Accelerating in a world of chaos

by using Enterprise Architecture with the concept Antifragility

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A thesis submitted in fulfilment of the requirements
for the degree of Master of Enterprise IT Architecture (MSc)

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”It is quite perplexing that those from whom we have benefited the most aren’t those who have tried to help us (say with ”advice”) but rather those who have actively tried - but eventually failed - to harm us.”
- Nassim Nicholas Taleb

”A consistency proof for [any] system can be carried out only by means of modes of inference that are not formalized in the system itself.”
- Kurt Gödel

”Reality is created by the mind.
We can change our reality by changing our mind.”
- Plato

”But he who neither thinks for himself nor learns from others, is a failure as a man.”
- Hesiod

”The only constant is change.”
- Heraclitus

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Keywords

agile, agility, resilient, resiliency, robust, robustness, antifragility, antifragile, enterprise architecture, it architecture, architecture governance, architecture principles, enterprise engineering

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Accelerating in a world of chaos

by using Enterprise Architecture with the concept Antifragility

J.R. Bliekendaal

Abstract

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Glossary of Terms

agile The ability to adjust before failure happens. 4

antifragile The ability to strive for and evolve under stress. 1, 2, 4, 17

antifragility The state of being antifragile. 3

fragile The quality of being easily broken or destroyed. 2, 4, 17

resilient The ability to recover from failure. 2, 4

robust The ability to resist failure. 2, 4

Abbreviations

EA Enterprise Architecture. 1–3

IoT Internet of Things. 2

ISV Independent Software Vendor. 1, 3

VUCA Volatility, Uncertainty, Complexity and Ambiguity. 1, 18

1. Introduction

Speed of change
Only constant is change

Volatility, Uncertainty, Complexity and Ambiguity (VUCA)
The challenge

In this thesis, the researcher defines how and with which Enterprise Architecture (EA) concepts EA can be used to steer an Independent Software Vendor (ISV) towards being antifragile in the Public Sector Market.

1.1. Context

The researcher is working as a Chief Architect for an ISV specialised in delivering software and services to the local governments in The Netherlands, such as the municipalities, the provinces, and the regional water authorities. The local governments embraced the digital transformation, and because of this the pace of change is increasing rapidly **(NEEDS REF)**.

1.2. Structure of the thesis

In chapter 1 the context of the research is set, the core concepts of EA and antifragility are introduced together with the contextual concepts of ISV and the Public Sector Market. In chapter 2 the theoretical background is given on the research. Chapter 3 explains the used methodology for the research.

1.3. Introduction of the Public Sector Market

1.4. Introduction of Indepenent Software Vendor

1.5. Introduction of the concept Enteprise Architecture

Enterprise Architecture (EA) is a discipline for proactively and holistically leading enterprise responses to disruptive forces by identifying and analysing the execution of change toward desired business vision and outcomes. EA delivers value by presenting business and IT leaders with signature-ready recommendations for adjusting policies and projects

to achieve targeted business outcomes that capitalise on relevant business disruptions (Gartner, n.d.).

White (2018) states that the organisation's business requirements guide EA — it helps layout how information, business and technology flow together. EA has become a priority for businesses trying to keep up with new technologies such as the cloud, Internet of Things (IoT), machine learning and other emerging trends that will prompt digital transformation.

1.6. Introduction of the concept of Antifragility

Taleb (2008) describes a black swan as an event that 1) is so rare that even the possibility that it might occur is unknown, 2) has a catastrophic impact when it does occur, and 3) is explained in hindsight as if it were actually predictable. For extremely rare events, Taleb argues that the standard tools of probability and prediction, such as the normal distribution, do not apply since they depend on large population and past sample sizes that are never available for rare events by definition. Extrapolating, using statistics based on observations of past events is not helpful for predicting black swans, and might even make us more vulnerable to them. In his book Antifragile, Taleb (2013) states that the way to survive a black swan event is to be antifragile.

Most people answer that the opposite of fragile is robust, resilient, solid, or something of the sort. However, the resilient, robust (and company) are items that neither break nor improve, so you would not need to write anything on them — have you ever seen a package with robust in thick green letters stamped on it? Logically, the exact opposite of a fragile parcel would be a package on which one has written, please mishandle or please handle carelessly. Its contents would not just be unbreakable but would benefit from shocks and a wide array of trauma (Taleb, 2013).

1.7. Problem statement

1.8. Research questions

1.8.1. Main research question

EA facilitates an organisation in assessing the impact of change and making recommendations for target states that support business objectives. EA guides an organisation in changing. EA can help organisations in changing into a state of antifragility. However, what are the success factors of enterprise architecture to accomplish antifragility?

What are, for an Independent Software Vendor, the success factors of Enterprise Architecture for antifragility in the public sector market?

1.8.2. Sub-questions

1. Sub-question 1

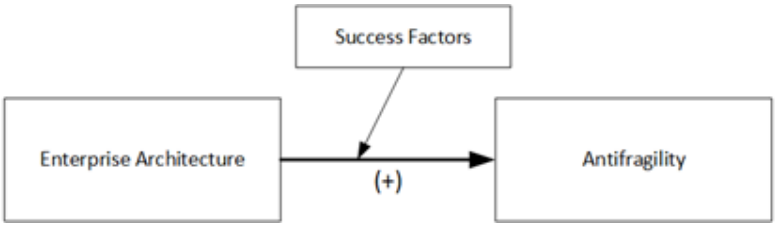

Figure 1.1.: Research Model

2. Sub-question 2

2. Theoretical background

2.1. What is a system?

2.2. Organisation

2.2.1. Independent Software Vendor

2.3. Antifragile

- Randomness
- Variability
- Hormesis / Mithridatisation (by taleb) / Antidotum Mithridatium

2.3.1. Relation between antifragile, fragile, robust, resilient, and agile

antifragile with fragile, robust, resilient, and agile.

2.4. VUCA

2.5. Enterprise Architecture

2.5.1. Steering mechanisms

2.6. Public Sector market

2.6.1. Differences with the Private Sector Market

2.7. What is a stressor?

3. Research Methodology

3.1. Research Model

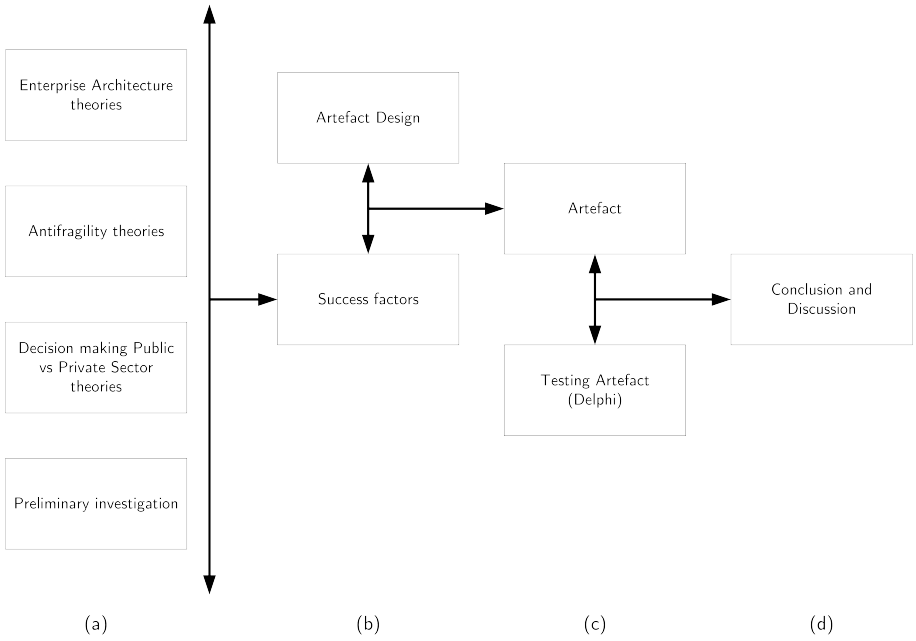

Figure 3.1.: Research Model

3.2. Delphi Group

For the Delphi Group participants see appendix B

What about the sample size? Normally Delphi is about 100+. What about this research. How large should the sample size be for a qualitative result?

3.3. Quality of the Research (old example text)

The research was qualitative. The information is based on qualitative information gathered by the researcher from employees of the organisation. However, with the research

approach and transparency, the research can be validated, can be repeated, so it is reliable and reducible. With the use of managerial models and methods like Lean, Value Stream Mapping with supporting tools like NEN-ISO/IEC 25011 and ServQual got a nonbiased result.

- **The validity** of the research is dependent on the right use of the right models and the right methods. The researcher conducted research on which models, frameworks and tools to use. The results and the rationales around the choice of theories, models, frameworks and tools are stated in chapter 4. The sources used for determining the theories, models, frameworks and tools are from scientific and expert sources.

- **The reliability** is about the influence of possible errors. For the research, the researcher used methods like triangulation, and sources from scientific reports and expert literature. The number of interviews was too small for the right statistical outcome. To enlarge the reliability of the interviews, the researcher used the same framework of themes for his semi-structured interviews. The transcriptions are placed in the appendixes for transparency. The information gathered with the interviewees is compared with the other interviewees.

- **The repeatability** is about getting the same results when the research is conducted again. The researcher uses his research design and research approach, as stated. All the steps taken are put into the research design. If this research design is followed, the same results should follow.

- **The reducibility** is about the outcome of the research can be deducted step by step. By using the research model, and the structure of the thesis, every step is reducible.

- Think about Replication

- Recker types

- OpenScience

- Howto falsify?

- Rigourness

Open Science Open Access For Replication and transparency.
Recker p16
Replicability
Falsification
Independence
Precision

The research is using the FAIR Principles[1]

- Findable
- Accesible
- Interoperable
- Reusable

3.4. Used infrastructure and tooling

For selecting the suitable instruments for the research, the Open Science Framework[2] is used. The Open Science Framework consists out of 4 stages in a research project. Those stages are: "Search and Discover, Design Study, Collect and Analyse, and Publish Reports." The Open Science Framework proposes specific infrastructure and tools per stage. The transparency in the used infrastructure and tools increases the quality of the research. It increases the replication factor, findability, accessibility, interoperability, and reusability.

3.4.1. Thesis creation

The student used his corporate laptop (Dell Latitude 7200 2-in-1[3]) with Windows 10 Professional installed for creating the thesis. The thesis is created with the markup language LaTeX[4]. The used typesetting environment is TexLive[5] with the document type of "Report" from KOMA-Script[6]. TexStudio[7] is the used LaTeX Editor. It supports syntax-highlighting, has an integrated viewer, reference checking and numerous wizards. For the creation and administration of references BibLaTeX[8] is used with the reference manager JabRef[9] with the citation style of APA 7th Edition[10] and with web browser integration. The files are stored on a personal Dropbox[11] that is used by GitHub Desktop[12] to synchronise with a public GitHub repository[13]. GitHub[14] is used for source control but

[1] https://www.go-fair.org/fair-principles/
[2] https://www.cos.io/products/osf
[3] https://www.dell.com/en-us/work/shop/dell-laptops-and-notebooks/latitude-7200-2-in-1-laptop/spd/latitude-12-7200-2-in-1-laptop
[4] https://www.latex-project.org/
[5] https://www.tug.org/texlive/
[6] https://ctan.org/pkg/koma-script
[7] https://www.texstudio.org/
[8] https://ctan.org/pkg/biblatex/
[9] https://www.jabref.org/
[10] https://apastyle.apa.org/
[11] https://www.dropbox.com/
[12] https://desktop.github.com/
[13] https://github.com/JRBliekendaal/master-thesis
[14] https://github.com/

also for reviewing and discussing the topics with the (Co-)Promotor and the planning of the master thesis project. The thesis source files are copied to an Amazon S3 Blob[1] for backup. The backup rotation is seven versions. Cloudberry Explorer Freeware for Amazon S3[2] is used for backup. Grammarly[3], with the paid subscription service, checks the thesis for spelling, grammar, style, and plagiarism. The used goals for Grammarly are audience=knowledgeable, formality=formal, and domain=academic. Microsoft Visio Professional[4] is used to create figures. The GitHub repository contains all the sources.

3.4.2. Research administration

The research administration, which includes documentation containing privacy-sensitive information, like the name and contact information of the Delphi Group participants, is stored on a non-public GitHub Repository[5]. The private GitHub Repository is also for staging thesis parts that still need to be anonymised. For taking notes Leuchtturm1917[6] Notebooks are used with mechanical pencils of Faber-Castell[7] and pens from Sakura[8] with long-lasting ink.

3.4.3. Research execution

For the execution of the research, Microsoft Excel[9] is used for the administration of the literature research. For the administration of the literature research, the following headers are used: ID (for a unique ID per item), search terms used, scope, title, subtitle, author(s), year, type, BibLaTeX citation key, title relevance, abstract relevance, content relevance, found at, doi/isbn, url, date found, duplicate, date used, use for, and notes. Researchgate[10], Web of Science[11], and Google Scholar[12] are the main sources for searching for literature. PaperPanda[13] is used for hard to find literature. The literature administration is, together with the publicly available literature, stored in the repository of the master thesis. For non-public available literature, the administration contains the location where the literature is retrievable. All the literature is added to a bibLaTeX file for future reference. For traceability the entries in the bibLaTeX file contain the Unique ID in the notes field. JabRef is used to sort the references by using subgroups to support the workflow. The subgroups used are: "evaluate, rejected, and used." Only the literature in the subgroup used are transferred to the bibliography file of the thesis. This prevents

[1] https://aws.amazon.com/s3/
[2] https://www.msp360.com/explorer/windows/amazon-s3.aspx
[3] https://www.grammarly.com
[4] https://www.microsoft.com/en-ww/microsoft-365/visio/
[5] https://github.com/JRBliekendaal/master-thesis-administration
[6] https://www.leuchtturm1917.us/notebook-classic.html
[7] https://www.fabercastell.com/products/tk-fine-vario-l-mechanical-pencil-10mm-135900
[8] https://www.sakuraofamerica.com/product/pigma-micron/
[9] https://www.microsoft.com/en-us/microsoft-365/excel
[10] https://www.researchgate.net/
[11] https://app.webofknowledge.com/
[12] https://scholar.google.com/
[13] https://paperpanda.app/

cluttering. For working as paperless as possible all the literature, where possible, is in pdf or in ebook format. For reading Acrobat Reader DC[1] is used for reading the PDF, and an Amazon Kindle Oasis[2] for eBooks. With the Amazon Kindle the highlight feature is used. This is not stored on GitHub since the highlights are under copyright of the author(s).

For the execution of the Delphi Method, Meetingwizard[3] is used for questionnaires and the analysis of the questionnaires. The license for using Meeting Wizard is supplied by the Antwerp Management School.

[1] https://get.adobe.com/reader/
[2] https://www.amazon.com/dp/B07L5GJD99
[3] https://www.meetingwizard.nl/

4. Conclusion

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5. Discussion

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5.1. Discussion on research

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5.2. Discussion on research quality

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6. Blocks of text that can be used

6.1. Validation through an artefact

Because there is not much known on the applicability of antifragile on Enterprise Architecture, the success factors need to be validated to be true. To validate, the researcher will create an artefact. The Delphi Research Method is used to validate the artefact. By validating the artefact, the researcher can ensure that the success factors are valid with some degree of certainty.

7. Chapter Template

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7.1. section title

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7.1.1. subsection title

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7.2. Building Blocks

7.2.1. table

What	When	Who	Why	How
X	1	1	2	3
Y	2	45	7	9
Z	0	0	1	7

Table 7.1.: Introduction Table

7.2.2. Picture

7.2.3. Glossary

```
\gls{antifragile}␣is␣not␣that␣\gls{fragile}\\
\Gls{antifragile}␣is␣not␣that␣\Gls{fragile}\\
```

Figure 7.1.: Placeholder

```
\gls{fragile} is not that \gls{antifragile}\\
\Gls{fragile} is not that \Gls{antifragile}\\
```

Gives:
antifragile is not that fragile
Antifragile is not that Fragile
fragile is not that antifragile
Fragile is not that Antifragile

7.2.4. Abbreviation

```
\acrfull{vuca}\\
\acrlong{vuca}\\
\acrshort{vuca}\\
```

Gives:
Volatility, Uncertainty, Complexity and Ambiguity (VUCA)
Volatility, Uncertainty, Complexity and Ambiguity
VUCA

7.2.5. Citing

```
\parencite{Bliek2017}
\parencite[p. 20]{Bliek2017}
\citeyear{Bliek2017}
\citeauthor{Bliek2017}
\parencite*{Bliek2017}
\textcite{Bliek2017}
\parencite{Doe2100,Bliek2017}
```

Gives:
(Bliekendaal, 2017)
(Bliekendaal, 2017, p. 20)
2017
Bliekendaal
(2017)
Bliekendaal (2017)
(Bliekendaal, 2017; Doe, 2100)

Bibliography

Bliekendaal, R. (2017). *The book without title.*

Doe, J. (2100). *The book without title.* Dummy Publisher.

Gartner. (n.d.). *Definition of enterprise architecture (EA) - gartner information technology glossary* [Gartner]. Retrieved April 5, 2021, from https://www.gartner.com/en/information-technology/glossary/enterprise-architecture-ea

Taleb, N. N. (2008). *The black swan.* Penguin Books Ltd (UK). https://www.amazon.com/Black-Swan-Impact-Highly-Improbable/dp/0141034599

Taleb, N. N. (2013). *Antifragile.* Penguin Books Ltd (UK). https://www.amazon.com/Antifragile-Things-That-Gain-Disorder/dp/0141038225

White, S. K. (2018). What is enterprise architecture? A framework for transformation. Retrieved August 4, 2021, from https://www.cio.com/article/3313657/what-is-enterprise-architecture-a-framework-for-transformation.html

Appendices

A. Interview Participants

Who	Role	From
Christiaan Konstapel	Lead Enterprise Architect	Mileway
Y	2	tbd
Y	2	tbd

Table A.1.: Interview Participants

B. Delphi Group Participants

Who	Role	From
Jan Ploeg	Enterprise Architect	Centric Netherlands B.V. (ISV)
Y	2	Other ISV
Y	2	Municipality
Y	2	VNG-Realisatie
Y	2	Logius
Z	0	Academic

Table B.1.: Delphi Group Participants

C. Literature Selection

D. Research Log

Date	What
24/11/20	Initial research subject proposal to AMS
25/11/20	Initial research subject proposal sent to Hans Mulder & Yuri Bobbert
30/11/20	First meeting with Hans Mulder to explore the subject
12/02/21	AMS Master Project Coaching
10/03/21	Second meeting with Hans Mulder. Definitive Area of Research selected. The success factors of EA for Business Agility/Resilience/antifragility
11/03/21	Elaborated with COO on antifragility
14/03/21	Started research on the concept of antifragility
03/04/21	One Pager on the concepts Enterprise Architecture, Public Sector, Independant Software Vendor, and Antifragility
04/04/21	Deskresearch on concepts
10/04/21	Reading Taleb
25/05/21	Third meeting with Hans Mulder
20/06/21	Creating 5 pager
20/06/21	Sent 5 pager presentation for review to Hans Mulder
20/06/21	Sent 5 pager presentation for review to Dieneke Schouten (COO) and Maarten Hillenaar (CEO)
20/06/21	Promotor suggestion Roland Ettema, Martin Op 't Land, Bas van Gils or Hans Mulder
20/06/21	Sugestion of Hans Mulder as promotor with Edzo Botjes as co-promotor
21/06/21	Requested Maarten Hillenaar as Sponsor, Dieneke Schouten as Second Reader, Jan Ploeg as participant in Delphi, Christiaan Konstapel as interviewee
24/06/21	Presentation of Five Pager at Master Project Coaching AMS
29/06/21	Created thesis LaTeX skeleton
06/07/21	Meeting with Edzo Botjes to get acquainted
06/07/21	Edzo Botjes accepted co-promotorship
date	what
date	what
date	what
enddate	final version