each category with the following method:

If effectiveness is high:

- Can we improve this by being more efficient?

Else:

- How can we improve the effectiveness?

Acquisition seems to be effective, having a bounce rate of only 35%, which is an industry average and suitable for Goboony as stated by the company itself [11]. This can be explained by the large number of tools used at Goboony for acquisition. Further investigation is needed to see if some of those tools are less effective and should be discarded to improve the overall efficiency. The conversion percentages of activation

are not as good as the percentages of acquisition. Both percentages of activation are not as good as expected by Goboony, even with many tools used. The category activation should be investigated to get higher effectiveness. This conclusion also applies for the retention category and revenue category, because of the low percentage of users who make a first or second booking. When looking at referral, a striking image can be seen as there is 0% conversion and thus zero effectiveness. A reason behind this number is the fact that Goboony only uses one tool. Therefore, we probably should see improvement by using more tools which are focused on referral.

Having concluded where the problems arise at Goboony, the next step can be started: How can we be more efficient in categories where effectiveness is high? And how can we improve the effectiveness of categories where the effectiveness is low? In the next chapter, a situational GH method is proposed which answers these questions.

## 4 Creating a versatile method

The situational Growth Hacking method proposed in this paper is visualized with the help of the Process-Deliverable Diagram (PDD) technique [12]. With the aid of a PDD, a clear overview can be created of the method activities and corresponding products. A PDD specifies the process part of the method as a UML activity diagram and combines it with a UML class diagram to specify the product part. Furthermore, the OO-Method and the Integranova model-driven technology is used for the cardinalities and relationship roles of the class diagrams [13]. The notation used for the PDD technique is shown in Figure 1.

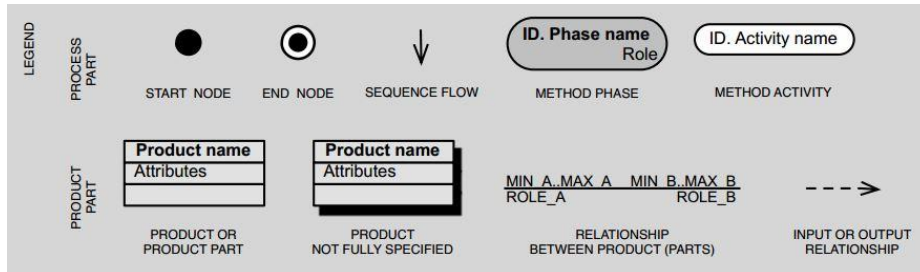


Fig. 1. Notation for the PDD technique.

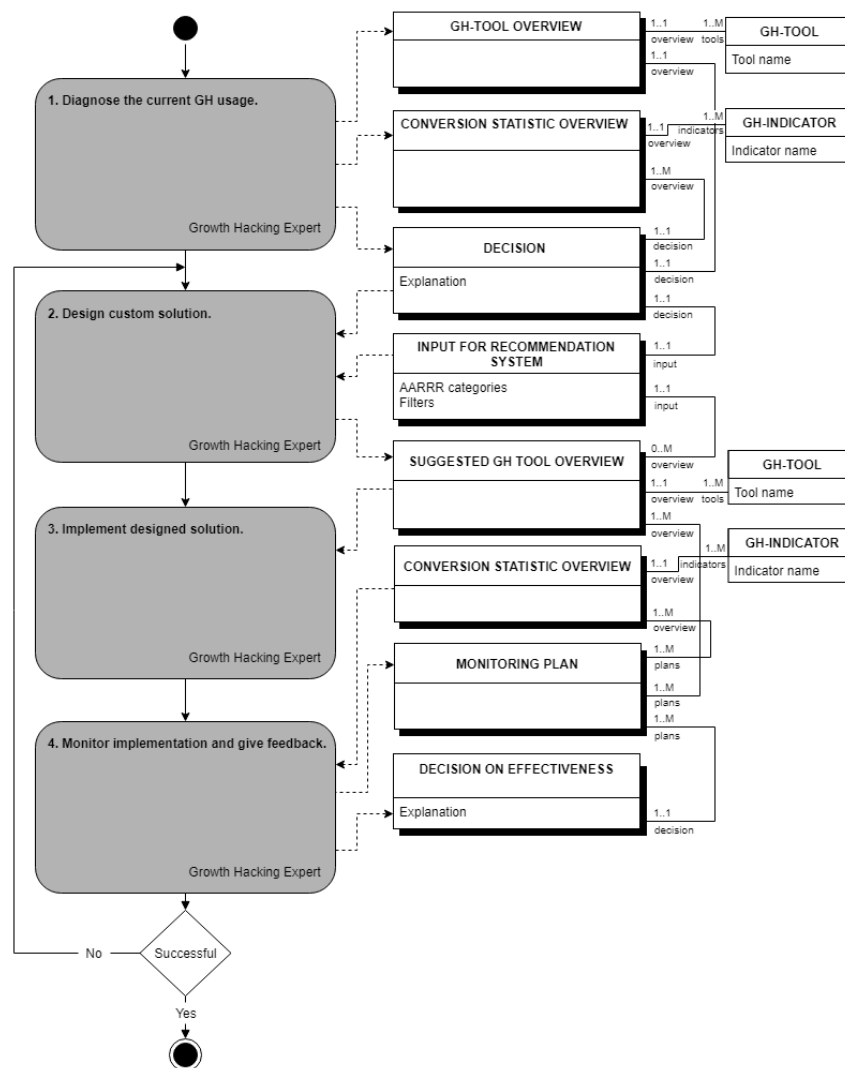
### 4.1 Overall method structure

The proposed situational Growth Hacking method consists of four main phases: 1. *Diagnose the current GH usage*, 2. *Design a custom solution*, 3. *Implement the designed solution* and 4. *Monitor implementation and give feedback*. The PDD in Figure 2 shows these four phases, together with their inputs and outputs.

The first phase is constructed to gain a better understanding of the current situation at an SMEs regarding the use of Growth Hacking tools. Following the 3 activities within this first phase results in a conclusion stating what kind of GH tools to use for improving an AARRR category. The second phase designs a custom solution using a

recommendation system with the results from the first phase as input and a tailor-made suggestion as output. The third phase regards the implementation of the suggested tools from the previous phase which initiates the last phase. The final phase, the fourth, sets up a monitoring and feedback plan by following three activities. This results in a decision stating if the suggested GH tools gave the expected results. After this phase, a loop is in place to design a new solution when the current solution is deemed ineffective.

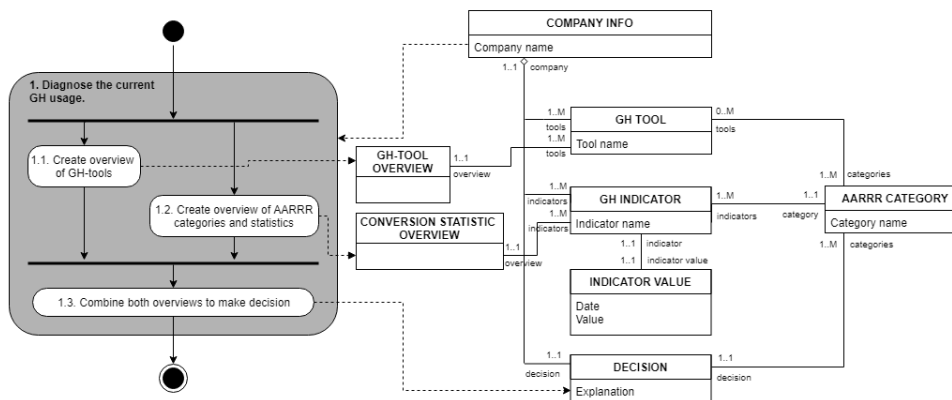
In the next four sections, each aforementioned phase is described in greater detail by singling out, and zooming in on, each phase one by one.



**Fig. 2.** Overall structure of the Growth Hacking method.

## 4.2 Diagnose

The first phase of the proposed situational Growth Hacking method is used to diagnose the GH usage at the SME involved and introduce the SME to this method. Figure 3 depicts this first phase called ‘*Diagnose the current GH usage*’ by means of a PDD. The PDD in Figure 3 shows on the left side the three main activities to be taken and on the right side the products, and its details, involved in these three activities.



**Fig. 3.** Details of the diagnose phase.

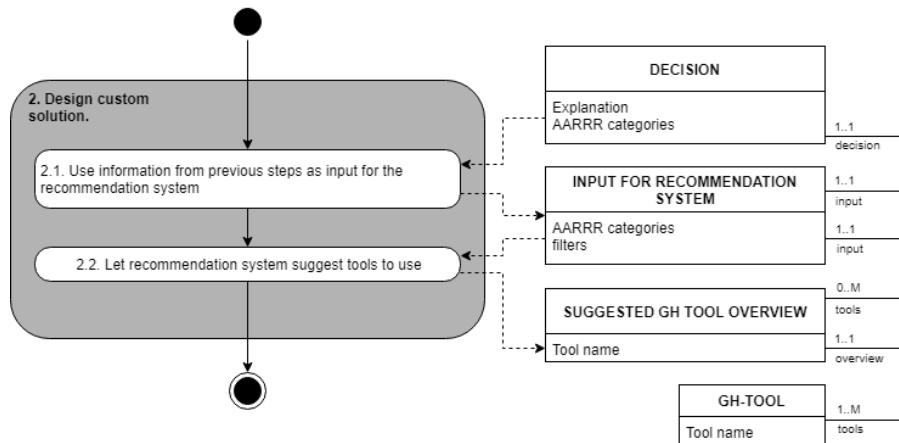
The first steps to be taken in this phase are activity 1.1 and activity 1.2. Note that these two activities can be started simultaneously, since both activities are independent from each other in terms of the data being needed. The creation of an overview of GH tools (activity 1.1) is required to understand what kind of tools are being used at the SME involved and for what AARRR categories these tools are being used. See Appendix A for further details for creating the GH tools overview as seen in Table 1. For a list of examples of GH tools, please see Appendix D.

Simultaneously, an overview of AARRR categories and their respective statistics from the SME can be created (activity 1.2). Each AARRR category can have multiple GH indicators and a respective indicator value, which are the User Statuses and its conversion statistic as seen in Table 2, furthermore, this table show numerous examples of GH indicators. Having created both overviews, an analysis can be made on these two overviews. The outcome of this analysis is a decision on which AARRR categories to focus on. When no decision can be made, the SME is advised to halt their activities on implementing the situational Growth Hacking method and start further analysing their created overviews from phase one. If the decision is deemed positive, and AARRR categories to focus on a selected, the modellers can proceed with the next phase.



### 4.3 Design

Having finished the diagnose part in the previous phase, the next phase, '*Design a custom solution*', can be initiated. Figure 4 shows the corresponding PDD where a more details overview is given. The output from phase 1, a decision on which AARRR categories to focus on, server as input for the start of phase 2.

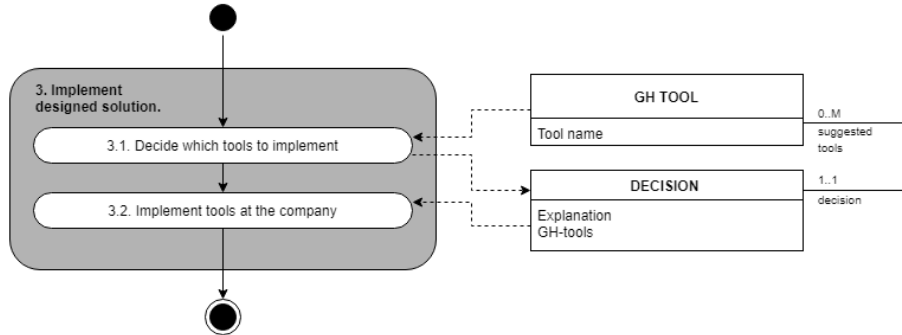


**Fig. 4.** Details of the design phase.

With the help of the decision from the previous phase, this information can be used as input for our recommendation system (activity 2.2). Together with the AARRR categories to focus on, several filters can be applied to further narrow the search of the recommendation systems. In chapter 5, we further detail the recommendation system. When each input parameter is set for the recommendation system, a list of GH tools can be suggested (activity 2.2). Having a list of suggested GH tools, the modellers can further progress in the situational Growth Hacking method by starting with the next phase.

### 4.4 Implement

Phase 3, '*Implement designed solution*', can be started once the previous phase is completed and resulted in a list of suggested GH tools to use. This list of GH tools serves as input for this phase. Figure 5 depicts the detailed activities of this phase. With the list of suggested GH tools, the modellers and SME can decide on which tools to implement (activity 3.1). Having used multiple filters in the recommendation system in the previous phase, a list of GH tools that only apply to the case of the SME should be created by the recommendation system.



**Fig. 5.** Details of the implementation phase.

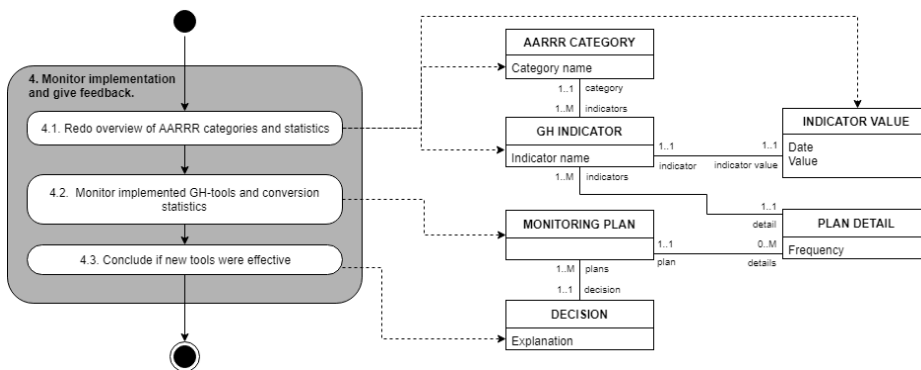
The decisions that need to be made are therefore only one of the followings:

- Which tool to use if there are multiple tools recommended which have the same function.
- Which tool to use if there are more tools recommended than the total budget of the SME in case can cover.

Once a decision is made, the tools can be implemented at the SME (activity 3.2). When the tools are implemented, phase 3 is completed and the modellers can start with the fourth, and final, phase

#### 4.5 Monitor

When the first three phases are completed, and the suggested GH tools are implemented at the SME, we can proceed to the last phase: *'Monitor implementation and give feedback'*. Figure 6 show the PDD that depicts the detailed activities of this last phase.



**Fig. 6.** Details of the monitoring phase

To start monitoring the effectiveness of the suggested tools, starting data on the conversion metrics is needed, as seen in table 2 (activity 4.1). Depending on the speed of finishing the previous three phases, a choice needs to be made: do we use the conversion metrics created during phase 1, or do we measure these metrics again. When the previous three steps are finished quickly, new measurements are not necessary but for the sake of having our monitoring results as reliable as possible, we suggest redoing these conversion metrics. Having redone the conversion metrics, the actual monitoring can be initiated (activity 4.2). Depending on metrics that need to be measured, a monitoring plan is initiated, where according to a to be determined frequency, the metrics are measured to see possible changes in these metrics. When the monitoring plan comes to an end, a decision is to be made on how effective the implemented tools were (activity 4.3). When the outcome of the decision is positive, the situational Growth Hacking method comes to an end. If the outcome is negative, the results can be analysed to further improve the recommendation system. With the output of this phase, a self-learning recommendation system can be created.

In the next chapter we go into further detail on the recommendation system and analyse the effectiveness of the proposed situational recommendation system.

## **5 Applying the solution**

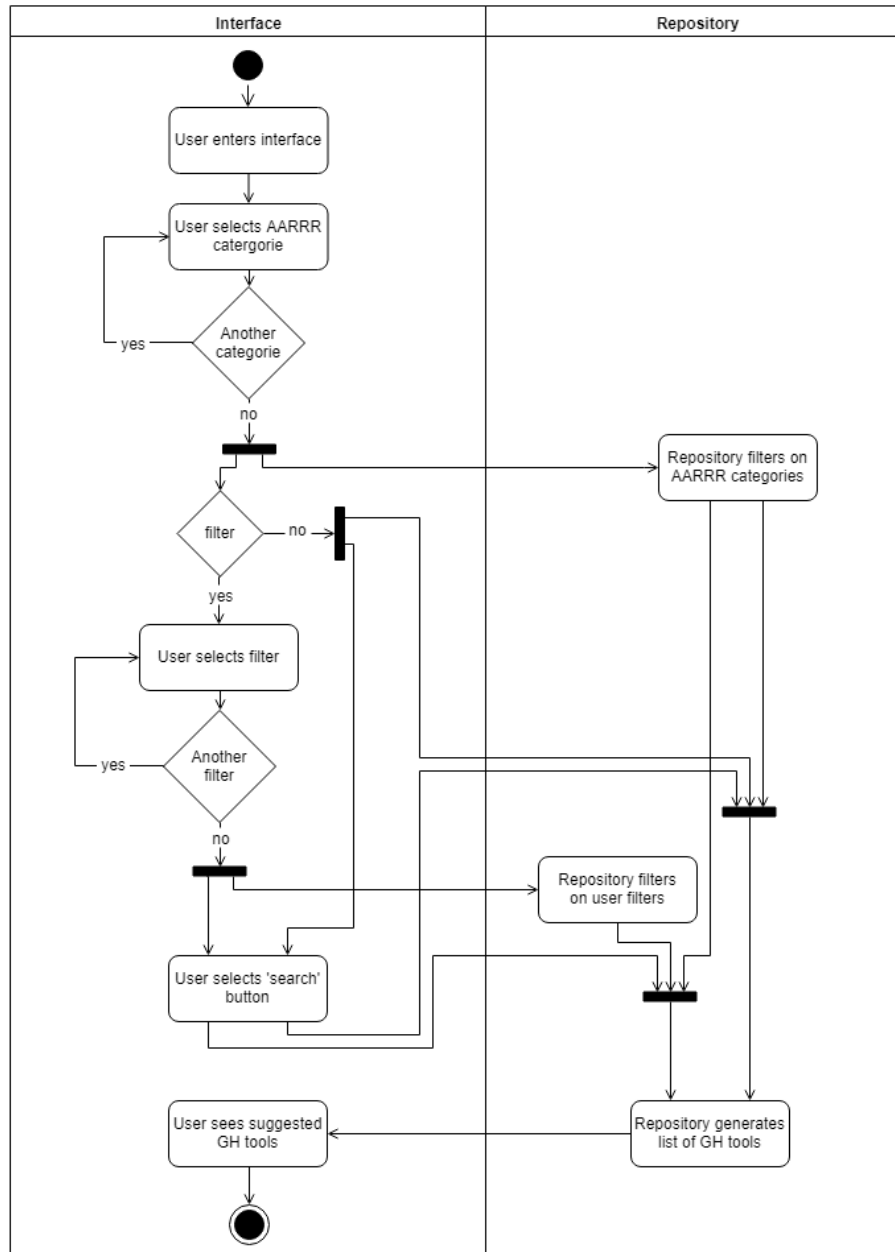
In this chapter, an early version of the recommendation system is introduced, as part of the situational Growth Hacking method, proposed in the previous chapter. Please note, that the repository proposed in this paper is a theoretical model and further research needs to be done to create a fully functional practical model that is suitable for real-life use. Moreover, a validation of the proposed situational Growth Hacking method is made by interviewing experts to gather feedback so further improvements can be made.

### **5.1 Recommendation system**

The recommendation system consists of a repository that holds the information of the GH tools collected in Appendix D and further provides an interface for modellers and SMEs. The model for the recommendation system is created using the UML Activity Diagram method and is shown in Figure 7. As shown in Figure 7, the user begins by entering the interface of the recommendation system. This could be done by logging in to a website, or an installed application on a computer. An early mock-up of the recommendation system interface can be seen in Figure 8.

Once entered, the user begins by selecting the AARRR categories that were chosen at the end of the diagnose phase (Figure 3). After the selection, the repository will pre-filter the database to quickly show results, once the user clicks the search button. Next, the user can filter the selection by filtering on the categories as seen in Appendix D. Note that the user is able to use no filters and can see every suggested GH tool, from the selected AARRR categories, once the search button is clicked. If the user chooses to apply filters, the repository filters the database according to the selected filters, once

no more filters are applied. The last step, for the user, is to select the search button. This results in a list of suggested GH tools which ends the design phase.



**Fig. 7.** Activity diagram of recommendation system

Recommendation system

**Select your AARRR categories**  
\* multiple categories can be selected

ACQUISITION     RETENTION     REFERRAL

ACTIVATION     REVENUE

**Choose your filters**  
\* multiple, or zero, filters can be selected

Business objective  
For-profit ▾

Pricing  
Free ▾

Location of servers  
Netherlands ▾

Location of company  
No preference ▾

Search

Name	AARRR category	Description	Server location	Company location	
Mailchimp	ACQUISITION	"Provides marketing automation for e-commerce businesses."	U.S.A.	U.S.A.	<a href="#" style="background-color: #007bff; color: white; padding: 2px 5px; border-radius: 3px;">More info</a>
ProsperWorks	ACQUISITION	"Easy-to-use CRM designed to help every salesperson excel at their job."	U.S.A.	U.S.A.	<a href="#" style="background-color: #007bff; color: white; padding: 2px 5px; border-radius: 3px;">More info</a>
Amplitude	ACQUISITION REFERRAL	"Whether you want to understand how users are navigating through your application, which features engage them the most, or how..."	U.S.A.	U.S.A.	<a href="#" style="background-color: #007bff; color: white; padding: 2px 5px; border-radius: 3px;">More info</a>

**Fig. 8.** Mock-up of recommendation system interface

## 5.2 Applying & collecting

In this step, an expert assessment was taken to get feedback on the proposed situational Growth Hacking method. The assessment was taken with the Head of Support & Operations (Expert 1) of Goboony due to his affinity with Growth Hacking since the start of his employment. During this assessment, useful feedback was gathered. Expert 1 noted that, while the proposed method could be very useful for SMEs, a number of problems could arise. First, the exact definition of Growth Hacking tools was rather vague in general and argued that SMEs could have trouble with naming their GH tools, as required in the diagnose phase of the situational Growth Hacking method. A possible solution could be a more rigorous definition of a Growth Hacking tool or a research on the option of using all possible tools for this method. Second, Expert 1 questions the way of interpreting the results of the monitoring phase because he states that improving one conversion statistic could impact other statistics in a positive way also. He suggests that, if resources are an issue for a company, focusing on the right conversion statistic could affect the whole conversion funnel. Also, Expert 1 stated that it could be difficult for small companies to have enough data to collect useful insights on their conversion statistics. If the amount of data is too small, no reliable conclusions can be made. Therefore, Expert 1 suggested a research to gain insights in the minimum amount of data, the number of visitors for example, needed for making conclusions in our situational Growth Hacking method. He further stated that, when enough data is in existence, specific targets should be set on the conversion statistics that need to be improved. Currently, an increase larger than zero is deemed successful, however, Expert 1 states that each company can have different targets in mind and that increased conversion statistics

are not per se a success if the amount of effort is much larger than the increased statistics in return. With respect to the recommendation system, Expert 1 notes that not only tools could be implemented in a company, but methods also. Therefore, methods could be incorporated into the recommendation system. Also, as pointed out by Expert 1, not all tools are technically able to be implemented into each system of any given SME. Therefore, system requirements are suggested to be included into the overview of each GH tool of the recommendation system.

## 6 Discussion

Relative to the number of GH tools presented in the Growth Tribe videos, a small number of GH tools were categorised for the proposed recommendation system, due to the limited time scope. This limited time scope also resulted in a small validation task with only one step where an assessment was taken with one expert. More assessments are needed to counter the possible bias of a single person and gaining better insight of the usefulness of the method. A second step, where gathering actual statistics from the implementation, should be implemented to get further improvement to the validation task. Moreover, the recommendation system itself is currently in an early phase and should be further developed to create a fully working system. Also, the categorization of the GH tools should be further expanded and in combination with a larger set of categorised GH tools and methods, an improved situational Growth Hacking method is possible. Moreover, further research needs to be done on the current proposed situational GH method, as a whole. By testing implementations of the method at multiple SMEs, a more defined conclusion should be possible on the overall effectiveness of the method. Finally, as concluded during the expert assessments, more insight is needed regarding the interpretation of the collected data and how the initial data should be collected in the first place.

## 7 Conclusion

The main research objective of this paper is to contribute a situational Growth Hacking method which tries to improve the effectiveness and efficiency of Growth Hacking at SMEs. To achieve this objective, four research questions (RQ) were devised. The Problem Investigation task, treated in chapter 3, focused on answering RQ1 (*‘How can we measure effectiveness of the GH tools used at SMEs?’*). Chapter 3 introduced a method to measure the effectiveness of GH tools currently used at SMEs by combining conversions metrics per AARRR category and the GH tools used at the company, thus answering RQ1. During the Treatment Design task, in chapter 4, research question RQ2 (*‘What GH tools are currently available?’*) and RQ3 (*‘How can a situational GH method be proposed in a way that it is versatile yet affordable for SMEs?’*) were answered. RQ 2 is answered with a proposed method to categorize GH tools, together with a list of categorized tools, as seen in Appendix D. With this categorization, quick filtering is possible when using the recommendation system and new tools can be added. This recommendation system is part of a larger situational Growth Hacking

method, proposed in chapter 4. The situational Growth Hacking method is created with the help of the PDD technique and created a way to implement GH in SMEs, thus answering RQ3. Finally, with the Treatment Validation task, RQ4 (*‘What are the benefits and drawbacks of the contributed situational GH recommendation system?’*) is answered by concluded that the proposed situational Growth Hacking method is a promising idea, but further research should be done to fully create a useful method ready for practical use.

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## 9 Appendices

### 9.1 Appendix A – Interview template

The interview, which is needed to create an overview of the current Growth Hacking tools used by Goboony has been done according to the following steps:

1. Explain interviewee the reason for this interview: create a better understanding on the current use of Growth Hacking tools within the company.
2. Let them know that this information is used for a research paper, but that information gathered from this interview can be blocked from public viewing. Also state that this interview is recorded for reference.
3. Give interviewee an introduction to the AARRR model, created by Dave McClure.
4. Create a list of current tools used at the company by asking what steps a customer takes and what kind of tools are used to support these steps.
5. While going through each tool, asses with interviewee to which category, or categories, it belongs and place it in the model.

### 9.2 Appendix B – Google Scholar literature study method

As with any other research paper, older research papers are needed to build upon and to be used for reference. In this respect, this research paper is as any other. To gain further understanding on Growth Hacking and creating a recommendation system for it, Google Scholar was used to find research papers [1]. Using the search term “growth hacking” with quotation marks, and excluding quotes and patents, dozens of pages were quickly found of which a significant part were in, for us, unreadable languages. Therefore, the search was narrowed down by filtering only on English papers which provided 18 pages of results. Going through the first 5 pages of results where “growth hacking” was not exactly in the title, it could be concluded that these kinds of papers were not suitable. The main reason for this was, that Google Scholar also searches within the text, not only on title. Therefore, the final search term for Google Scholar was “growth hacking” with quotation marks and excluding quotes and patents where the search term should be in the title of the article and where the article is in English. This search format resulted in two pages of articles, confirming our initial thoughts that research on Growth Hacking is limited thus further justifying this paper. The two pages with results were used as a starting point on finding information on Growth Hacking for some parts in this research paper [2].

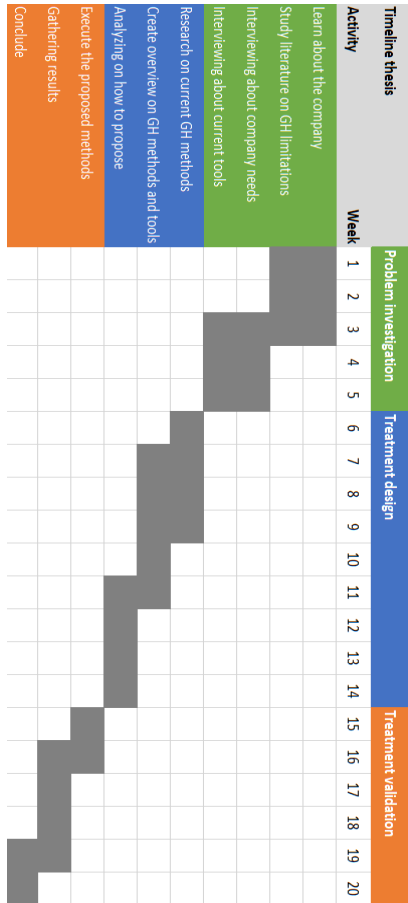
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<sup>1</sup> [https://scholar-google-nl.proxy.library.uu.nl/schhp?hl=nl&as\\_sdt=0,5](https://scholar-google-nl.proxy.library.uu.nl/schhp?hl=nl&as_sdt=0,5)

<sup>2</sup> [https://scholar-google-nl.proxy.library.uu.nl/scholar?start=0&q=allesintitel:+%22growth+hacking%22&hl=nl&as\\_sdt=0,5&as\\_vis=1](https://scholar-google-nl.proxy.library.uu.nl/scholar?start=0&q=allesintitel:+%22growth+hacking%22&hl=nl&as_sdt=0,5&as_vis=1)



### 9.3 Appendix C – Gantt chart on research method



#### 9.4 Appendix D – Structure and overview of GH tools

To create a situational Growth Hacking method, which can be applied to SME's, the GH tools need to be categorised. When categorised, a selection can be made by providing a set of parameters as input and provide a list of GH tools as output. GH tools mentioned in this paper are categorized as follow:

##### 1. ID

Identifier to quickly and uniquely identify tool when using a repository.

##### 2. Tool

Name tool.

##### 3. Web link

Website URL of organisation of the tool.

##### 4. Pricing

free

subscription, per month. Unless stated otherwise. (< \$25 | \$25 <> \$50 | > \$50)

1-time purchase (< \$100 | \$100 <> \$500 | > \$500)

Usage based

On request

##### 5. Description

Describe the main functionality and the purpose of this tool.

##### 6. Organization

Name Organization.

##### 7. Organizational Goal

Profit or non-profit.

##### 8. AARRR category

acquisition, activation, retention, revenue, referral.

##### 9. Location of servers

Geographic location of servers. Due to privacy regulation, by some countries or by companies, the location of where data is stored needs to be known.

##### 10. Location of company

Geographic locations of company. Some companies prefer companies with local offices.

List of GH tools categorized according to the aforementioned categorization:

1. 0001	2. Mailchimp
3. <a href="https://mailchimp.com">https://mailchimp.com</a>	
4. free, subscription (\$25 <> \$50   > \$50)	
5. Provides marketing automation for e-commerce businesses.	
6. Rocket Science Group	
7. for profit	
8. acquisition, activation, retention, revenue, referral	
9. United States	
10. United States	

1. 0002	2. ProsperWorks
3. <a href="https://www.prosperworks.com">https://www.prosperworks.com</a>	
4. subscription (< \$25   \$25 <> \$50   > \$50)	
5. Easy-to-use CRM designed to help every salesperson excel at their job.	
6. ProsperWorks	
7. for profit	
8. acquisition, activation, revenue	
9. United States	
10. United States	

1. 0003	2. Zapier
3. <a href="https://zapier.com">https://zapier.com</a>	
4. free, subscription (\$25 <> \$50   > \$50)	
5. Connect the apps you use every day to automate your work and be more productive. 1000+ apps and easy integrations, get started in minutes.	
6. Zapier Inc.	
7. for profit	
8. acquisition, activation, retention	
9. United States	
10. United States	

1. 0004	2. Typeform
3. <a href="https://www.typeform.com">https://www.typeform.com</a>	
4. free, subscription (\$25 <> \$50   > \$50)	
5. Build conversational forms, surveys, quizzes, landing pages, and more. Typeforms are easy to make and refreshing to take.	
6. Typeform	
7. for profit	
8. acquisition, retention	
9. United States	
10. Spain	

1. 0005	2. Google Analytics
3. <a href="https://analytics.google.com">https://analytics.google.com</a>	
4. free, on request	
5. Google Analytics Solutions offer free and enterprise analytics tools to measure website, app, digital and offline data to gain customer insights.	
6. Google	
7. for profit	
8. acquisition	
9. Worldwide, including Netherlands	
9. Worldwide, including Netherlands	

1. 0006	2. Google Tag Manager
3. <a href="https://tagmanager.google.com">https://tagmanager.google.com</a>	
4. free, on request	
5. Google Tag Manager helps make tag management simple, easy and reliable by allowing marketers and webmasters to deploy website tags all in one place.	
6. Google	
7. for profit	
8. acquisition, activation, retention, revenue	

<b>9.</b> Worldwide, including Netherlands
<b>10.</b> Worldwide, including Netherlands

<b>1. 0007</b>	<b>2. Hotjar</b>
<b>3.</b> <a href="https://www.hotjar.com">https://www.hotjar.com</a>	
<b>4.</b> subscription (> \$50)	
<b>5.</b> See how visitors are really using your website, collect user feedback and turn more visitors into customers.	
<b>6.</b> Hotjar Ltd.	
<b>7.</b> for profit	
<b>8.</b> acquisition, activation, retention, revenue	
<b>9.</b> Ireland	
<b>10.</b> Malta	

<b>1. 0008</b>	<b>2. Facebook</b>
<b>3.</b> <a href="https://www.facebook.com">https://www.facebook.com</a>	
<b>4.</b> free	
<b>5.</b> Connect with friends, family and other people you know. Share photos and videos, send messages and get updates.	
<b>6.</b> Facebook, Inc.	
<b>7.</b> for profit	
<b>8.</b> acquisition, activation, retention, revenue, referral	
<b>9.</b> Worldwide, including Ireland	
<b>10.</b> Worldwide, including Netherlands	

<b>1. 0009</b>	<b>2. Sentient ASCEND</b>
<b>3.</b> <a href="https://www.ascend.ai/">https://www.ascend.ai/</a>	
<b>4.</b> On request	

<b>5.</b> Sentient Ascend's artificial intelligence gives you the power to try out more ideas in less time and requires less traffic than traditional A/B and multivariate testing.
<b>6.</b> Sentient Technologies Holdings Limited.
<b>7.</b> for profit
<b>8.</b> acquisition, activation, retention, revenue, referral
<b>9.</b> Worldwide
<b>10.</b> United States, Hong Kong, Netherlands and South-Korea.

<b>1. 0010</b>	<b>2. Gmass</b>
<b>3.</b> <a href="http://www.gmass.co/">http://www.gmass.co/</a>	
<b>4.</b> subscription (< \$25   \$25 <> \$50   > \$50)	
<b>5.</b> Send mass email campaigns inside Gmail and Inbox.	
<b>6.</b> Wordzen, Inc.	
<b>7.</b> for profit	
<b>8.</b> acquisition, retention, referral	
<b>9.</b> United States	
<b>10.</b> United States	

<b>1. 0011</b>	<b>2. Adparlor Ad Mockup Generator</b>
<b>3.</b> <a href="https://adparlor.com/ad-mockups/">https://adparlor.com/ad-mockups/</a>	
<b>4.</b> free	
<b>5.</b> Create free Ad Mockups for Facebook, Instagram, Twitter, and Pinterest	
<b>6.</b> AdParlor	
<b>7.</b> for profit	
<b>8.</b> acquisition	
<b>9.</b> N/A	
<b>10.</b> United States, Canada, Singapore, India, Malaysia, South-Korea, Philip-pines.	

1. 0012	2. Amplitude
3. <a href="https://amplitude.com/">https://amplitude.com/</a>	
4. free, on request	
5. Whether you want to understand how users are navigating through your application, which features engage them the most, or how to improve long-term user retention, Amplitude helps you answer questions critical to your product development strategy.	
6. Amplitude	
7. for profit	
8. acquisition, activation, retention, revenue, referral	
9. United States	
10. United States	

1. 0013	2. LinkMiner
3. <a href="http://pointblankseo.com/linkminer">http://pointblankseo.com/linkminer</a>	
4. free	
5. LinkMiner takes broken link checking to the next level. You can now find out more about the links you're checking so you can make smarter decisions, quicker.	
6. Point Blank SEO	
7. non-profit	
8. acquisition	
9. United States	
10. United States	

1. 0014	2. dexi.io
3. <a href="https://dexi.io/">https://dexi.io/</a>	
4. subscription (> \$50)	
5. provides the leading Data Extraction and Data Automation Software. Our Web Scraping, interaction, monitoring and process software delivers rapid data insights leading to better decisions and business performance.	

<b>6.</b> Dexi ApS
<b>7.</b> for profit
<b>8.</b> acquisition
<b>9.</b> N/A
<b>10.</b> United Kingdom, Denmark

<b>1. 0015</b>	<b>2. Flow XO</b>
<b>3.</b> <a href="https://flowxo.com">https://flowxo.com</a>	
<b>4.</b> free, subscription (< \$25   \$25 <> \$50   > \$50)	
<b>5.</b> Smart chatbots made simple.	
<b>6.</b> FLG Software Limited.	
<b>7.</b> for profit	
<b>8.</b> acquisition, activation, revenue, referral, retention	
<b>9.</b> N/A	
<b>10.</b> United Kingdom	

<b>1. 0016</b>	<b>2. FOMO</b>
<b>3.</b> <a href="https://www.usefomo.com">https://www.usefomo.com</a>	
<b>4.</b> subscription (\$25 <> \$50   > \$50)	
<b>5.</b> increase sales & conversions by showing off customer interactions.	
<b>6.</b> FOMO	
<b>7.</b> for profit	
<b>8.</b> activation, revenue	
<b>9.</b> N/A	
<b>10.</b> United States, Canada, Germany, Slovenia, Japan.	

<b>1. 0017</b>	<b>2. Crayon</b>
<b>3.</b> <a href="https://www.crayon.co">https://www.crayon.co</a>	
<b>4.</b> free, on request	



<b>5.</b> Track, analyze, and act on everything happening outside of the four walls of your business.
<b>6.</b> Crayon
<b>7.</b> for profit
<b>8.</b> acquisition, activation, revenue, referral, retention
<b>9.</b> United States
<b>10.</b> United States

<b>1. 0018</b>	<b>2. Lumen5</b>
<b>3.</b> <a href="https://lumen5.com">https://lumen5.com</a>	
<b>4.</b> free, subscription (\$25 <> \$50   > \$50)	
<b>5.</b> Automated video creation with A.I. Enter a blog post or rss feed and the Lumen5 artificial intelligence system will help you summarize the content and match each scene with relevant videos, photos, and music.	
<b>6.</b> Lumen5	
<b>7.</b> for profit	
<b>8.</b> acquisition, retention	
<b>9.</b> N/A	
<b>10.</b> Canada	

<b>1. 0019</b>	<b>2. TubeBuddy</b>
<b>3.</b> <a href="https://www.tubebuddy.com">https://www.tubebuddy.com</a>	
<b>4.</b> free	
<b>5.</b> TubeBuddy is a free browser extension that integrates directly into YouTube to help you run your channel with ease.	
<b>6.</b> Geronimo Systems, LLC.	
<b>7.</b> for profit	
<b>8.</b> activation, revenue, referral, retention	
<b>9.</b> United States	
<b>10.</b> United States	

1. 0020	2. Acticoolo
3. <a href="http://articoolo.com">http://articoolo.com</a>	
4.	
5. Acticoolo make article writing simple. Our technology creates unique, proofread high-quality content from scratch simulating a real human writer.	
6.	
7. for profit	
9. retention	
10.	
11. Israel	

1. 0021	2. Attribution App
3. <a href="https://attributionapp.com">https://attributionapp.com</a>	
4. free, subscription (\$25 <> \$50   > \$50)	
5. See a snapshot of your campaigns, cost and ROI in one dashboard.	
6. Attribution Inc.	
7. for profit	
9. acquisition, revenue	
10. N/A	
11. United States	

1. 0022	2. Grouply
3. <a href="https://grouply.io">https://grouply.io</a>	
4. free, subscription (< \$25) (\$97 per year)	
5. The Facebook Group Member Extractor. With Grouply you can find new B2B Leads within Facebook Groups – fast and easy.	
6. Aravik AB.	
7. for profit	
8. acquisition	

<b>9.</b> N/A
<b>10.</b> Sweden

<b>1. 0023</b>	<b>2. Revealbot</b>
<b>3.</b> <a href="https://revealbot.com">https://revealbot.com</a>	
<b>4.</b> subscription (\$25 <> \$50   > \$50)	
<b>5.</b> Automate your Facebook Ads and manage your campaigns. Get alerts and reports for all your marketing tools to Slack.	
<b>6.</b> Reveal	
<b>7.</b> for profit	
<b>8.</b> acquisition, referral, retention	
<b>9.</b> United States	
<b>10.</b> United States	

<b>1. 0024</b>	<b>2. Google Data Studio</b>
<b>3.</b> <a href="https://datastudio.google.com">https://datastudio.google.com</a>	
<b>4.</b> free	
<b>5.</b> Data Studio turns your data into informative reports and dashboards that are easy to read, easy to share, and fully customizable.	
<b>6.</b> Google	
<b>7.</b> for profit	
<b>8.</b> revenue	
<b>9.</b> Worldwide, including Netherlands	
<b>10.</b> Worldwide, including Netherlands	

<b>1. 0025</b>	<b>2. AdScale</b>
<b>3.</b> <a href="https://eu.adscale.com">https://eu.adscale.com</a>	
<b>4.</b> on request	
<b>5.</b> AdScale is a powerful platform helping advertisers & agencies to easily boost advertising performance & reduce workload.	

<b>6.</b> AdScale
<b>7.</b> for profit
<b>8.</b> acquisition, revenue
<b>9.</b> N/A
<b>10.</b> Netherlands, United States, United Kingdom, Israel.