

Magento issues

**Which problems did the old
Magento-based B2C-webshop face and
how can I avoid them?**

Root cause analysis / Expert interview

Date	:	05-04-2024
Version	:	1.2
Status	:	Definitive
Author	:	Luc Swinkels

Version history

Version	Date	Author(s)	Amendments	Status
0.1	07-03-2024	Luc Swinkels	First draft	Draft
1.0	07-03-2024	Luc Swinkels	First definitive version	Definitive
1.1	15-03-2024	Luc Swinkels	Added expert interviews	Definitive
1.2	05-04-2024	Luc Swinkels	Added final expert interview and conclusion	Definitive

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Context

The goal of this research is to answer the following research question:

"Which problems did the old Magento-based B2C-webshop face and how can I avoid them?"

Answering this question will help me avoid pitfalls and bad practices, which will help me maintain a more efficient project strategy.

To do this, I will be using the expert interview and root cause analysis methods.

Methods

Root cause analysis

I will be performing a root cause analysis (*Vogel*, n.d.-a) to determine the most important causes of these issues. Since a big part of the root cause analysis is to not have any previous biases towards what could be the root cause, I wanted to conduct this analysis before doing the expert interview. For the methodology of this root cause analysis, I followed the 5 step analysis by MindTools (*MindTools / Home*, n.d.).

Expert interview

I will also be conducting an expert interview (*Vogel*, n.d.-b) with 3 developers who worked on the previous Masita B2C shop.

- Bruno Delsing, app developer
- Ryan Smith, front-end developer
- Thijs Kuipers, back-end developer

This can help me figure out possible issues I could face from first-hand experience that I did not think of.

Results

Root cause analysis

1: Define the problem

What do I see happening?

An online e-commerce platform (webshop made with the Magento framework) that is malfunctioning due to poor technical stability.

What are the specific symptoms?

Plugins malfunctioning, slow website loading, lack of freedom of development.

2: Collect data

What proof do you have that the problem exists?

My colleagues who directly worked on building the webshop have identified the problem. Masita has also identified the problem and has since asked Moonly to redevelop the shop. The website can be visited online at masita.com but you will quickly find it to be non-operational:



Masita.com - 08/04/2024

How long has the problem existed?

The problem has existed since the end of 2022. That was the last time the website was properly updated. While there is a new B2B store already in development, there hasn't been a functional B2B or B2C store for Masita since then.

What is the impact of the problem?

Ultimately, Masita chose to cease operations for the B2C webshop. Although this was also due to an ownership change and bankruptcy in 2023, if the webshop was still functioning properly, the new owner could have kept these operations running.

3: Identify possible causal factors

What sequence of events leads to the problem?

Masita rushed developers to create custom extensions for their Magento webshop, ignoring advice to allow more time for proper development. Opting for quick workarounds, the webshop encountered issues such as plugin malfunctions and slow loading times. These problems contributed to Masita's bankruptcy.

What conditions allow the problem to occur?

- Pressure to meet tight deadlines without considering the complexity of the required custom extensions.
- Lack of communication and understanding between Masita and the developers regarding the feasibility and time required for proper development.
- Insufficient research and planning before starting development, leading to unrealistic expectations and technical difficulties.
- Reliance on quick workarounds rather than investing in proper development processes.

What other problems surround the occurrence of the central problem?

- Loss of customer trust and satisfaction due to a malfunctioning website, potentially leading to a decrease in sales and revenue.
- Damage to Masita's reputation as a reliable e-commerce platform, which can impact its future business prospects and partnerships.
- Increased financial strain from the costs associated with redeveloping the webshop and potential legal implications from unresolved technical issues.
- Disruption of business operations and potential loss of competitive advantage in the market due to the inability to effectively conduct online sales.
- Strain on the relationship between Masita and its developers, as well as with other stakeholders, stemming from the failure to deliver a functional and stable webshop.

4: Identify the root cause

Why does the causal factor exist?

Unfortunately, no technology is suitable for everything. Lack of research before starting development meant that Masita had a bunch of requests that weren't suited for the chosen technologies.

What is the real reason the problem occurred?

A combination of custom development requests from Masita and the lack of development freedom in the Magento ecosystem meant some requests would either not be able to be developed, or in a manner where it would take too many resources and developer costs due to too many plugin dependencies.

5: What can I do to prevent this from happening again?

What can you do to prevent the problem from happening again?

By researching Masita's technical requirements and custom integrations beforehand, as well as properly documenting the requirements of the webshop, I can make sure what the right technology choice is to develop the new webshop by using future-proof, modern technologies that support all the requirements.

How will the solution be implemented?

By researching technologies and developing the new store with said technologies, the store will be developed based on a previously made priority indication of all the requirements. To make sure code quality is up to standard,

Who will be responsible for it?

As the lead developer and researcher of the new webshop, I will be responsible for the chosen technologies and implementation. These choices will be looked at by the product owner for this project, Robin Galema, who will likely also join development in the future.

What are the risks of implementing the solution?

If the chosen solution (in this case, chosen technology) ends up not being the correct choice, there is a risk of the same issues coming forward during or after development.

Expert interview

For the expert interview, I set up direct questions about possible causes and preventions.

Bruno (app developer)

- **If you could sum it up in 3 main issues, what do you think the 3 biggest issues with the Masita project were (either organisational or technical).**
 - The choice to build the webshop in Magento, in combination with Gencom, their ERP partner.
- **What do you think the main cause was of the Masita B2C shop's organisational issues?**
 - The collaboration with Gencom.
- **What do you think the main cause was of the Masita B2C shop's technical issues?**
 - The choice to build the webshop in Magento.
- **Do you remember a specific moment when more problems started arising? (e.g. when adding a dependency or when Masita had a specific request)**
 - From the start.
- **What would you do differently if you were able to do it again?**
 - Use a better ERP tool.
- **Which issues do you think could have been easily prevented, and how?**
 - I don't know.
- **Do you feel like the issues were more so caused by the organisation or by the technology used?**
 - The technological choices made by the organisation.
- **Do you think having more freedom of development (e.g. using a headless front-end based on React) would solve a lot of problems when it comes to the technical side of the project?**
 - This wouldn't directly fix the problem, however that doesn't make it a bad idea.

Thijs (back-end developer)

- **If you could sum it up in 3 main issues, what do you think the 3 biggest issues with the Masita project were (either organisational or technical).**
 - 1. Lack of Magento knowledge. Therefore we had to use a lot of (paid) plugins which most of the time didn't cover our exact needs.
 - 2. The usage of Gencom as the lead for product management.
 - 3. Masita didn't know what they exactly wanted in terms of functionalities, which caused a lot of development hours to be wasted on unused functionalities
- **What do you think the main cause was of the Masita B2C shop's organisational issues?**
 - Tasks weren't 100% clear, so a lot of time was spent to process given feedback.
- **What do you think the main cause was of the Masita B2C shop's technical issues?**
 - The daily synchronisation between Gencom and Magento would never succeed 100%. Either Gencom or Magento couldn't handle the thousands of requests made to synchronise all products.
- **Do you remember a specific moment when more problems started arising? (e.g. when adding a dependency or when Masita had a specific request)**
 - Not a specific moment, but basically every time a new plugin was installed it would cause some downtime.
- **What would you do differently if you were able to do it again?**
 - I wouldn't use Magento.
- **Which issues do you think could have been easily prevented, and how?**
 - It would have been better to let Magento manage the products/stock instead of Gencom. This way we could've used the Magento webhooks to synchronise data to Gencom everytime a product was added or changed, instead of synchronising all products every night the other way around.
- **Do you feel like the issues were more so caused by the organisation or by the technology used?**
 - Both, as the organisation forced us into the technologies used.
- **Do you think having more freedom of development (e.g. using a headless front-end based on React) would solve a lot of problems when it comes to the technical side of the project?**
 - It would have solved some problems on the front-end side, but it probably would've raised other problems. The speed would probably be an issue, as the Magento API is on the slower side. It would solve the weird caching issues on the front-end. Most of the time some products weren't visible on the front-end, even after clearing the server cache.

Ryan (front-end developer)

- **If you could sum it up in 3 main issues, what do you think the 3 biggest issues with the Masita project were (either organisational or technical).**
 - I think the biggest issue was that we had to make a lot of adjustments in the core Magento code to make it work with the requirements that Masita had. In combination with developers that are not familiar with Magento and limited amount of time. So we were constantly trying to quick fix problems with our limited knowlegde in a massive application that was not easy adjustable. So fixing 1 issue mostly lead to multiple new bugs that we couldn't fix.
 - Another issue was that Magento 2 was just released and still had some issues. So we had to fix them ourselves which led to other complications.
 - Another issue was that there was almost no issue reporting or dev docs to be found on the internet. So if you stumbled across a bug or error, it was very hard to find an answer on the internet. And if you wanted to develop a new function, it was unclear how to do it properly.
- **What do you think the main cause was of the Masita B2C shop's organisational issues?**
 - I have tried to hold off on the organisational side of the project. So I don't know exactly.
- **What do you think the main cause was of the Masita B2C shop's technical issues?**
 - I think the answer to the first question sums up the main cause on the technical side.
- **Do you remember a specific moment when more problems started arising? (e.g. when adding a dependency or when Masita had a specific request)**
 - It started after we set-up the basic theme and started discovering issues in both magento core functionality, as well as new functionality.
- **What would you do differently if you were able to do it again?**
 - I would either not use Magento anymore, but look into other e-commerce platforms. Maybe some sort of headless type? Or take a lot more time to get in depth knowledge of the system before starting to tangle with it.
- **Which issues do you think could have been easily prevented, and how?**
 - I think we couldn't in the current setup, really. It was probably better to start over and use another e-commerce platform that we were used to, or take more time in research before starting with a new e-commerce platform.
- **Do you feel like the issues were more so caused by the organisation or by the technology used?**
 - I think it's a combination of both, but as a developer I never felt comfortable with the technology used.
- **Do you think having more freedom of development (e.g. using a headless front-end based on React) would solve a lot of problems when it comes to the technical side of the project?**
 - I think this would save a lot of frustration. It still won't be easy but we at least have control over what we are doing.

Conclusion

When combining the results of the root cause analysis and the expert interview, I can conclude that the main causes of the previous Masita B2C shop are:

- Rushed development and ignored advice: Masita rushed developers to create custom extensions for their Magento webshop, ignoring advice to allow more time for proper development.
- Lack of communication and understanding: There was insufficient communication and understanding between Masita and the developers regarding the feasibility and time required for proper development.
- Insufficient research and planning: There was a lack of research and planning before starting development, leading to unrealistic expectations and technical difficulties.
- Reliance on quick workarounds: Masita opted for quick workarounds instead of investing in proper development processes, which contributed to plugin malfunctions and slow loading times.
- Lack of technology suitability: The chosen technology and ecosystem (Magento) were not suitable for all of Masita's requirements, leading to issues with custom development requests and dependencies on plugins.

Another big issue was the choice of ERP system. Since ERP system is not in the scope of my assignment, I will not be focusing on providing a better solution for this.

To prevent these from happening again, I will make sure to spend enough time researching and communicating, as that seems to be the main cause.

Sources

1. Vogel, J. (n.d.-a). ICT Research Methods — Methods Pack for research in ICT. ICT Research Methods. <https://ictresearchmethods.nl/workshop/root-cause-analysis/>
2. Vogel, J. (n.d.-b). ICT Research Methods — Methods Pack for research in ICT. ICT Research Methods. <https://ictresearchmethods.nl/library/expert-interview/>
3. MindTools | Home. (n.d.). <https://www.mindtools.com/ag6pkn9/root-cause-analysis>