June 2023

Project Half Double

*Evaluation of Phase 3
and Consolidation of Phases 1, 2, and 3*

Acknowledgments

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Executive Summary

By Anna Le Gerstrøm Rode & Per Svejvig (Aarhus University)

In 2013, the initial steps were taken toward a decade-long journey of what would become Project Half Double (PHD). The journey developed into three phases – starting in 2015 and ending in 2023. Along the way, Half Double (HD) developed into a living ecosystem of interacting actors and artefacts – including the Half Double Institute (HDI), which officially owns the Half Double Methodology (HDM). This report looks back on the three phases of action design research that encompassed eight years of data collection and analysis in a longitudinal study, and makes the following overall conclusions:

Practices of the Half Double Methodology make a difference. An evaluation of nine HDM practices in 28 HD projects and 88 reference projects shows that all practices are used more in HD projects compared to reference projects. Moreover, the evaluation shows that eight practices are intensively used. Altogether, the HDM makes a difference in practice.

Success rates in projects applying the Half Double Methodology are relatively high. Out of 27 HD projects, 20 fulfilled all or most of their success criteria to a high degree, whereas two fulfilled none or a few to a low degree. This is a success rate of 74% and a failure rate of 7% for HD projects. Compared to other evaluations, these rates are relatively positive. Evaluations of the relative performance of HD projects compared to reference projects show that 40% and 48% of HD projects have a higher impact and speed. Hence, some HD projects are superior, and most HD projects are successful.

Local contexts and characteristics are relevant to the Half Double Methodology. An evaluation of contexts and characteristics for 28 HD projects shows that the HDM is implemented in a variety of projects and organizations. The HDM is implemented in small, medium, and large organizations across sectors and 12 industries. HD projects vary in complexity, scale, and size including small, medium, and large projects – costing up to 650 million DKK and involving almost 350,000 hours. Hence, the HDM is perceived as relevant in many contexts and across many characteristics.

Small- and medium-sized enterprises can benefit from the Half Double Methodology. The evaluations of the relative application of nine HDM practices in 10 HD projects showed that HD projects apply seven practices more and two practices less compared to 48 reference projects. Moreover, the evaluation shows that six practices are intensively used. Hence, most HDM practices are applicable, and altogether, HDM makes a difference in practice for small- and medium-sized enterprises (SMEs). Evaluation of 10 HD projects shows that nine fulfill all or most of their success criteria to a high degree, whereas one fulfills some to some degree. This is equivalent to a success rate of 90% and a failure rate of 0%. Hence, HD projects' success and failure rates in SMEs are positive – although more uncertain.

Diffusion of the Half Double Methodology is enabled and constrained. An evaluation of HDM diffusion processes shows 13 diffusion elements – both enabling and constraining HDM diffusion within and between projects and organizations. Hence, future possibilities for further diffusion and application of the HDM exist.

The future of HDM and HDI. The report concludes by suggesting 12 initiatives as important for the plausible futures of the HDI and the HDM.

1. Introduction

By Anna Le Gerstrøm Rode and Per Svejvig (Aarhus University)

The purpose of this report is to describe and present the evaluation of Project Half Double (PHD) as it reaches the end of Phase 3 in 2023 and consolidate across Phases 1, 2, and 3, which took place in the period 2015 to 2023.

The journey began informally a decade ago in May 2013 when a group of dedicated project practitioners wondered if and how they could develop a new and radically different project paradigm to create more successful projects. The formal part of PHD was initiated two years later in 2015 when the Danish Industry Foundation funded the project. This was also the moment that the project was named Half Double (HD) based on the arguments that it was a catchy name that was easy to remember and reflected the ambition to develop a Half Double Methodology (HDM) with the overall aim of delivering "Projects in half the time with double the impact," with projects in half the time understood as half the time to impact (benefit realization, effect is achieved) and not as half the time for project execution.

PHD has been ongoing over eight years, and it is interesting to evaluate different aspects of the project, not only the HDM itself but also the broader ecosystem with Half Double Institute (HDI) in the center. This is followed by evaluating HDM practices, the degree of success with HD projects, and characteristics of HD projects and then outlining the contexts for HD projects with the purpose of inspiring practitioners to use HDM with a reflective mindset. This is continued with a presentation of enablers and constrainers in the diffusion of HDM. There is also a reflection on the future of HDM and HDI with the aim of generating ideas and initiatives for what should or could happen after PHD phase 3.

This report has not been through an academic peer review process. Consequently, the work presented cannot be regarded as finished research results. Rather, what is presented is to be regarded as preliminary findings or preliminary results. The research methodology is presented in Appendix B and the research limitations in Appendix C. There is always a degree of uncertainty associated with research – especially when it is not peer reviewed. This is certainly also the case for the work presented in this report. Therefore, we strongly encourage the reader to carefully consider the limitations and to understand the research methodology applied in this study and report.

2. The Half Double Outline

By Anna Le Gerstrøm Rode (Aarhus University)

This is the final report of the third phase of Project Half Double (PHD). Like previous reports, this one also starts with a look back on how it all began a decade ago.

The aim of the chapter is to provide an overview of the totality of the Half Double (HD) phenomenon as well as necessary details on different elements and explanations of how they relate.

The chapter is structured in three main sections. The first presents a narrative of the HD journey. The second provides a summarizing overview of the different HD phases along with their ambitions and conclusions. The third portrays the HD ecosystem into which this longitudinal study has developed.

2.1 The Half Double Journey

It is now 10 years ago that an informal network of committed project practitioners at different levels in Denmark was gathered to discuss improvement opportunities for project management in the light of high failure rates of projects and with the ambition of finding a radically different way to lead projects more successfully. One of the participants from the early period described the initiative as a kind of "*hobby project where project fellows share ideas.*" A Scandinavian-based management consultancy company – Implement Consulting Group – took prime responsibility to continue the discussion. Gradually, the initiative matured and began to formalize during the spring of 2014. At that time, it was called "Project 2.0."

The initial work developed into a proposed solution to prevalent project management problems that was comprised ten pieces of advice called "The ten leading stars." The stars were discussed and developed at different workshops from February 2014 to January 2015. Workshop participants had a broad background within manufacturing, finance, insurance, information technology, public administration, management consultancy, universities, and the confederation of the Danish Industry. The early conception of the stars served as a good starting point for the project. However, as the stars were a mixture of principles, methods, concrete tools, and mind-setting statements, they were difficult to communicate and to implement systematically. This provided a motive to develop and conceptualize the proposed solution even further. To support the initiative, discussions with the Danish Industry Foundation, an independent philanthropic foundation, started in the fall of 2014.

In the spring of 2015, the discussions materialized in a grant from the Danish Industry Foundation, which supported the initiative with 13.8 million Danish kroner (1.9 million euros). In this contract, the initiative was named "Project Half Double" based on the argument that the name is catchy and reflects its high ambition. The first report stated that:

"The overall goal is to deliver 'projects in half the time with double the impact,' where projects in half the time should be understood as half the time to impact (benefit realization, effect is achieved) and not as half the time for project execution. The purpose of Project Half Double is to improve Danish industrial competitiveness by radically increasing the pace and impact of the development and innovation activities carried out within the framework of the projects" (Svejvig et al. 2016: 5).

PHD consists of three phases. Phase 1 started in June 2015 and ended in June 2016. In this phase, The Ten Leading Stars were translated

into a more operational methodology labeled the Half Double Methodology (HDM), which has three focus areas: Impact, Flow, and Leadership. These three areas were later referred to as core elements or principles. Each principle was developed into three methods, and each method was associated with a tool. Hence, The Ten Leading Stars were developed into the HDM consisting of three core principles, nine methods, and nine concrete tools. The HDM was implemented in at least one project (hereafter, HD project) in each of seven organizations. Consultants from Implement Consulting Group supported the implementation and worked closely with project practitioners from the pilot organizations. The research team was responsible for evaluating the HD projects for the purpose of testing this new way of working. The HD projects were real and important projects and not small or insignificant project experiments. To conduct the evaluation, the research team developed a project evaluation framework (Svejvig and Hedegaard 2016, Laursen et al. 2017, Rode and Svejvig 2018). The main logic behind the evaluation was to compare the HD projects with comparable reference projects within the same organization, preferably a group of three. The reference projects were to be as identical to the HD project as possible, except for the HDM implemented and practiced in the HD project. The results of these HD projects would then be compared to the pool of reference project results. If the HD projects outperformed their comparable reference projects, then there would be an examination of the degree to which it was reasonable to infer that the superior performance was due to project management practices – hence, the HDM. The overall results of these initial evaluations were documented in the first two reports on PHD (Svejvig et al. 2016, Svejvig et al. 2017b).

Phase 1 developed into Phase 2, which ran from July 2016 to June 2019. In Phase 2, the HDM was implemented and evaluated in nine additional organizations. The evaluation followed the methodological design developed in Phase 1 but supplemented the internal comparisons of projects within each organization with an external comparison between organizations (Rode and Svejvig 2018). The overall results of the evaluations in the 16 organizations of Phase 1 and Phase 2 were documented in two reports (Svejvig et al. 2017a, Rode et al. 2019a). The main conclusion in the last report summarizing the 16 projects was that the HDM can lead to a higher impact compared to projects in the same organizations that do not apply the methodology (Rode and Svejvig 2021).

The desire to continue the journey did not diminish after the completion of Phase 2. Discussions with the Danish Industry Foundation continued and materialized into an agreement to fund PHD with an additional 15.8 million Danish kroner (2.1 million euros). This second grant started Phase 3, which began in 2019 and ended in 2023. The overall vision of increasing project success rates remains, but the purpose of Phase 3 is on diffusing the HDM to benefit several organizations. The focus is primarily on small- and medium-sized enterprises (SMEs) because there is a substantial potential to increase the rate of project success in this segment. In order to increase impact and reduce time in further projects, a concrete goal is to establish an independent Half Double Institute with HDM certifications. In the last report, it is stated that:

"The purpose of phase 3 is to diffuse and broaden Half Double to a number of small and medium sized organizations to reach a tipping point, thus creating a sustainable business model in which the concept of Half Double can continue as a self-sustaining and independent entity" (Rode and Svejvig 2021: 7).

Toward the end of Phase 3, the HDM should be diffused to more than 259 organizations, and the HD institute be established and in operation – although not yet self-sustaining.

2.2 The Half Double Phases

Table 2.1 summarizes the HD journey as it connects initial ambitions and subsequent conclusions across the three Phases.

PHASE	ONE	TWO	THREE
YEARS	2015–2016	2016–2019	2019–2023
AMBITIONS	Improve Danish industrial competitiveness by radically increasing project pace and impact.		Diffuse and broaden HD to a number of small- and medium-sized organizations (SMEs) to reach a tipping point, thus creating a sustainable business model in which the concept of HD can continue as a self-sustaining and independent entity
UNITS	• 7 organizations • 8 HD projects • 22 reference projects • 30 total projects	• 10 organizations • 14 HD projects • 24 reference projects • 38 total projects	• 6 organizations • 16 HD projects • 45 reference projects • 61 total projects • 259-5,001 diffused organizations* • 70 diffused SMEs
REPORTS	• First report on Phase 1 (Svejvig et al. 2016) • Second report on Phase 1 (Svejvig et al. 2017b)	• First report on Phase 2 (Svejvig et al. 2017a) • Second report on Phase 2 (Rode et al. 2019a, Rode et al. 2019b)	• First report on Phase 3 (Rode and Svejvig 2021) • Second report on Phase 3 (this report)
CONCLUSIONS	Out of six HD projects, four appear to have benefited from using the HDM and two seem to have little effect from using the HDM.	Out of 15 HD projects, nine fulfill most of their success criteria, four fulfill some of their success criteria, and two fulfill few of their success criteria. Out of 13 HD projects, seven have a higher performance, two have a medium performance and four HD projects	Out of 27 HD projects, 25 have a high success rate, five have a medium success rate, and 2 have a low success rate. Out of 21 HD projects, ten have a higher speed, eight have a medium speed, and three have a lower speed; and Out of 15 HD projects, six have a higher , six have a medium and three

* The lower interval of 259 is deduced by counting all known organizations that applied to the HDM. The upper interval of 5,001 is based on a large-scale survey. Combining the two numbers, we can be 95% certain that between 259 and 5,001 organizations apply the HDM.

TABLE 2.1: PROJECT HALF DOUBLE PHASES, PARTICIPANTS, EVALUATIONS AND PUBLICATIONS

The table lists participating projects and organizations in each phase and shows how PHD covers a total of 38 HD projects compared to 91 reference projects accumulating to a total of 129 projects evaluated. Data gathering and analysis is still ongoing, and the dataset of projects and organizations will continue to grow.

The table situates various reports within the larger picture and shows how this final report is the second report in Phase 3 – closing the longitudinal, comprehensive, and collaborative action design research study that is PHD.

2.3 The Half Double Ecosystem

Throughout the years and phases, HD has developed into an ecosystem. Figure 2.1 illustrates the HD ecosystem as it has accumulated from the beginning of Phase 1 to the end of Phase 3. It is a comprehensive picture with much information. But it is also an incomplete picture as it is impossible to include everything and as the ecosystem is in continuous development. Hence, it never reaches a finished status but continues to grow and expand like a living organism.

At the center is Half Double (HD) as the principal phenomenon around which a magnitude of different elements has arisen and emanated. In the following narrative account, the 15 surrounding elements are presented clockwise. One of the founding elements is *Project Half Double* (PHD) established by Implement Consulting Group portrayed as a leading *HD Partner* and facilitated by grants from The Danish Industry Foundation (Industriens Fond). Another HD Partner is Aarhus University where researchers from the Department of Management in Business and Social Science participate in the research stream of PHD. In Phase 1, the *HD Methodology* is developed and implemented in seven *HD Projects* hosted by seven *HD Organizations.* In Phase 2, an additional eight HD organizations participate, and the HDM is implemented and evaluated in 10 additional HD projects. At the end of Phase 3, 38 HD projects within 23 HD organizations are evaluated. Note, however, that many more HD projects and HD organizations exist as HDM is applied in several projects and organizations outside the scope of PHD. Experience and knowledge are created and disseminated – not only through *Written Publications*, including books, chapters, reports, and journal articles, but also through *Oral Presentations* and communication at meetings, workshops, webinars, seminars, and conferences. More than

20 researchers from Denmark and abroad partake in *HD Research Collaboration* and in one way or another, contribute to PHD. An *HD Community* is established and reaches more than 3,000 community members in Phase 3. Moreover, an HD *Certification* system including three certification levels is developed. Training bodies become *HD Accredited Training Organizations* by APMG International to offer training and certification in the HDM. Hence, *HD Practitioners* and others applying or interested in the application of the HDM can become an *HD Certified Practitioner*. To resolve the challenge of implementing the HDM in organizations where other project management standards already exist, *HD Coexistence* is developed to show how the HDM can complement other well-known and used standards – from classic and traditional PMI and IPMA standards to agile approaches like SCRUM and SAFE. At the end of Phase 3, the *HD Institute* is established and in operation. The goal for the HD Institute is to become an independent and self-sustaining entity that can continue to nourish and nurture the HD ecosystem and ensure its survival and expansion in the future.
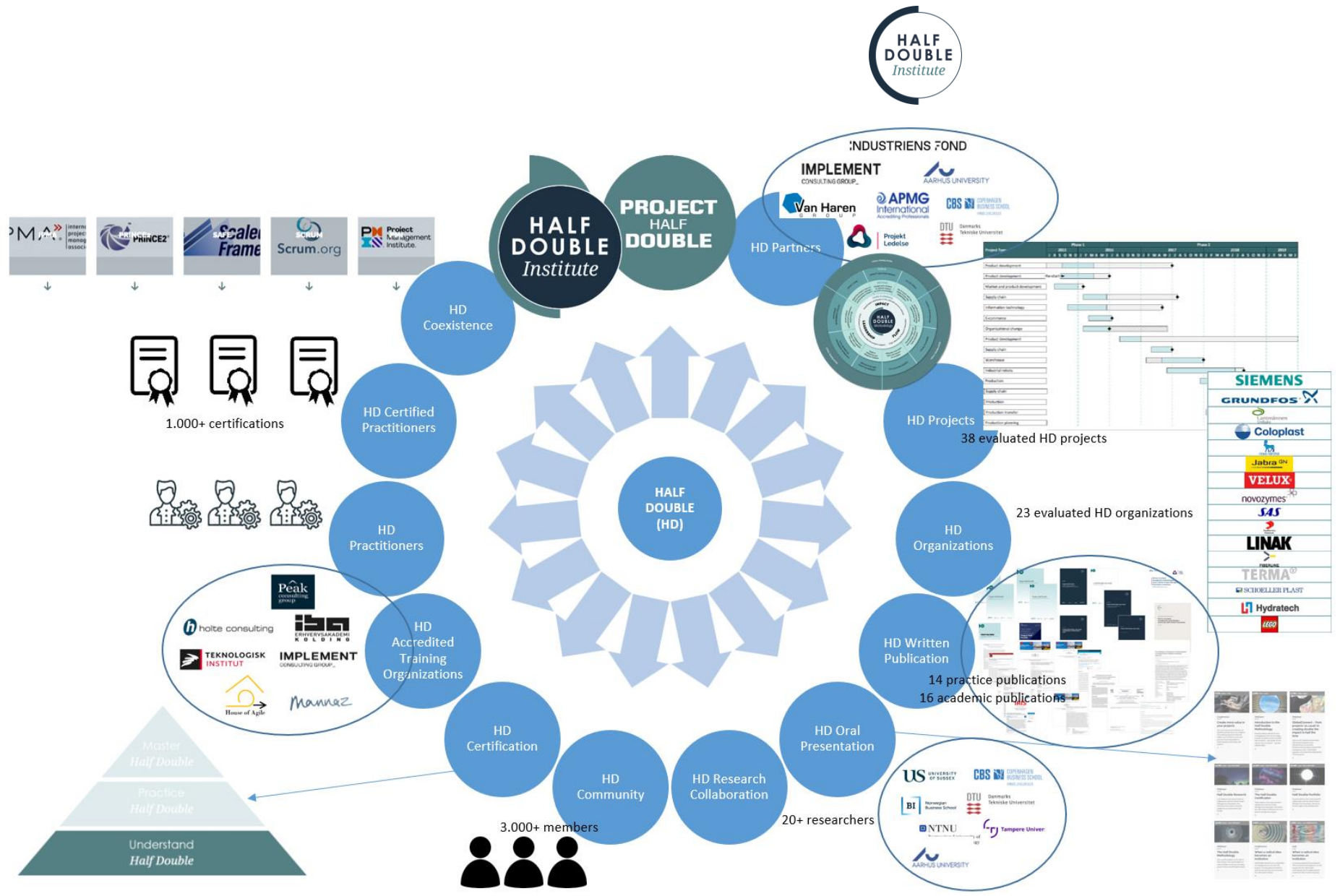
FIGURE 2.1: THE HALF DOUBLE ECOSYSTEM

3. Does Half Double make a difference?

By Anna Le Gerstrøm Rode and Oliver Bendix Gammeljord Mogensen (Aarhus University)

Given the many challenges and failures experienced in projects, one of the early ambitions among the pioneering practitioners behind Project Half Double (PHD) was to define a new, radically different way to manage projects. This chapter evaluates whether this ambition was reached. The pioneers' approach was to share knowledge and experiences of good or best practices. As this knowledge-sharing activity is developed into a toolset, the Half Double Methodology (HDM) materializes as a result of already existing approaches and mindsets (Svejvig and Grex 2016). In this way, the HDM relies on established tools and methods, and hence, it may not be as different as originally intended. This chapter analyses all the HDM practices to find out whether and to what degree they are new and different.

The aim of this chapter is to provide a set of answers to the preliminary question regarding whether the HDM makes a difference in the projects in which it is implemented.

To answer this initial question, Half Double (HD) practices in two groups of projects are examined: HD projects implementing the HDM and reference projects not implementing the HDM. Whether or not the HDM actually changes practice is analyzed by comparing practice applications in these two groups.

The structure of the chapter follows the three core elements: impact, flow, and leadership – and ends with an overview of the three elements and the nine practices. The final section provides an overview of the most applied HDM practices in HD projects only.

3.1 What is practice in Project Half Double?

In general, a practice is understood as "*a set of socially defined ways of doing things in a specific domain: a set of common approaches and shared standards that create a basis for action, problem solving, performance and accountability*" (Wenger et al. 2002: 38)."

HDM practices are associated with the tools and methods of the HDM (presented in Appendix A). The HDM is comprised of nine practices which are divided into three core elements. Table 3.1 provides an overview of the three elements and the nine practices used in this study.

ELEMENTS	Impact	Flow	Leadership
PRACTICES	Pulse Check	Co-Location	Collaborative Leadership
	Impact Case	Visual Planning	Active Project Ownership
	Impact Solution Design	Rhythm in Key Events	Reflective and Adaptive Mindset

TABLE 3.1: HALF DOUBLE METHODOLOGY PRACTICES AND ELEMENTS

Both HD and reference projects are evaluated in terms of their application of the HDM practices and scored on a scale from zero to four, with zero being no application and four being full application.

In total, the analysis is based on a dataset of 28 HD projects and 88 reference projects. In the nine practice analyses, HD projects vary from 21 to 28 and reference projects vary from 35 to 80. This is because some projects lack

data on one or more practices. Thus, projects are only included in analyses if they have data on the practice under investigation.

A statistical comparison of mean scores for HD and reference projects analyses the two groups of projects to test the hypothesis:

"HDM practices are applied more intensively (i.e., higher mean application score) in HD pro-

jects (i.e., implementing the HDM) than in reference projects (i.e., not implementing the HDM)."

The statistical analysis will either confirm or reject this hypothesis and will also show the HDM practices that are used relatively more in HD projects compared to reference projects and, finally, which HDM practices are most applied in HD projects irrespective of reference projects.

3.2 Impact practices

The core element of Impact aims to reduce the focus on deliverables and enhance the focus on effect. The data reveals that HD projects have a significantly higher application of the Impact practices of i) Pulse Check, ii) Impact Case, and iii) Solution Design compared to the reference projects. The mean scores for the application of the three Impact practices are visualized in figure 3.1.

Figure 3.1 shows that all three Impact practices confirm the hypothesis as the mean scores are significantly higher for the HD projects compared to the reference projects. The figure also shows the percentage difference between HD projects and reference projects for each of the three Impact practices.

The figure shows that the most applied Impact practice is Solution Design. This is the case across all projects, although the HD project mean score of 2.82 is 43% higher than the reference score.

The practice making the biggest difference is the Impact practice with a mean score of 2.76 for HD projects applying this practice, which is 68% more than reference projects.

Interestingly, the Pulse Check practice has a relatively lower mean for both HD and reference projects. This indicates that it is not a common practice to systematically keep track of the satisfaction and progress perception of core stakeholders and also that it might be a difficult practice to implement. This is also interesting in the light of the positive attitudes and experiences toward this practice expressed by several informants.
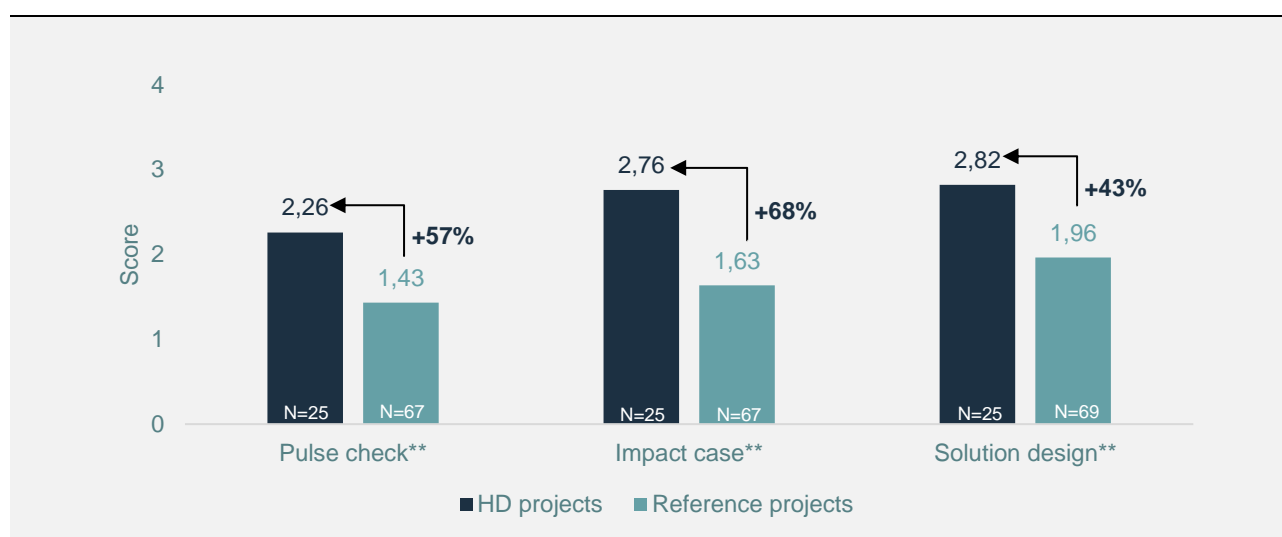
*indicates that the difference in mean values for HD projects and reference projects are significant at a level of 95% ($\alpha = 0.05$).
**indicates that the difference in mean values for HD projects and reference projects are significant at a level of 99% ($\alpha = 0.01$).

FIGURE 3.1: COMPARISON OF MEAN SCORES FOR IMPACT PRACTICES

3.3   Flow practices

The core element of Flow aims to reduce the focus on resource optimization and enhance the focus on the project's progression. The data reveals that HD projects have a significantly higher application of the Flow practices of i) Co-Location, ii) Visual Planning, and iii) Rhythm in Key Events compared to the reference projects. The application mean scores for the three Flow practices are visualized in figure 3.2.

Figure 3.2 shows that all three Flow practices confirm the hypothesis as the mean scores are significantly higher for the HD projects than the reference projects – although with varying degrees of significance. The figure also shows the percentage difference between HD projects and reference projects for each of the three Flow practices.

The figure shows that the Flow practice making the biggest difference is Rhythm in Key Events, which is used 65% more in HD projects compared to reference projects. This practice is also the most applied practice of the three Flow practices for the HD projects and, at the same time, the least applied practice in reference projects.

The difference in Visual Planning is also highly significant, although it is only used 37% more in HD projects compared to reference projects.

Co-location is interesting as it has the lowest application of the three Flow practices in HD projects, although its score of 3.09 is still in the high end of the scale. The practice's ability to make a difference in practice is lower compared to the other two Flow practices because this practice is used the most in reference projects. This is also interesting in the light of the COVID-19 pandemic, which especially challenged the Co-location practice.
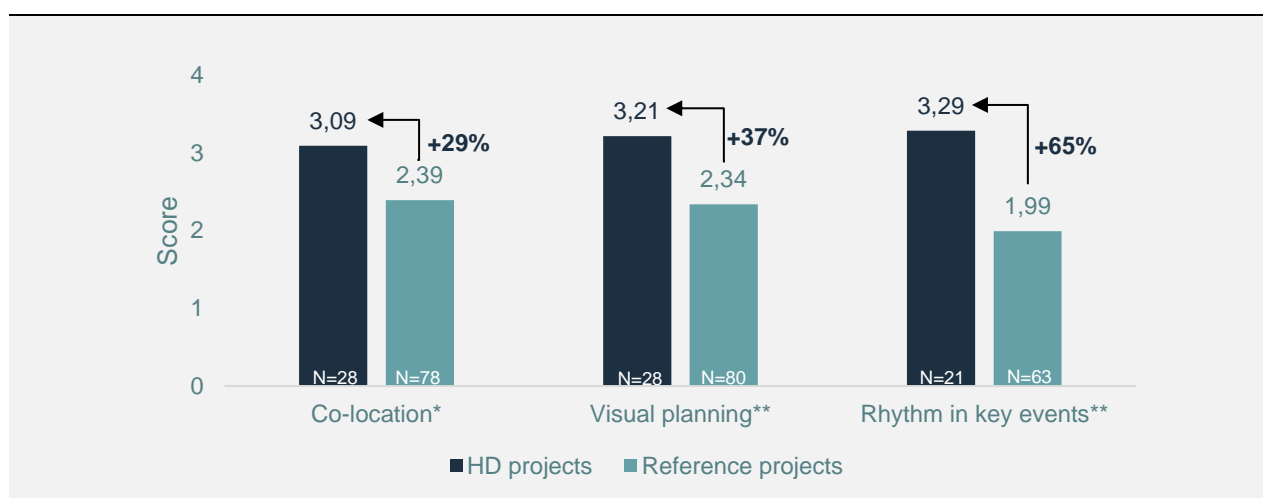
*indicates that the difference in mean values for HD projects and reference projects are significant at a level of 95% ($\alpha = 0.05$).
**indicates that the difference in mean values for HD projects and reference projects are significant at a level of 99% ($\alpha = 0.01$).

FIGURE 3.2: COMPARISON OF MEAN SCORES FOR FLOW PRACTICES

3.4   Leadership practices

The core element of Leadership aims to reduce formalism and enhance the focus on active involvement of the project owner and to reduce the focus on management of systems and enhance the focus on Leadership of people. The data reveals that HD projects in comparison to the reference projects have a higher application of the Leadership practices of i) Collaborative Leadership, ii) Active Project Ownership, and iii) Reflective and Adaptive

Mindset – although only the last practice difference is significantly higher. The application mean scores for the three Leadership practices are visualized in figure 3.3.

Figure 3.3 shows that two of the leadership practices cannot confirm the hypothesis, even though they are applied more in HD projects compared to reference projects. The figure also shows the percentage difference between HD projects and reference projects for each of the three Leadership practices.

The figure shows that the most applied Leadership practice is *Collaborative Leadership*. This is the case across all projects, although the HD project mean score is 10% higher than for the reference projects.

The practice *Active project ownership* makes the least difference as it is highly practiced in all projects and only 5% more in HD projects compared to reference projects.

The Leadership practice of *Reflective and Adaptive Mindset* has the largest and the only significant application difference. With a mean of 2.75, this practice is applied 66% more in HD projects compared to reference projects that apply this Leadership practice the least. The high application indicates stimulated reflection in the HD projects. In contrast, the low score of 1.66 in reference projects indicates they follow a more routinized ways of doing things.
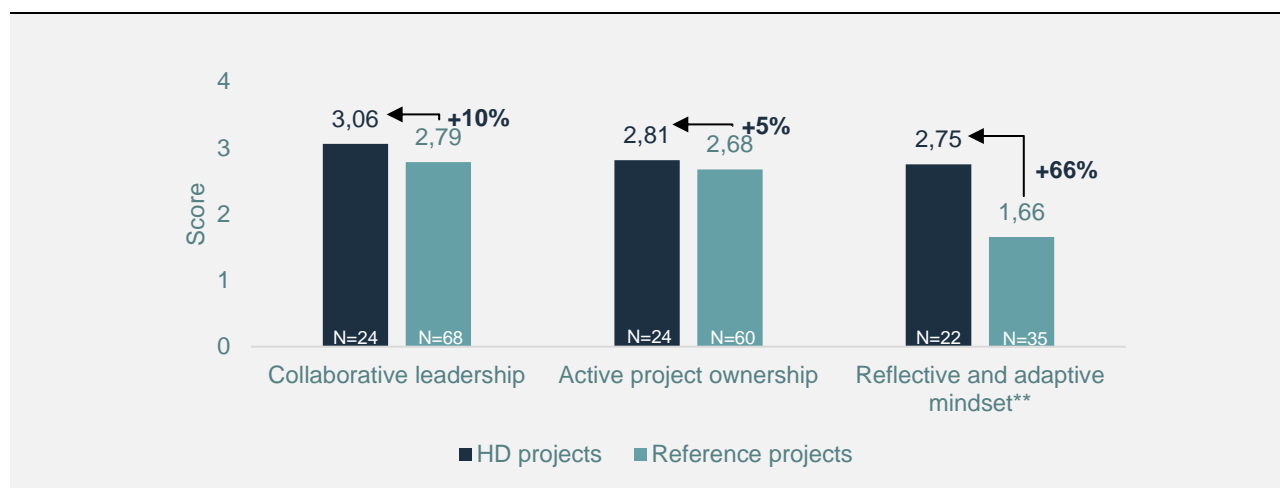
*indicates that the difference in mean values for HD projects and reference projects are significant at a level of 95% ($\alpha = 0.05$).
**indicates that the difference in mean values for HD projects and reference projects are significant at a level of 99% ($\alpha = 0.01$).

**FIGURE 3.3: COMPARISON OF MEAN SCORES FOR LEADERSHIP PRACTICES**

3.5 Three core elements

The mean scores for HD and reference projects on the three core elements in the HDM are summarized in figure 3.4.

The data reveals that there is a difference between the applications of the HDM practices in each of the three core elements, although with varying degrees and levels of significance.
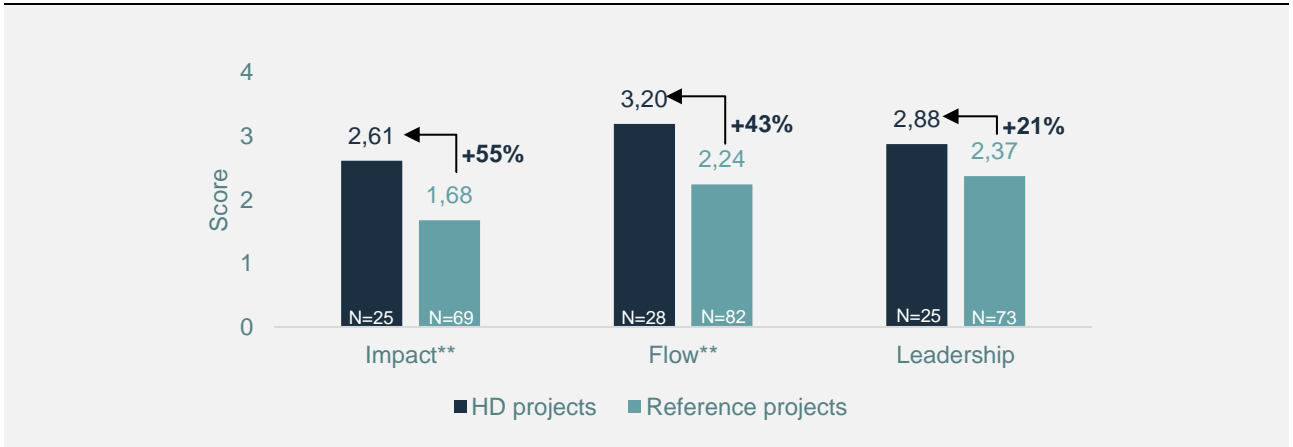
*indicates that the difference in mean values for HD projects and reference projects are significant at a level of 99% ($\alpha = 0.01$).
**indicates that the difference in mean values for HD projects and reference projects are significant at a level of 99% ($\alpha = 0.01$).

FIGURE 3.4: COMPARISON OF MEAN VALUES FOR IMPACT, FLOW, AND LEADERSHIP

The largest difference between HD projects and reference projects is found in the Impact element, which is used significantly more in the HD projects compared to the reference projects.

The most applied element in the HD projects is Flow, which also has a highly significant application difference compared to the reference projects. The most applied element among the reference projects is Leadership, which is also highly but not significantly more used in the HD projects.

Figure 3.5 lists all the HDM practices sorted according to their percentage differences between HD and reference projects.
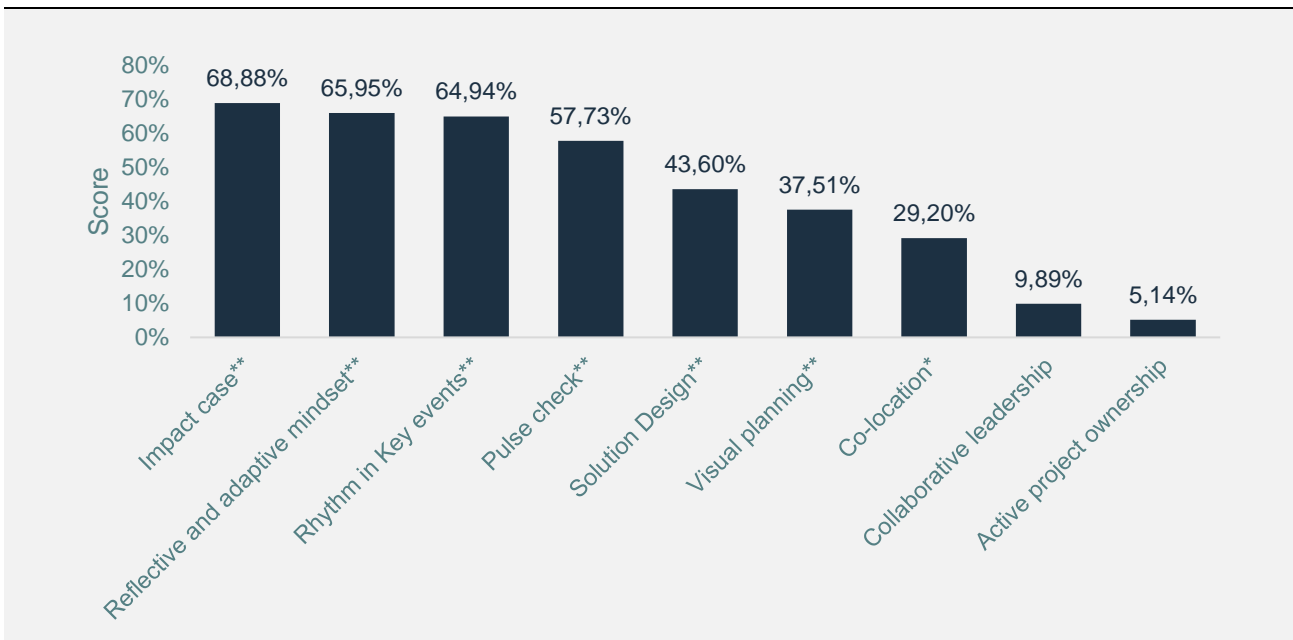
*indicates that the difference in mean values for HD projects and reference projects are significant at a level of 95% ($\alpha = 0.05$).
**indicates that the difference in mean values for HD projects and reference projects are significant at a level of 99% ($\alpha = 0.01$).

FIGURE 3.5: COMPARISON OF MEAN SCORES FOR ALL PRACTICES BY DIFFERENCE

Altogether, the figure shows that practices in HD projects are different from reference projects as well as that the difference varies.

The three practices with the highest and most significant difference are Impact Case, Reflective and Adaptive Mindset, and Rhythm in Key Events. This represents all three of the core elements: Impact, Leadership, and Flow.

The two lowest and insignificant differences are Leadership practices.

Also, Flow is represented in the lower end of the scale with co-location being significantly different but at a lower confidence level than the remaining practices.

Hence, most HDM practices confirm the hypothesis but with varying degrees and confidence. This means that in many ways the HDM way of managing projects is different from project management in the reference projects. Overall, it can then be concluded that, in general, the ambition to develop a different approach to project management has been achieved.

3.6 Practice application in Half Double projects

The last figure 3.6 provides an overview of the nine HDM practices sorted according to their application only in the HD projects.
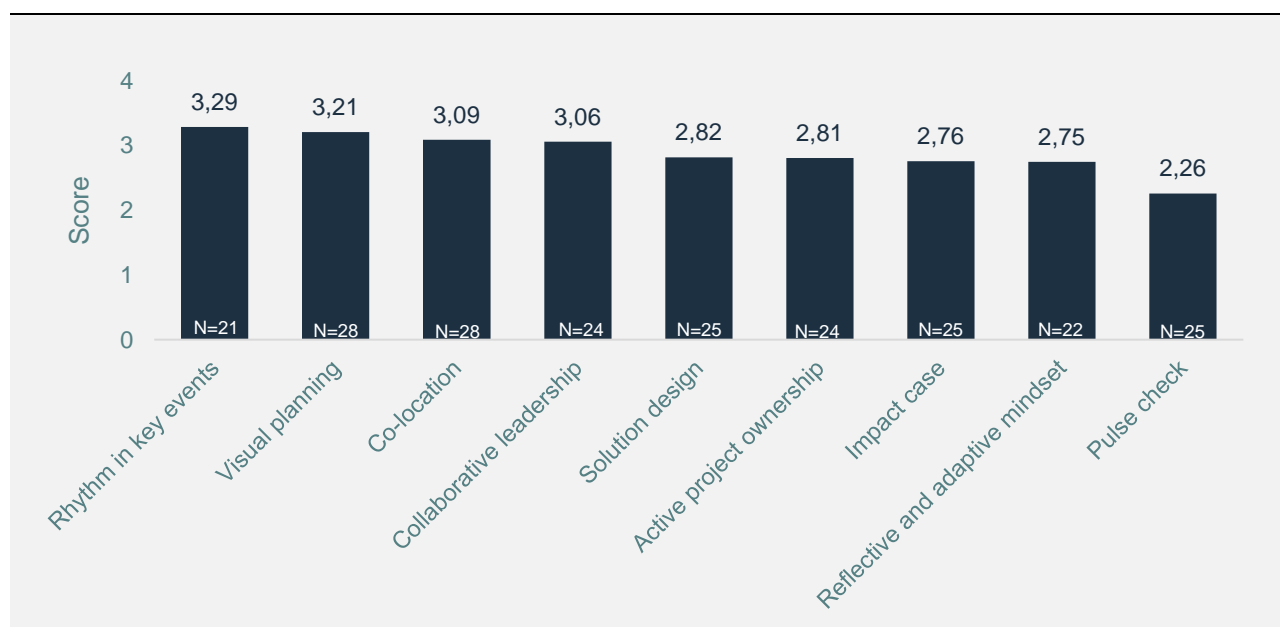
FIGURE 3.6: PRACTICE MEAN SCORES FOR HALF DOUBLE PROJECTS BY APPLICATION

Considering only the HD projects, the practices that are most applied are the three Flow practices of i) Rhythm in Key Events, ii) Visual Planning, and iii) Co-Location. Their high application indicates that they are perceived useful and relatively unproblematic to implement.

The least applied practices are the Impact practices of i) Pulse Check, ii) Impact Case and Leadership practice of i) Reflective and adaptive mindset. The low Impact application indicates these Impact practices are not as

easy to implement. This is interesting given the overall ambition of the HDM. The least applied Pulse check practice is especially interesting: it aims to "Be in touch with the pulse of your key stakeholders" and constitutes a remarkable controversy to the HDMs overall approach to success: "Stakeholder satisfaction is the ultimate success criterion."

The analysis naturally leads to pondering the reasons behind controversies and differences in application intensity across practices and projects. While such reasons can be many and would be interesting to further explore, explanatory analyses are beyond the scope of this chapter. Such inquiries must be left unanswered for now, but they do present interesting opportunities for further research.

Key questions for reflection

1. Can you describe practice in your organization or in your projects?
2. Is there a difference between the most used practices in your projects and in your organization – why?
3. What do you consider the best practices in your toolbox – why?
4. Is it possible to identify best practices that are beneficial across all kinds of projects and people?
5. What HD practices would make the biggest difference in your projects?
6. What HD practices are you curious to try – why?

4. Are Half Double projects successful?

By Anna Le Gerstrøm Rode (Aarhus University)

One of the overarching questions of interest is whether the Half Double (HD) projects applying the Half Double Methodology (HDM) are successful.

The aim of this chapter is to provide a set of answers to the overarching success question.

The chapter starts by defining and operationalizing the much-discussed success term. Next, the chapter provides an overview and a summary of the absolute and relative success of 28 HD projects in terms of speed and impact. The chapter ends by putting the absolute success and failure rates of the HD projects into perspective by benchmarking them to other project evaluations.

4.1 What is success in Project Half Double?

Success is one of the most debated phenomena within project management (Pinto and Slevin 1988, Ika 2009, Pinto et al. 2021). Multiple definitions of success and numerous operationalizations of how it should be studied exist (Zidane and Olsson 2017, Haass and Guzman 2019). Reviewing the wealth of research literature on success is a complex and contested phenomenon in that there is much ambiguity and lack of consensus regarding central success terms (Jugdev and Müller 2005, Ngacho and Das 2014).

In this report, success is conceptualized in two ways, namely absolute success and relative success.

Absolute success refers to the number of success criteria of the HD project and the degree to which the criteria are fulfilled (Dahler-Larsen 2013, Takagi and Varajão 2021). This conception of absolute success is generic in the sense that it is not restricted to either project success (effectiveness) or project management success (efficiency) but is dependent on the initial success criteria set at the beginning and evaluated at the end of the HD project. Absolute success is categorized into the three levels shown in Table 4.1.

The absolute success evaluations are conducted by central project stakeholders like project managers, consultants, and researchers**.**

Relative success refers to the degree to which each HD project is superior in the sense that it outperforms the group of comparable reference projects that did not apply the HDM within the same organization. Relative success refers to two parameters:

Speed refers to project management efficiency (Zidane and Olsson 2017, Haass and Guzman 2019). It is evaluated from a process perspective (Rode et al. 2022) and answers the question: What is the speed of the HD project compared to its reference projects? Speed is categorized into the three levels shown in Table 4.1.

Impact refers to project effectiveness (Zidane and Olsson 2017, Haass and Guzman 2019). It is evaluated from an outcome perspective (Rode et al. 2022) and answers the question: What is the impact of the HD project compared to its reference projects? Impact is categorized into the three levels shown in Table 4.1.

The relative success evaluations are conducted by researchers relying on information from central project stakeholders like project owners and/or project managers.

Success	Definition	Operationalization	Categorization
Absolute success	Success criteria fulfillment	Low success	few (less than 1/3) of the success criteria are fulfilled or to a low degree (less than 1/3)
		Medium success	some (between 1/3 and 2/3) of the success criteria are fulfilled or to some degree (between 1/3 and 2/3)
		High success	many (more than 2/3) of the success criteria are fulfilled or to a high degree (more than 2/3)
Relative success	Project management efficiency (speed)	Lower speed	the speed of the HD project is slower than its comparable reference projects
		Medium speed	the speed of the HD project is similar to its comparable reference projects
		Higher speed	the speed of the HD project is faster than its comparable reference projects
	Project effectiveness (impact)	Lower impact	the impact of the HD project is lower than its comparable reference projects
		Medium impact	the impact of the HD project is similar to its comparable reference projects
		Higher impact	the impact of the HD project is higher than its comparable reference projects

TABLE 4.1: CONCEPTUALIZING SUCCESS IN PROJECT HALF DOUBLE

4.2 How successful are Half Double projects?

The overall distribution of absolute and relative success among the 28 HD projects are visualized in the three diagrams in figure 4.1.

4.2.1 Absolute success

Absolute success is analyzed in terms of initial success criteria achievement – also known as evaluation by objectives (Dahler-Larsen 2013).

Absolute success evaluations were conducted on 27 of the 28 HD projects, with a lack of data from one HD project. Of the 27 HD projects, 20 fulfilled all or most of their success criteria to a high degree, which means that the absolute success rate is 74%. This is a high success rate considering the many projects that seem to fail today (Johnson 2018, Johnson 2022). Correspondingly, two HD projects fulfilled none or only a few of their success criteria to a low degree, which means that the HD failure rate is 7% and remarkably low. Hence, the absolute success evaluation is a positive indicator that most of the projects applying the HDM succeed in fulfilling their goals.
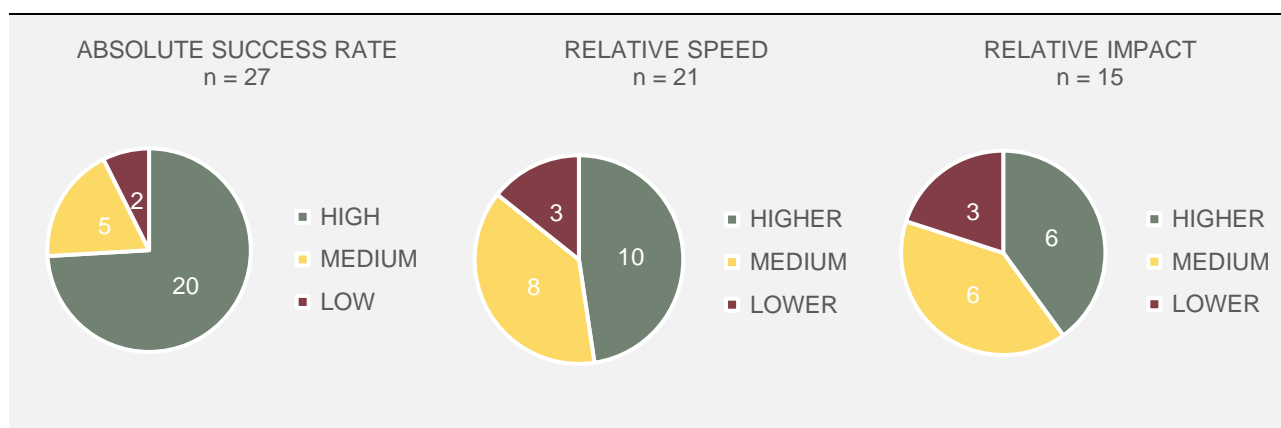

FIGURE 4.1: HALF DOUBLE PROJECT SUCCESS

However, such an objective-based evaluation (Dahler-Larsen 2013) can also mean that the initial goals set for the HD projects are low and not ambitious enough (Christensen and Kreiner 1991). We do not have sufficient insight to reach a conclusion on the level of ambition for the HD projects. But we can ascertain that the HD projects are significant. They are important projects set to make a positive difference for the host organizations. It is not our impression that the goals of the HD projects are unambitious but thoroughly considered and systematically worked through with inspiration from the HDM. In that light, the success and failure rates of 74% and 7% are positive indicators of the HDM making a positive difference for the project's ability to meet their goals.

4.2.2   Relative success

Relative success is evaluated in terms of speed and impact; that is, what is referred to as evaluation of project management success or efficiency and project success or effectiveness (Zidane and Olsson 2017, Haass and Guzman 2019, Rode 2023).

Relative speed, indicative of project management success, was evaluated in 21 of the 28 HD projects, with a lack of data in seven cases. Compared to their reference projects, 48% of the HD projects had a shorter duration and were completed at a faster speed, 38% of the HD projects had a duration like their reference projects and were conducted at medium speed, and 14% of the HD projects had a longer duration and were conducted at a slower speed. The fact that nearly half of the HD projects were faster shows that it is possible to increase project speed.

Relative impact, indicative of project success, was evaluated in 15 of the 28 HD projects, with a lack of data in 13 cases. Compared to their reference projects, 40% of the HD projects had a higher impact, 40% had a medium impact similar to their reference projects, and

20% had a lower impact compared to their reference projects. These numbers show that it is also possible to increase project impact.

Overall relative success evaluations were conducted in 22 of the 28 HD projects, with a lack of comparable reference projects in five cases and a lack of relative data in one case.

Figure 4.2 combines the two relative success evaluations in which relative efficiency (speed) is on the horizontal x-axis and relative effectiveness (impact) is on the vertical y-axis.

The matrix shows three green projects in the upper right corner that have both a higher project effectiveness (impact) and project management efficiency (speed). Other than these extremely high scoring projects, three projects are colored green and considered successful as they score medium and high on the two dimensions. Hence, 6 of 22 HD projects (27%) are above and right of the vertical line constituting positive indicators of the HDM's ability to increase project speed and/or impact.

At the other end of the matrix, one project is in the lower left corner because it has a lower score both in terms of project effectiveness (impact) and project management efficiency (speed). Other than this extremely low scoring project, one project is colored red and considered a failure scoring lower and medium on the two dimensions. Hence, two of the 22 HD projects (9%) are below and left of the vertical line constituting negative indicators of the HDM's ability to reduce project speed and/or impact.

In between these two extremes are six yellow projects, four of which scored medium on both dimensions and two of which scored low on one dimension (impact) and high on the other (speed). 27% of projects are on the vertical line and considered inconclusive.

Eight HD projects (36%) lacked data on one dimension and cannot be placed in any of the three categories. They are indicated by the

gray color and the arrows illustrating the span of their potential success.

Altogether, the number of projects (six) on the positive side of the vertical line are larger than the number of projects (two) on the negative side, which constitutes a slight indicator of the ability of the HDM to improve project speed and/or impact. However, the largest number of projects with insufficient data (eight) or with medium performance (six) constitutes a strong indicator of the difficulty of performing this kind of success evaluation.
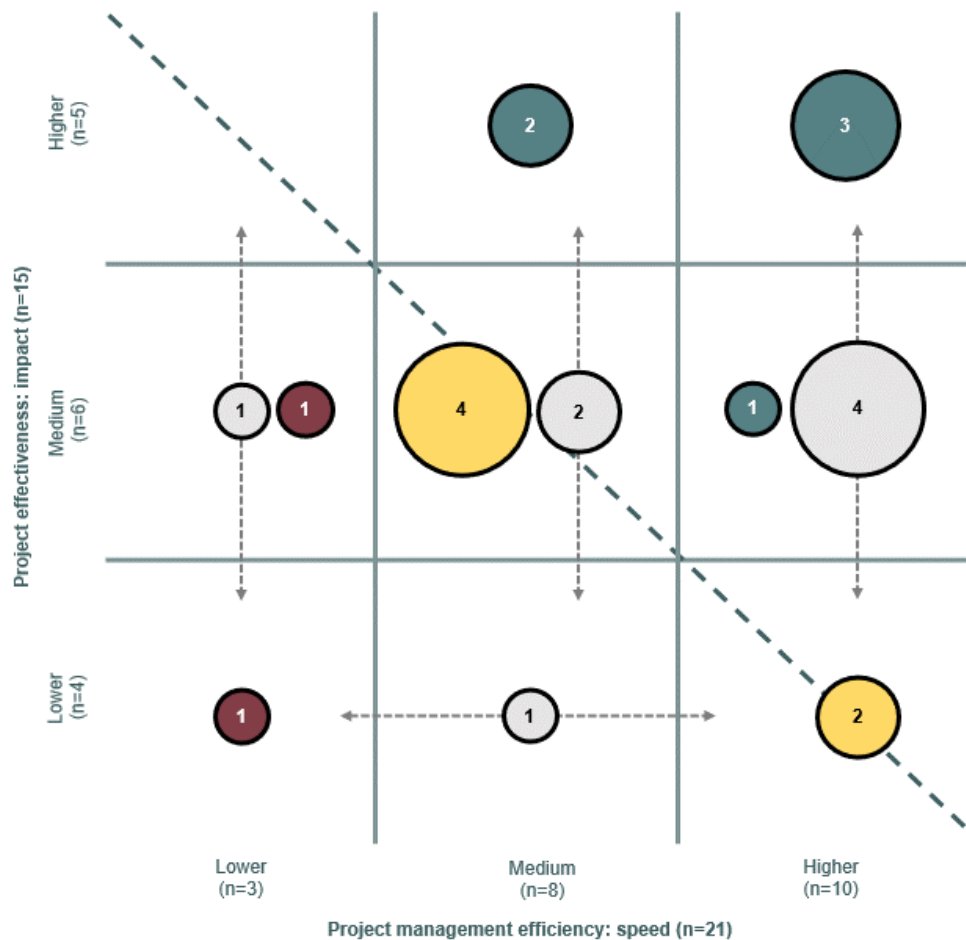
The arrows on the circles indicate lack of data on one dimension.

The size of the circles indicates the number of HD projects.

The color of the circles indicates their level of relative success:

- red projects: low-medium
- yellow projects: medium or high and low
- green projects: medium-high
- gray projects: inconclusive

FIGURE 4.2: RELATIVE SUCCESS MATRIX

4.3 Are Half Double success rates superior?

To nuance and broaden the understanding of the success and failure rates of HD projects, they are put into perspective by juxtaposing the rates to other evaluation benchmarks, thereby providing a type of baseline for the HD project evaluations. External benchmarking is done to combat overly optimistic interpretations of the HD rates. However, methods, measures, and meanings vary considerably across the four studies, and their definitions of success and failure are not identical. This is important to have in mind in interpreting the evaluations.

Table 4.2 shows the success and failure rates of HD projects and three recent benchmarking studies.

REPORT	HD (2023)[1]	PMI (2023)[2]	CHAOS (2022)[3]	AIPM (2021)[4]
Success	74% (of projects fulfilled all or most of their success criteria to a high degree, meaning above 67%)	65–72% (of projects successfully met business goals [ranging from low to high priority of power skills[5]])	31% (31% were successful using modern measurement and 50% were challenged)	92% (of respondents answered that 50% of their projects were in line with original goals and business intent)
Failure	7% (Of the projects fulfilled none or few of their success criteria to a low degree, meaning below 33%)	17–25% (Of budget lost to project failure [range going from high to low priority of power skills[5]])	19% (19% failed using modern measurement)	18% (Of respondents estimated that projects generally realize less than 50% of their benefits)
Method	Quantitative and qualitative in-depth study with 27 Half Double projects compared to reference projects	Quantitative data from survey with 3,492 respondents from around the world, with a focus on North America. Qualitative data from 12 interviews	Quantitative data from global database with 50,000 cases, primarily within software development	Quantitative data from survey with 473 respondents from around the world, with a focus on Australia

[1]The HD report is this report conducted by the research team of Project Half Double and published in 2023.
[2]The PMI report is published by the Project Management Institute (Le Manh 2023).
[3]The CHAOS report is published by The Standish Group (Johnson 2022: 8).
[4]The AIPM report is published by the Australian Institute of Project Management and KPMG (Moore and Gokani 2021).
[5]The PMI report focuses on power skills and reports success and failure on a range from low to high priority of ? (Le Manh 20234).

TABLE 4.2: BENCHMARKING HALF DOUBLE PROJECT SUCCESS AND FAILURE

The three external benchmarking studies are rather broad and are mainly based on quantitative survey data, while PHD relies on a rather deep study based on mixed methods that combine quantitative and qualitative data from interviews, focus groups, and documents, among others. Each method has its advantages and disadvantages. A further discussion of the methodological differences and similarities is outside the scope of this chapter. Notwithstanding, we find it relevant to compare the HD study with the three benchmarking studies to put the HD evaluation into perspective.

Success rates range from 31% in the CHAOS report to 92% in the AIPM report, while the HD success rate of 74% is somewhere in the middle. Looking closer at the definitions of success, PMI and CHAOS are closest to the HD definition, while the AIPM definition refers to a broader span. Excluding AIPM, which states that 92% of the respondents answered that 50% of their projects met their goals and intent, PHD has the highest success rate at 74% of projects fulfilling all or above 67% of the projects' success criteria.

Failure rates range from 7% in PHD to 17–25% in the PMI report. Looking closer at the definitions of failure, CHAOS is closest to the HD definition, while the AIPM definition refers to a broader span and the PMI definition is less precise. Excluding these two success rates ranging from 17% to 25%, the HD failure rate of 7% is considerable low compared to the CHAOS failure rate of 19%.

Considering these external benchmarks, the success and failure rates of the HD projects are notable. The high success rate and the lowest failure rate shed a positive light on HDM.

Key questions for reflection

1. What is project success and failure in your mind?
2. Is there an official definition of success and failure in your organization?
3. What are the advantages and disadvantages of the prevailing definitions?
4. Would it be beneficial to facilitate a discussion of what constitutes success and failure in your organization?
5. Does the culture in your organization support learning from projects, both in terms of success and failure?
6. How successful were the last three projects in which you participated – from a process and an outcome perspective?
7. What can you learn from your past successes and failures?

5. Are Half Double contexts and characteristics specific?

By Anna Le Gerstrøm Rode (Aarhus University)

This chapter presents the contexts and characteristics of the Half Double (HD) projects that implemented the Half Double Methodology (HDM). It covers 28 HD projects that were initially perceived as relevant to the HDM, with 18 of these subsequently evaluated as successful.

The aim of the chapter is to equip reflective practitioners (Crawford et al. 2006) with background information on HD projects to enable reflection on the potential fit between the HDM and their own projects.

The chapter is structured into two sections. The first section outlines project contexts operationalized as sector and industry as well as host organization size. The second section outlines project characteristics operationalized as project type and size measured in cost and effort.

5.1   General and specific project contexts and characteristics

This chapter does not aim to claim that the HDM is a one size fits all approach. Nor does it comprise a contingency analysis of a set of contingency factors upon which the fit between the HDM and the situation at hand is contingent. It does not – directly or indirectly – generalize HDM fit in certain project contexts or characteristics. Such generalizations and speculations are beyond the scope of this chapter and the underlying dataset, which represents only a selected proportion of the infinite number of context and characteristic elements that can play a role in the match between a project and a project management methodology like the HDM (Rode et al., 2023).

The section takes a point of departure with the arguments for developing reflective practitioners (Crawford et al. 2006, Winter et al. 2006, Berggren and Söderlund 2008) who carefully and continuously consider the specifics of each and every project before implementing any project management approach or practice.

Instead of advising project practitioners to blindly and fully follow the HDM – or any other project management methodology for that matter – the chapter presents a proportion of context and characteristic elements and recommends that project owners, managers, and team members reflect upon their own specific situations to identify the potential and applicability of the HDM in their own projects.

5.2   Project Contexts

This section outlines HD project contexts operationalized as sector and industry as well as host organization size.

5.2.1   Sector

Most HD projects are within the private sector, but the public sector is also represented – with one organization and three HD projects. In total, 25 HD projects are private and 16 of these are successful. Of the three public HD projects, two are successful. Figure 5.1 shows the distribution of projects within the two sectors.

5.2.2   Industry

The HD projects also vary in terms of industrial context, and they range across 12 different industries. Considering all HD projects, the Components industry has the highest representation, but Manufacturing, Engineering, and Technology are also predominant. Considering only the successful HD projects, Components and Electronics has the highest

representation, whereas biotechnology has no representation. Figure 5.1 shows the distribution of HD projects across the 12 industries.

5.2.3 Organization size

The HDM is considered relevant and was implemented across 22 organizations of which 16 hosted successful HD projects. The host organizations provided a unique context for the HD projects, and they varied considerably – also in terms of size. Figure 5.1 shows the distribution of projects across host organiza-tion size, with size categorized into SMEs, de-fined as organizations with less than 1,000 employees, and large enterprises (LEs), de-fined as organizations with more than 1,000 employees. The high proportion of LEs among the HD projects indicates that large and ma-ture organizations with a professional ap-proach to project management are initially considered relevant for the HDM. However, the large proportion of the HD projects in SMEs that are evaluated as successful indi-cates that the HDM also works in SME con-texts.

HALF DOUBLE PROJECTS

SUCCESSFUL HALF DOUBLE PROJECTS

SECTOR

n=28 projects

private 25

public 3

n=18 projects

private 16

public 2

INDUSTRY

n = 28 projects

components 4

manufacturing 3

engineering 3

electronics 3

defense 3

pharmaceutical 2

food 2

biotechnology 2

health care 2

construction 2

telecom 1

logistic 1

n = 18 projects

electronics 3

pharmaceutical 2

health care 2

defense 2

telecom 1

logistic 1

engineering 1

manufacturing 1

food 1

construction 1

ORGANIZATION SIZE

22 organizations

large enterprises 13

small and medium enterprises 9

16 organizations

small and medium enterprises 8

large enterprises 8

FIGURE 5.1: HALF DOUBLE PROJECT CONTEXTS

5.3 Project Characteristics

This section outlines HD project characteristics operationalized as project type and size measured in cost and effort.

5.3.1 Project size

The HDM is implemented and evaluated in projects of many different sizes.

In terms of cost, project size varies and ranges up to 650 million DKK, whereas successful HD project size also varies, but only up to 200 million DKK. The average cost is 58 million in all HD projects and 20.75 million DKK in successful HD projects. These numbers indicate that the HDM might have difficult odds in very large projects. However, only three HD projects cost more than 100 billion DKK, so the data set of very large projects is restricted and, hence, the conclusions uncertain. If all HD project costs are accumulated, the total cost is above 1.5 billion DKK. This number underscores the seriousness of the projects that participated: They are not minor or insignificant experimental pilot projects. Figure 5.2 shows the distribution of project costs across three size categories.

In terms of effort, project size varies from 180 to almost 350,000 hours but only from 180 to 20,400 hours for successful HD projects. Average effort is approximately 30,000 hours in all HD projects and 5,000 hours in successful HD projects – indicating again that the HDM might have difficult odds in very large projects. However, only two HD projects spent more than 100,000 hours, so the data set of very large projects is restricted and hence the conclusions uncertain. If all HD project efforts are accumulated, the total effort is above 667,645 hours. This number underlines that the HD projects are representing important priorities of comprehensive caliber. Figure 5.2 shows the distribution of project efforts across three size categories.

5.3.2 Project type

The HDM is implemented and evaluated in a variety of project types. In figure 5.3, projects are sorted into nine categories. Typical project types are Product Development, Process Optimization, Supply Chain, and Information Technology. In terms of successful HD projects, Supply Chain and Information Technology as well as Process Optimization are typical. No project type is unrepresented among the successful HD projects – indicating that the HDM seems to work in many different project types.

HALF DOUBLE PROJECTS

PROJECT SIZE

PROJECT COST

n=26 projects

- small cost < 1,000,000 dkr
- medium cost < 10,000,000 dkr
- large cost > 10,000,000 dkr

SUCCESSFUL HALF DOUBLE PROJECTS

n=16 projects

- small cost < 1,000,000 dkr
- medium cost < 10,000,000 dkr
- large cost > 10,000,000 dkr

PROJECT EFFORT

n=22 projects

- small effort < 1,000 hours
- medium effort < 10,000 hours
- large effort > 10,000 hours

n=12 projects

- small effort < 1,000 hours
- medium effort < 10,000 hours
- large effort > 10,000 hours

FIGURE 5.2: HALF DOUBLE PROJECTS SIZE CHARACTERISTICS
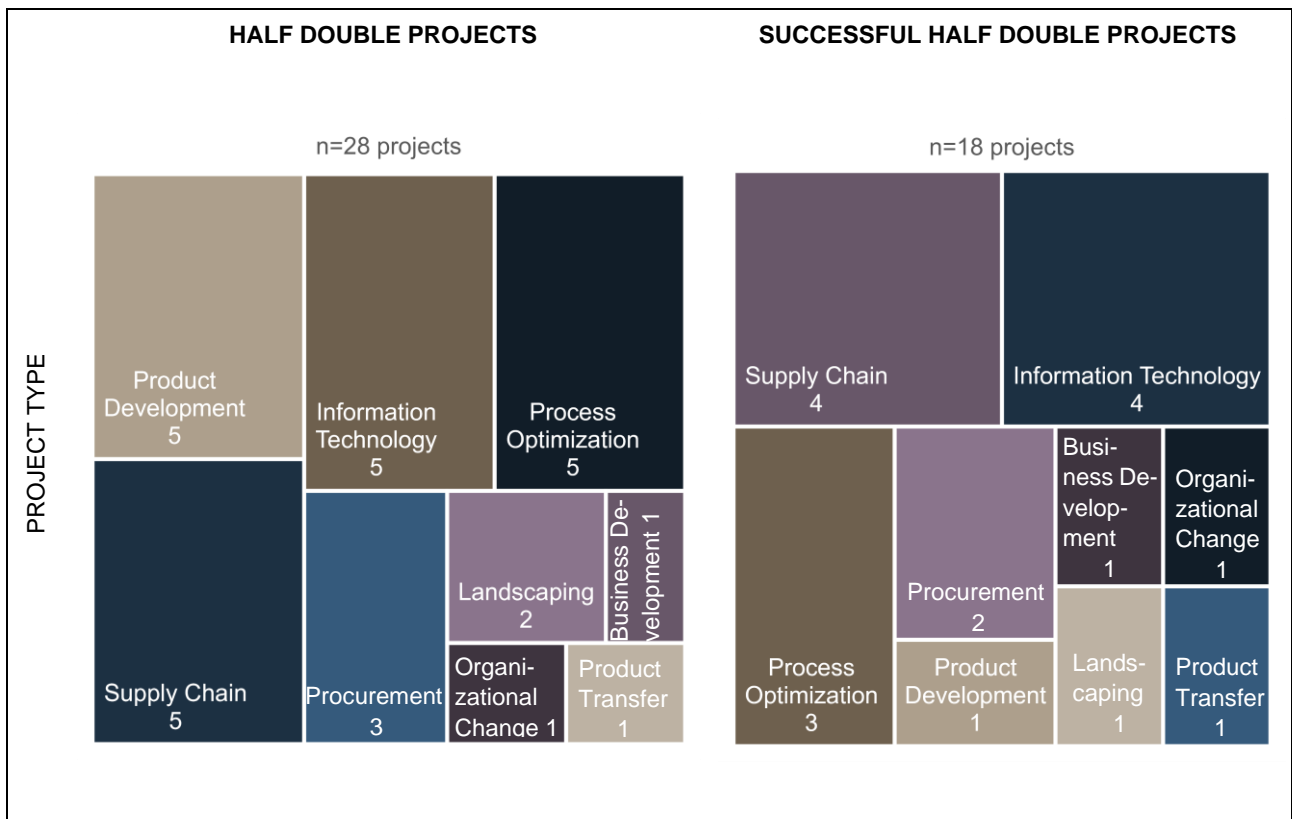
FIGURE 5.3: HALF DOUBLE PROJECT TYPE

Key questions for reflection

1. What are the context and characteristics of your projects?
2. Do your projects lie within the variance of relevant or successful HD projects?
3. Do context and characteristics vary across your projects?
4. Do context and characteristics matter for your selection and application of project management approaches, standards, methodologies, models, tools, and practices?
5. What do you consider the most important or decisive factor for choice of project management approach?

6. Does Half Double match small and medium enterprises?

*By Anna Le Gerstrøm Rode and Oliver Bendix
Gammeljord Mogensen (Aarhus University)*

This chapter goes into detail on one of the context dimensions analyzed in the former chapter 5; namely organizational size. It is especially interesting to explore Half Double (HD) within SMEs because they constitute most organizations in Denmark and because the HDM has the potential to make a positive contribution within this context.

The aim of this chapter is to review the analyses of the two former chapters 3 on application of the Half Double Methodology (HDM) and chapter 4 on performance of the Half Double (HD) projects to explore whether the HDM is applicable and makes a difference within SMEs and whether HD projects are successful and superior in SMEs. Hence, this chapter brings together a process evaluation and an outcome evaluation of projects (Rode et al. 2022) in the special, dominant, and relevant SME context.

The chapter is structured in four parts. Before the chapter delves into the details of practice and success, the SME term is defined and operationalized. Section Two focuses on practices and follows the structure of chapter 3. Section Three focuses on success and follows the structure of chapter 4.

6.1 What are small- and medium-sized-enterprises in Project Half Double?

The HD definition of SMEs follows the company size classification shown in table 6.1, which ranges from micro enterprises with less than 10 employees to large–medium enterprises with up to 1,000 employees. Organizations with more than 1,000 employees are considered large enterprises – and are outside the scope of this chapter.

SME SIZE CATEGORY	NUMBER OF EMPLOYEES	NUMBER OF HALF DOUBLE PROJECTS	NUMBER OF REFERENCE PROJECTS
Large–medium enterprise	251–1,000	5	6
Medium enterprise	51–250	4	7
Small enterprise	11–50	1	31
Micro enterprise	1–10	0	4

Table 6.1: size classification of small- and medium-sized enterprises (adapted from the European Commission (EuropeanCommission 2018)])

Following the classification in table 6.1, SMEs are defined as organizations with less than 1,000 employees.

The operationalization of HD organizations' size classifications is based on data from documents and Denmark's Central Business Register (CVR).

By the end of Phase 3, Project Half Double (PHD) covered 52 organizations, and of these, 38 (73%) had a staff headcount of fewer than

1,000 employees at the time of enrollment in PHD (organizations can grow after their enrollment). Of these 38 organizations, five hosted HD projects, 29 hosted comparative reference projects, and four hosted both HD and reference projects. Hence, in PHD, nine SMEs implemented the HDM. In total, PHD covers ten HD projects and 48 reference projects in SMEs.

The distribution of SMEs in PHD is rather low compared to the distribution of SMEs in the

Danish business landscape, in which 99% of organizations are SMEs (Vestgaard et al. 2018).

6.2 Does Half Double make a difference in small- and medium-sized enterprises?

For a definition and operationalization of the practice term, please see section 1 in chapter 3 on practices.

The following analysis and comparison of mean scores for HD and reference projects tests the hypothesis:

"In SMEs, HDM practices are applied more intensively (i.e., higher mean application score) in HD projects (i.e., implementing the HDM) than in reference projects (i.e., not implementing the HDM)."

The next sections will either confirm or reject this hypothesis, but they will also show which HDM practices are used relatively more in HD projects compared to reference projects and, finally, which HDM practices are most applied in HD projects irrespective of reference projects in SMEs.

In total, the analysis is based on a dataset of 10 SME HD projects and 48 SME reference projects. In the nine practice analyses, HD projects varied from nine to ten and reference projects varied from 16 to 47. This is because some projects lacked data on one or more practices. Thus, projects were only included in mean analyses if they had data on the practice under investigation.

6.2.1 Impact practices in small- and medium-sized enterprises

The evaluation of the three Impact practices reveals that HD projects have a higher application of: i) Pulse Check, ii) Impact Case, and iii) Solution Design compared to the reference projects. The application mean scores for the three Impact practices are visualized in figure 6.1.

Figure 6.1 shows that only the second Impact practice confirms the hypothesis with a significance level of 95%. The other two impact practices are still higher in HD projects compared to reference projects, but the difference is not significant.

The figure shows that the three Impact practices are around 2.5 in HD projects but vary in reference projects from below 2.0 to 2.5 in Solution Design, which has the smallest difference at only 9%. The largest difference is 37% for the Impact Case, which is also significant.

The means for reference projects are higher in SMEs than in all enterprises in all three Impact practices (see chapter 3). This indicates that Impact practices are more often used in SMEs than in large enterprises. This is contrary to expectations – and warrants further research into the reasons behind these differences.

*indicates that the difference in mean values for HD projects and reference projects is significant at a level of 95% ($\alpha = 0.05$).
**indicates that the difference in mean values for HD projects and reference projects is significant at a level of 99% ($\alpha = 0.01$).

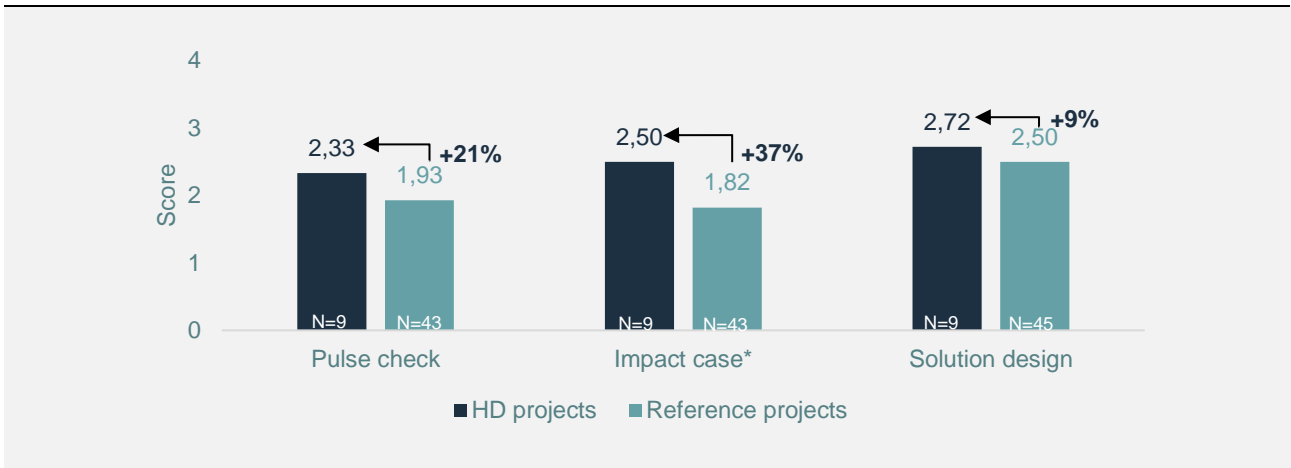**FIGURE 6.1: COMPARISON OF MEAN SCORES FOR IMPACT PRACTICES IN SMALL- AND MEDIUM-SIZED ENTERPRISES**

6.2.2 Flow practices in small- and medium-sized enterprises

The evaluation of the three Flow practices reveals that HD projects have a higher application of: i) Co-Location, ii) Visual Planning, and iii) Rhythm in Key Events compared to the reference projects. The application mean scores for the three Flow practices are visualized in figure 6.2.

Figure 6.2 shows that only the third Flow practice confirms the hypothesis with a high significance level of 99%. The other two Flow practices are still higher in HD projects compared to reference projects, but the difference is not significant.

The figure shows that the three Flow practices are around 3.0 in HD projects but vary in reference projects from below 2.0 to 2.8 in Co-Location which has the smallest difference at only 9%. The largest difference is 55% for Rhythm in Key Events, which is also highly significant.

HD projects have remarkably high means, also in comparison to the three Impact practices. However, the mean scores in all enterprises are higher than in SMEs (see chapter 3). This indicates that Flow practices are more difficult to implement in SMEs than in large enterprises.

FIGURE 6.2: COMPARISON OF MEAN SCORES FOR FLOW PRACTICES IN SMALL- AND MEDIUM-SIZED ENTERPRISES
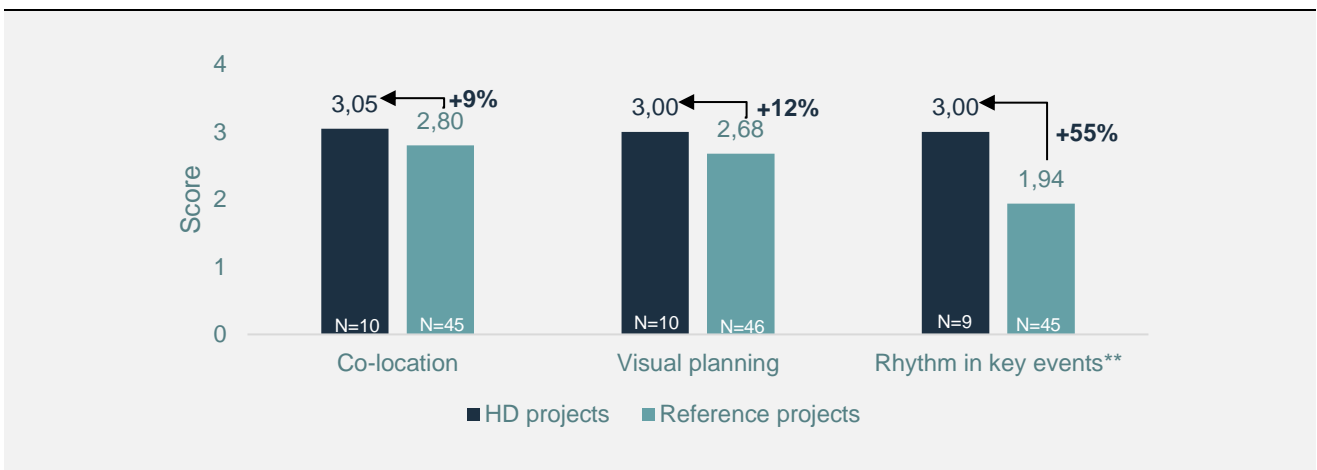
6.2.3 Leadership practices in small- and medium-sized enterprises

The evaluation of the three Leadership practices reveals that HD projects have a higher application of i) Reflective and Adaptive Mindset but a lower application of ii) Collaborative Leadership and iii) Active Project Ownership. The application mean scores for the three Leadership practices are visualized in figure 6.3.

Figure 6.3 shows that two of the Leadership practices cannot confirm the hypothesis as they are applied less in HD projects compared to reference projects. The only confirmatory practice is Reflective and Adaptive Mindset which has a high significance level at 99%.

The figure shows that the three Leadership practices are around 2.5 in HD projects but vary considerably in reference projects from 1.2 to 3.23 in Collaborative Leadership, which

has the smallest difference at 17%. The largest difference is 98% for the Reflective and Adaptive Mindset, which is almost never applied in reference projects. A possible explanation is a low project management maturity, meaning that the absence of formal project management standards or methodologies makes it impossible to adapt or deviate from them – according to reflections on what makes sense in the project here and now.

Two Leadership practices had negative differences that were positive although insignificant and small in all companies (see chapter 3). This indicates that in SMEs, project leaders are very collaborative and project owners are very active. A plausible explanation is that project leaders and owners are often close to or part of the company management and, therefore, are extremely committed, holistically oriented, and concerned about relationships between people in different business units.
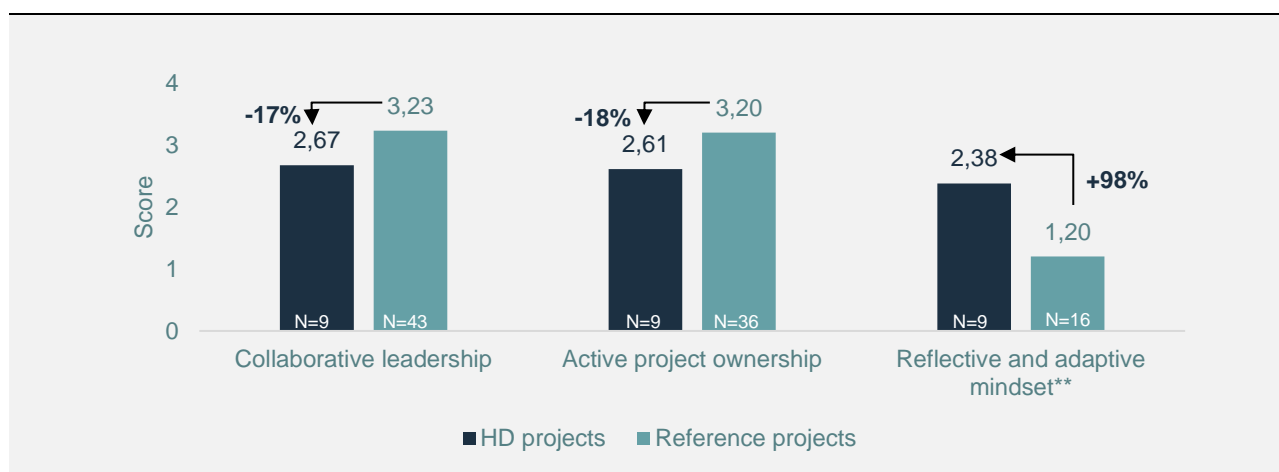
FIGURE 6.3: COMPARISON OF MEAN SCORES FOR LEADERSHIP PRACTICES IN SMALL- AND MEDIUM-SIZED ENTERPRISES

6.2.4 Three core elements in small- and medium-sized enterprises

The mean scores for HD and reference projects on the three core elements in the HDM are summarized in figure 6.4.

The data reveals that there is a difference between the applications of the HDM practices in each of the three core elements, although with varying degrees and levels of significance and also with opposite signs.

*indicates that the difference in mean values for HD projects and reference projects is significant at a level of 99% (α = 0.01).
**indicates that the difference in mean values for HD projects and reference projects is significant at a level of 99% (α = 0.01).

FIGURE 6.4: COMPARISON OF MEAN VALUES FOR IMPACT, FLOW, AND LEADERSHIP IN SMALL- AND MEDIUM-SIZED ENTERPRISES

The largest and the only significant difference between HD projects and reference projects is found in the Flow element, which is used 25% more in HD projects compared to reference projects.

The smallest difference, which is also insignificant and with the opposite sign, is found in the Leadership element, which is used 14% less in HD projects compared to reference projects.

Among the HD projects, the most applied element is Flow, whereas the least applied element is Impact with a score at 2.5.

Figure 6.5 lists all the HDM practices sorted according to their percentage difference between HD and reference projects.

*indicates that the difference in mean values for HD projects and reference projects is significant at a level of 95% ($\alpha = 0.05$).
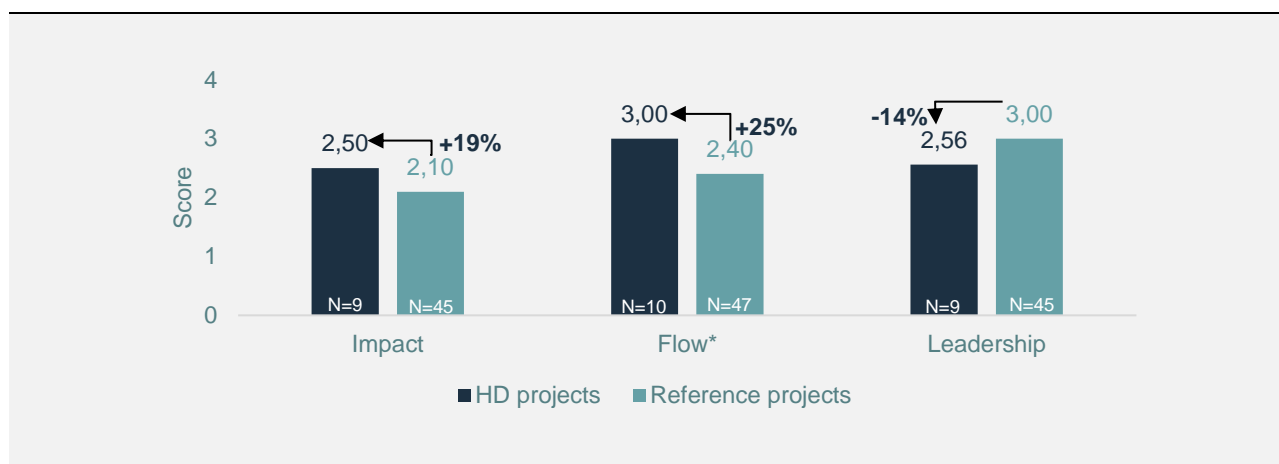**indicates that the difference in mean values for HD projects and reference projects is significant at a level of 99% ($\alpha = 0.01$).
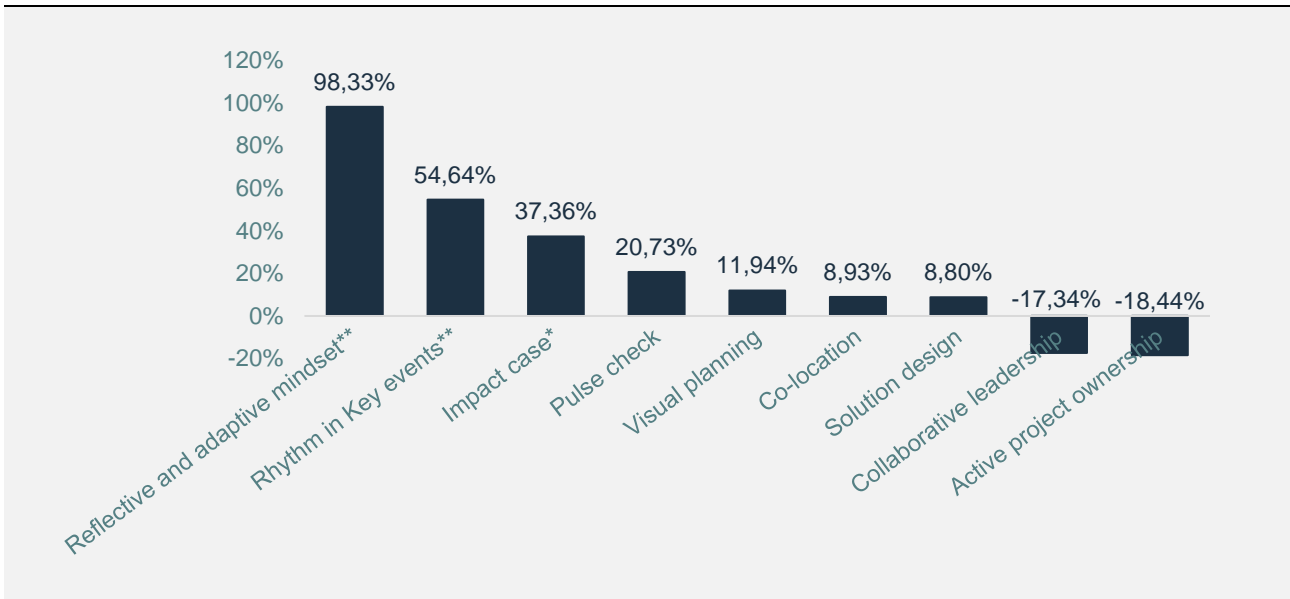
FIGURE 6.5: COMPARISON OF MEAN SCORES FOR ALL PRACTICES BY DIFFERENCE IN SMALL- AND MEDIUM-SIZED ENTERPRISES

Altogether, the figure shows that practices in HD projects are different from reference projects as well as that the difference varies in degree, significance, and operational sign.

The three practices with the highest and most significant differences are Reflective and Adaptive Mindset, Rhythm in Key Events and Impact Case, which represent all three of the core elements: Impact, Leadership, and Flow. These three practices are also the ones with the highest and most significant differences among all enterprises (see chapter 3).

At the other end of the scale are the two Leadership practices that are used more in reference projects than in HD projects: Active Projects Ownership and Collaborative Leadership.

In SMEs, the hypothesis is confirmed with significant levels between 95% and 99% only by three practices. Four practices show positive differences as expected, but they are rather small and insignificant. Two practices show an opposite difference than expected and do not confirm the hypothesis. The relatively low number of 10 SME HD projects means data is limited and conclusions are uncertain.

This is a different result compared to the analysis of all enterprises, which had seven significant practice differences, only two insignificant differences, and no negative differences. However, the SME part of this study is based on 10 HD projects, which is limited data.

6.2.5 Practice application in small- and medium-sized enterprises

The last figure 6.6 provides an overview of the nine HDM practices sorted according to their application only in the SME HD projects.
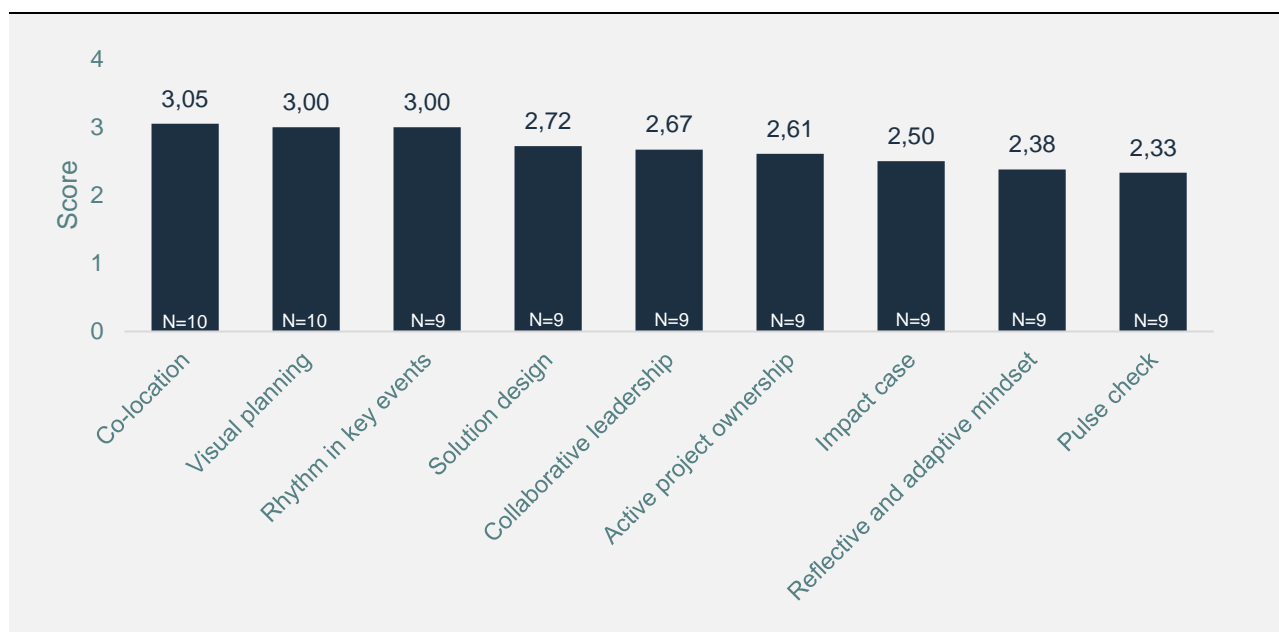
FIGURE 6.6: PRACTICE MEAN SCORES FOR HALF DOUBLE PROJECTS BY APPLICATION IN SMALL- AND MEDIUM-SIZED ENTERPRISES

Considering only the HD projects, the most applied practices are the three Flow practices of i) Co-Location, ii) Visual Planning, and iii) Rhythm in Key Events. These top three are the same for all organizations (see chapter 3) and indicate that the Flow element is also perceived useful and relatively unproblematic to implement in SMEs.

The least applied practices are the Impact practices of i) Pulse Check and ii) Impact Case and the Leadership practice iii) Reflective and Adaptive Mindset. These three practices are also identical in the practice evaluation of all organizations (see chapter 3) and indicate that they are also not as easy to implement in SMEs. This is interesting given the overall ambition of the HDM.

The analysis naturally leads to pondering the reasons behind controversies and differences in application intensity across practices and projects and also in SMEs. While such reasons can be many and would be interesting to further explore, explanatory analyses are beyond the scope of this chapter.

6.3 Are Half Double projects successful in small- and medium-sized enterprises?

For a definition and operationalization of the success term, please see section 1 in chapter 4 on success.

The overall distribution of absolute and relative success among the ten SME HD projects are visualized in the three diagrams in figure 6.7.

6.3.1 Absolute success in small- and medium-sized enterprises

Absolute success is analyzed in terms of initial success criteria achievement, which is also known as evaluation by objectives (Dahler-Larsen 2013).

In total, the analysis is based on a dataset of 10 HD projects from nine SMEs. Although PHD covers more SME projects, data on success is limited and only available in 10 of these projects.

Absolute success evaluations are conducted on all 10 SME HD projects. Nine of these fulfill all or most of their success criteria to a high

degree. This is a high success rate considering the diversity in the application of knowledge on projects and project management among SMEs (Vestgaard et al. 2018). One project fulfills some of its success criteria to a medium degree and no projects fulfill few or none of their success criteria to a low degree in SMEs. This yields a low failure rate of 0%. This absolute success evaluation is a positive indicator that most of the projects applying the HDM succeed in fulfilling their goals. However, the dataset is limited and only represents 10 HD projects. Thus, we can in no way generalize or claim that the HDM is beneficial in most SMEs. Such an objective-based evaluation (Dahler-Larsen 2013) can also mean that the initial goals set for the HD projects are low and not ambitious enough (Christensen and Kreiner 1991). We do not have sufficient insight to conclude on the level of ambition for the HD projects. But we can ascertain that the HD projects are significant. They are important projects that were set to

make a positive difference for the host organizations. It is not our impression that the goals of the HD projects were unambitious but rather were thoroughly considered and systematically worked through with inspiration from the HDM. In that light, the success and failure evaluations are positive indicators of the HDM making a positive difference in the ability of SME projects to meet their goals.

Comparing this SME analysis with the evaluations of success in all HD projects, it is noteworthy that the success rate is higher, and the failure rate is lower in SME HD projects than in all HD projects (see chapter 4). This indicates that the HDM might make a positive difference in SMEs. The findings should, however, be interpreted with the notion in mind that success rates in general are higher in smaller projects because they are often less complicated, less risky, and less demanding compared to larger projects (Johnson 2022).
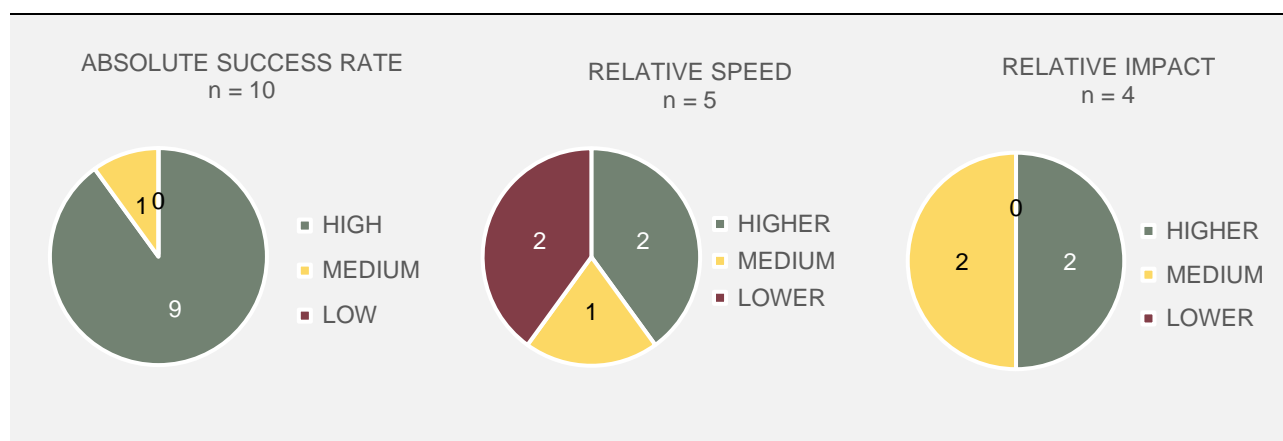
FIGURE 6.7: HALF DOUBLE PROJECT SUCCESS

6.3.2 Relative success in small- and medium-sized enterprises

Relative success is evaluated in terms of speed and impact, which is referred to as an evaluation of project management success or

efficiency and projects success or effectiveness (Zidane and Olsson 2017, Haass and Guzman 2019, Rode 2023).

Relative speed, indicative of project management success, is evaluated in five of the 10 HD projects, with a lack of data in five cases. Two of the HD projects have a shorter duration and are completed at a faster speed compared to

their reference projects. One of the HD projects has a duration similar to its reference projects and is conducted at medium speed. Two of the HD projects have a longer duration and are conducted at a slower speed compared to their reference projects. Because this distribution is relatively equal and the dataset is relatively small, it is difficult to conclude anything regarding speed in SME projects.

Compared to the success evaluations of all projects, the SME picture is less positive and more uncertain (see chapter 4).

Relative impact, indicative of project success, is evaluated in four of the ten HD projects, with a lack of data in six cases. Two of these four HD projects have a higher impact compared to their reference projects. The other two projects have a medium impact similar to their reference projects. No SME projects have a lower impact compared to reference projects. This distribution is slightly more positive than the speed results, but the dataset is even smaller and, therefore, it is difficult to conclude anything regarding impact in SME projects.

Compared to the success evaluations of all projects, the SME picture is slightly more positive but also more uncertain.

Key questions for reflection

1. What are your experiences with projects and project management in SMEs?
2. How would you describe projects and project management in SMEs?
3. What do you consider specific challenges and opportunities for projects and project management in SMEs?
4. Do you think projects and project management have higher success rates in SMEs compared to large enterprises?
5. What do you think are the best project management practices in SMEs?

7. Does Half Double diffuse?

By Anna Le Gerstrøm Rode (Aarhus University)

Much literature is written on the diffusion (Zeitz et al. 1999) of new management ideas and innovations (Birkinshaw et al. 2008) like the HDM. Several things can be learned from studying processes and results of the HDM diffusion (Jensby et al. 2021, Rode and Svejvig 2021, Jensby et al. 2022). It is beyond the scope of this chapter to provide a full and final list of diffusion drivers and barriers. Instead, the chapter takes a point of departure from reflective practitioners (Crawford et al. 2006) interested in spreading knowledge about the HDM as a potential methodology.

The chapter aims to equip reflective practitioners with knowledge on some of the general enablers and constrainers of diffusion as well as to provide concrete suggestions for how to approach diffusion within or across their own organizations.

The chapter is structured in two sections. The first provides a table of diffusion enablers and constrainers. The second provides a list of suggestions for how to explore diffusion opportunities in local environments.

7.1   Drivers and barriers to diffusion

Table 7.1 summarizes a selection of relevant elements that can both enable and constrain HDM diffusion. As such, each element plays a role in how the HDM travels within and between organizations, industries, sectors, and regions. Reflective practitioners can use the table as a frame of reference for exploring HDM diffusion possibilities within or across their own organizations by mirroring the general elements with circumstances in their local environments to better understand specific drivers and barriers at play at home.

#	DIFFUSION ELEMENT	ENABLER	CONSTRAINER
1	**Knowledge dissemination** *Awareness of the existence of the HDM as well as its features, for instance, through written publications or oral presentations.*	Available and considered	Unavailable or un-considered
2	**Change agents** *Availability and usage of internal and external change agents, such as the HD Institute, training organizations, consultants, experts, opinion leaders, champions, and influencers.*	Available and used	Unavailable or un-used
3	**Pilot project performance** *Performance evaluations of processes and practices as well as output, outcome, and impact; also lessons learned from the first projects applying the HDM.*	High/success	Low/failure
4	**User experiences** *First hand experiences with HDM implementation, including perceived applicability and usefulness.*	Easy implementation/ beneficial tools	Problematic implementation/ detrimental tools
5	**Shared stories** *The nature and number of HDM narratives circulating in and across organizations.*	Shared, positive and present	Fragmented, negative or absent
6	**Investments** *The persistence as well as the time, money, and energy dedicated to implementing the HDM, for instance, through external expertise and internal competence development such as training and certification.*	Major	Minor
7	**Employees' attitudes and abilities** *Internal HDM bottom-up support through practitioners' interest, motivation, and capabilities.*	Positive and high	Negative or low
8	**Management's awareness and acceptance** *Internal HDM top-down support through executives' appraisal and endorsement.*	Attentive and positive	Inattentive or negative
9	**Political priorities** *Alignment between the HDM and political agendas as well as formal and informal power structures and positions in social networks and dominant coalitions.*	Fit	Misfit
10	**Cultural norms** *Alignment between the HDM and cultural assumptions, values, and artefacts dominating official and unofficial social structures.*	Fit	Misfit
11	**Local adjustment** *The balance between adopting the HDM exactly as it is intended to reach the full potential of its synergies or adapting the HDM in a translated version fitting the local context and characteristics.*	Balancing adoption and adaption	Unbalancing too much or too little adoption and adaption
12	**Project management professionalism** *Too little professionalism makes it difficult to implement the HDM, which presumes a certain level of professionalism; but too much maturity risks hindering experiments with alternative approaches such as the HDM.*	Medium maturity	Too high or too low maturity
13	**Perspectives on alternatives** *Perceptions of the HDM as a competing or complementary approach to already established standards or predominant ways of practicing project management.*	Complementary	Competing

TABLE 7.1: ENABLERS AND CONSTRAINERS OF HDM DIFFUSION

7.2   Diffusion considerations

The list of elements that can both enable and constrain HDM diffusion, presented in table 7.1, is long and comprehensive, but it is not exclusive - meaning there are a myriad of elements, and many are not included in the table. The 13 elements are selected with the reader of this report in mind. Reflective practitioners interested in diffusing the HDM in projects, programs, or portfolios can mirror each of the

elements in their own organizations to create a picture of the current situation at home: whether local conditions are welcoming and supportive or incompatible and hostile towards the HDM.

As the elements are dynamic and subject to constant change, the situation is never static. Some conditions can be altered and will change because of deliberate initiatives. Other elements are deeply rooted and grounded in stabilizing structures that are difficult to influence.

Notwithstanding the situation at hand, reflective practitioners can spark curiosity.

One way to start or sustain HDM diffusion is by creating a joint room for reflection, for instance, through a knowledge sharing forum that can facilitate a discussion of how the HDM matches local challenges and potentials and an analysis of fits and misfits as well as possibilities of adapting the HDM or altering local circumstances.

A way to get more concrete knowledge on the benefits or lack of benefits of the HDM in local contexts is to try it in one or more pilot projects and evaluate project processes and outcomes as well as things learned from several stakeholder perspectives.

A final option is to share HDM user stories and experiences of what worked well but also what could be improved.

Of most importance is to stay reflective toward your own practices and established ways of doing projects.

Key questions for reflection

1. What are the project management standards, certifications, or methodologies circulating within your organization?
2. What are the primary reasons the HDM has or has not diffused within your organization?
3. Why is project management practiced the way it is within your organization?
4. How do you get inspiration on alternative project management practices or approaches?
5. Are you interested in experimenting with different project management practices or approaches?
6. Is there a willingness to experiment with different project management practices or approaches within your organization?
7. Do you evaluate the usefulness of your current project management practices or approaches?
8. What are important criteria for the applicability of your approach to project management?
9. What opportunities does the HD ecosystem offer your team, department, unit, or organization?

8. The Half Double Future

By Anna Le Gerstrøm Rode and Per Svejvig (Aarhus University)

The ambition of this final chapter is to take a look at plausible futures of the Half Double Methodology (HDM) and Half Double Institute (HDI).

The chapter is structured into five sections, with the first presenting Inayaullah's (2008) futures triangle, which sets the directions for the following four sections and the summary in the last section.

8.1 Presenting the futures triangle

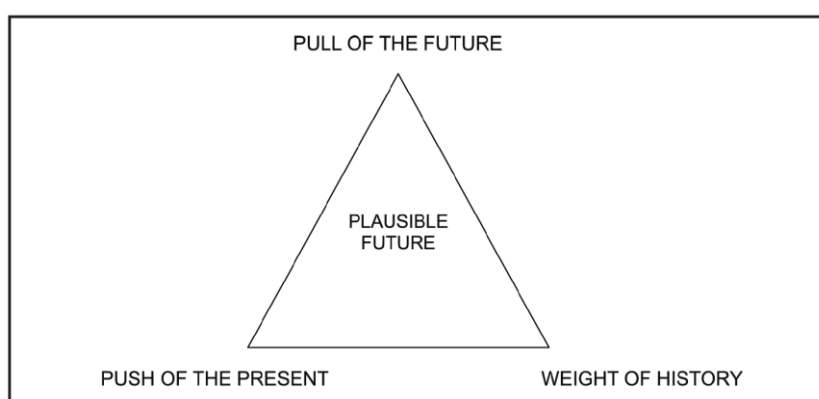Figure 8.1 below presents Inayatullah's (2008) Futures Triangle.

FIGURE 8.1: THE FUTURES TRIANGLE

The triangle shows how a *plausible future* depends on the interaction between three forces.

The *push of the present* is an extant driver and trend that changes the future. Initially, these have no positive or negative nature. They are objective and fact-based circumstances: trends that can have positive and negative consequences (often they have both).

The *weight of history* is past events and experiences that precondition the future. Initially, the past is formulated in a negative sense as the *barrier to the change we wish to see.* In that sense, history has a rather hindering connotation, dragging down dreams and drivers for a preferable future. In this chapter, we give history another constructive meaning and present the learnings and experiences that can serve as building blocks for the positive future of the HDM we want to create.

The *pull of the future* is prospective images and scenarios that produce the future. Initially, these are presented as an overarching belief or underlying assumption about the future. In this chapter, we deliberately construct a positive image of the future for the HDM.

Together, these three forces interact to construct the *plausible future* of HDM.

8.2 Push of the present

The following section takes a point of departure in mega trends and grand challenges from a national and international perspective to present some of the drivers that push the present.

Trend #1: Climate change is one of the largest global challenges. It is impossible to meet the United Nations' ambitions on Development Goal #13 *climate action* or the maximum global temperature increase of 1.5°C unless research, innovation, and development efforts

are accelerated – dramatically. Global greenhouse gas emissions need to decrease by 43% by 2030 (UN 2022). However, current climate action is elusive (PMI 2022) and national commitments point to a nearly 14% increase by 2030 (UN 2022). New laws and regulations follow in the wake of the depressing numbers. Examples include the European Green Deal and the EU Climate Law, including its Investment Plan that strives to transform EU society into the first climate-neutral continent where economic growth is decoupled from resource use and there is no net emission of greenhouse gases by 2050. Recently, the European Parliament imposed a Corporate Sustainable Reporting Directive that forces around 50,000 companies to disclose data on the consequences of their activities on the planet and its people (European Commision 2023). In a Danish context, this means that from 2024, all large and listed companies are obliged to report on a long list of sustainable climate measures (DK 2023). The directive is complex and comprehensive and possibly one of the biggest interventions in reporting rules, putting organizations and their value chains under significant pressure. Moving forward, rethinking business and climate together is necessary (IF 2023) and integrating sustainable climate practices into every project is crucial (PMI 2022).

Trend #2: Inclusion is necessary. Demographic changes caused by decreasing fertility rates and increasing aging with a substantial part of the population living longer create a double challenge in increasing demands for products and services and decreasing the supply of labor. The demand for goods is further intensified by the increasing wealth – especially in the East**.** On top of the changing economy and demography, the COVID-19 pandemic started a social movement referred to as the great resignation, implying that around 20 million fewer people work now compared to the pre-pandemic period (PMI 2022).

Even though companies have reformed their work cultures and structures, millions of positions remain unfilled. By 2030, around 25 million new project professionals will be needed (PMI 2022). One way to solve the shortcoming in labor supply is to make the labor market more inclusive as well as diverse and equal across gender, ethnicity, and health. Numerous studies show the importance of inclusive initiatives for business success, and little doubt remains that diversity is a profitable business case. Despite these material reasons as well as ethical arguments for equal rights and opportunities, the United Nations' ambitions on Sustainability Goals #5 *gender equality* are not yet met. Many women and ethnic minorities are unemployed (UN 2022), underpaid, or underrepresented in the hierarchal top layers of organizations (IF 2023). New hope comes with the European Union's Corporate Sustainable Reporting Directive enforcing several thousands of organizations to report on their social sustainability measures – including diversity (European Commision 2023). Companies that will and can handle a disproportionate marginalization of the many people who can and will work will have an advantage in the future.

Trend #3: Technology is developing at an unforeseen pace. New technologies are introduced before old ones are implemented (PMI 2022). Technology is creating new business opportunities but also disrupting and even killing business models and companies (DK 2023, IF 2023)**.** New products and services are rapidly developed, marketed, and sold to make life better – sometimes with unintended and unforeseen consequences. Technology infiltrates all areas of life. One of the major issues in terms of technology is power: Who determines the future and our everyday lives? The risk is that new technological features are developed in the interests of a minority of people but with consequences for the majority. Regulation is constantly behind as pioneering

technological developments oftentimes leap the imagination. Issues related to data also follow technological developments: Who is entitled to collect what from whom and how is data stored, used, transferred, and deleted? The European Union enforced the General Data Protection Regulation (EU 2016) in 2018 upon all companies operating in the EU, wherever they are based, to protect citizens and ensure fair competition between companies. The regulation forced massive changes in the way companies collect and handle data. Despite such protective innervations, technological advancement continues to push the regulative agenda, not just in the EU but also in the U.S. and China. Hence, companies can expect a future with many technological opportunities, regulations, and threats – and they need to adapt. In the future, national and international actors ought to prioritize investments in data and information infrastructure (UN 2022).

Trend #4: Security needs higher priority in the future. Following technological development, security for individuals, organizations, and nations is put at risk. Hacking attacks on private and public companies as well as state authorities are becoming more common, and they force protective action. Cybersecurity becomes increasingly important (IF 2023) and needs to be approached with heightened diligence (PMI 2022). One example of high security priority is the 2023 update of the EU cybersecurity rules from 2016 named the Network and Information Security 2 Directive, which was created to ensure a high common level of cybersecurity across the EU (European Commision 2023). Some foresee a technological cold war between East and West (DK 2023) in which data is central and the winner is technologically superior. The invasion of Ukraine has intensified global instability and created one of the largest refugee crises of modern time (UN 2022). Beyond that, a record 100 million people have been forcibly displaced worldwide and one-quarter of the

global population lives in conflict-affected countries. As war and geopolitical power struggles intensify, order is destabilized, and democracy is put at risk.

Trend #5: Internationalization needs, opportunities, and risks change. On top of the pandemic caused by COVID-19, the Russian invasion followed by a geopolitical polarization put years of increasing globalization into a new perspective (UN 2022, DK 2023). Rethinking globalization means the relevance of much experience in cross-border growth needs to be redefined. National supply chains that can adapt to local and changing contexts and ensure quick and timely delivery of suddenly needed products and services become advantageous. But rebuilding domestic supply chains is not an easy undertaking and pullbacks are not necessarily permanent (PMI 2022). Moreover, at a time of international crisis, the need to make partnerships and allies around the world is rising. Given all the other challenges facing current and future generations, international knowledge sharing is important. Denmark is a leading knowledge hub in several areas (DK 2023), including sustainability and digitalization (IF 2023). Export of Danish expertise can benefit other societies and boost the global collaboration that is needed to solve many of the grand challenges and make the world a better place. In the future, companies need to balance the difficult act of expanding collaborations into new territories while at the same time making sure not to compromise national priorities.

8.3   Weight of History
On a much smaller scale, HD projects have attacked some of these grand challenges and many more. More than 1,000 people have been certified in HDM, over 100 projects have been evaluated, and more than 200 individuals have given input to the HD inquiry. We have learned that there is no simple answer or

"one size fits all" solution to project management problems. But we have also learned that HDM can make a positive difference across a variety of different projects and organizational contexts. In most cases, it has been a good solution to a practical problem; and in some cases, it has also been a better solution. Of the HD projects (applying the HDM), 74% fulfill all or most of their success criteria; 48% are more efficient (higher speed); and 40% are more effective (higher impact) compared to their reference projects that did not apply the HDM (see chapter 4). Many reflective practitioners have shared their user experiences and lessons learned, and a constantly increasing number of practitioners learn and apply the HDM. The HDM has come to be shown as a beneficial tool for strategy implementation: for helping realize visions, and missions, and must-win battles through projects. As such, it has proven a beneficial booster of organizations' much-needed innovation and development muscle. This is the ground on which we stand when looking into the future.

8.4   Pull of the Future

Many wishes and hopes for the future of HDM and HDI exist. Some of these also materialize into visions, missions, strategies, and plans, for both the methodology and for the institute.

What follows is a brief list of the pull of the future for HDM and HDI:

- HDI was formally established as an association in 2021 and the two following years have been used to organize HDI. There is still a way to go to have a sustainable business model for HDI, and this is a pressing need in the future.

- HDM is starting to become well institutionalized in Denmark with several accredited training partners, many HDM certifications, and cases showing how HDM can solve business problems, becoming a robust ecosystem, but this must be maintained and much further developed.

- HDM has gained traction, especially in Denmark, but also in Norway and sporadically in other countries, but a diffusion far beyond the current areas is needed if HDM is to be a relevant methodology in the future

- The Half Double ecosystem needs to be nurtured and developed in the future to create a sustainable business model for the HDI.

This calls for several specific initiatives to continue developing HDM and HDI, including the ecosystem, which will be discussed in the next section.

8.5   Plausible future

Several initiatives are mentioned here to create a beneficial and plausible future:

Initiative #1 Accelerated Innovation. HDM is built on the premise of increasing the development speed of new products and services (Rode and Svejvig 2021). The focus has been on accelerating time to impact at a project level (Svejvig et al. 2019). This focus is on project levels that must be maintained but must also be expanded with accelerated innovative thinking at a strategic management level, including project portfolio management.

- Initiative #1.1 Develop strategic management thinking about accelerated innovation to be used in strategy discussions.

- Initiative #1.2 Develop accelerated innovation methodologies to be used at the project portfolio level as well as platforms.

Initiative #2 Coexistence with other standards and methodologies. HDM is well suited to integrate and coexist with other standards

and methodologies, and several coexistence documents have been developed with IPMA, PRINCE2, SAFE, SCRUM, and PMI (Half Double Institute 2023).

- Initiative #2.1 HDM sustainability should be established by coexistence with Green Project Management (GPM Global 2023) and/or Responsible Project Management (RPM 2023).

- Initiative #2.2 Develop Corporate Sustainability Reporting Directive (European Commision 2023) coexistence.

- Initiative #2.3 Investigate other standards for coexistence development. There might be many relevant areas for developing coexistence in which HDM is seen as a booster.

Initiative #3 Develop new cases using HDM in a broad sense. The HD database is quite comprehensive and includes private and public organizations of various sizes and from different industries as well as different project types of varying size and scale (see chapter five), but it needs to be extended in various ways. For example:

- Initiative #3.1 Develop cases to show in more detail coexistence with other standards and methodologies to demonstrate how coexistence can work in practice.

- Initiative #3.2 Develop cases for major and megaprojects. To solve grand challenges, major and megaprojects are needed. These can be solved by a precise combination of many standards and methodologies, and here there is a need for cases that describe how they can be implemented.

- Initiative #3.3 Develop cases working with accelerated innovations at the strategic management level and project portfolio management level.

Initiative #4 Next version of HDM at project, portfolio, and strategic management levels. The current version of HDM at the project and portfolio level needs to be adapted to future needs.

- Initiative #4.1 Develop a HDM light version specifically targeted at the SME segment. SME HD projects have applied several of the HDM practices, and nine out of ten HD projects have a high success rate. Thus, the potential to extend HDM diffusion, evaluation, and collaboration with relevant partners should be considered.

- Initiative #4.2 Develop the next version of the HDM. All standards need to develop to adapt to the rapidly changing business and societal landscape. And so does the HDM.

- Initiative #4.3 Develop HDM at the portfolio and strategic management level as a separate methodology integrative with the HDM for projects. Some initial thoughts about the portfolio level have been established but it needs to develop and mature further.

- Initiative #4.4 Develop the HDI concerning global diffusion, partnering, and certification. The goal is to have a sustainable business model for HDI, and this calls for many activities at the broader scale for diffusion and institutionalization of HDI.

The trends and initiatives that have been identified are linked to each other as shown in Table 8.1.

		Push of the present						
		Trend #1 Climate	Trend #2 Inclusion	Trend #3 Technology	Trend #4 Security	Trend #5 Internationalization	Pull of the future	Weight of history
Initiative #1 Accelerated Innovation								
1.1	Develop strategic management thinking about accelerated innovation	●	●	●	●	●	●	●
1.2	Develop accelerated innovation methodologies	●	●	●	●	●	●	●
Initiative #2 Coexistence with other standards and methodologies								
2.1	Green Project Management (and/or Responsible Project Management)	●	●				●	●
2.2	Corporate Sustainability Reporting Directive	●			●		●	●
2.3	Investigate other standards for coexistence development	●	●	●	●	●	●	●
Initiative #3 Develop new cases using HDM in a broad sense								
3.1	Develop cases for the coexistence with other standards and methodologies	●	●	●	●	●	●	●
3.2	Develop cases for major and megaprojects	●	●		●			
3.3	Develop cases working with accelerated innovations at the strategic management level and project portfolio management level	●	●	●	●	●	●	●
Initiative #4 Next version of HDM at the project, portfolio, and strategic management levels								
4.1	Develop an HDM light version specifically targeted at the SME segment						●	●
4.2	Develop HDM version 2	●	●	●	●	●	●	●
4.3	Develop HDM at the portfolio and strategic management levels	●	●	●	●	●	●	●
4.4	Develop HDI concerning global diffusion, partnering, and certification						●	●

TABLE 8.1: PLAUSIBLE HALF DOUBLE FUTURE INITIATIVES

Table 8.1 expresses a long wish list, and of course, there is a need for a concrete assessment of what needs to be prioritized in what order.

9. Conclusion

By Anna Le Gerstrøm Rode & Per Svejvig (Aarhus University)

It is now a decade ago that a group of dedicated project practitioners gathered: united by dissatisfaction over project failure but also by hope for improvement and with ambition to act. Eight years have passed since the formal launch of the first phase of Project Half Double (PHD) in June 2015. and the journey is now approaching the final stage of Phase 3 in 2023.

The purpose of this report was to describe and present the evaluation of PHD as it reaches the end of phase 3 in 2023 and consolidating across phases 1, 2, and 3, which took place in the period 2015–2023.

If we look back at PHD phase 1 and phase 2, the objective was: "To define a project methodology that can increase the success rate of projects while increasing the development speed of new products and services." We concluded that applying the Half Double Methodology (HDM) can lead to an apparently higher impact from the Half Double (HD) projects compared to comparable reference projects in the same organization (Rode et al. 2019a) as well as promising figures for success and failure rates of HD projects. The evaluation from 2019 on phase 1 and phase 2 has generally been confirmed, although specific numbers may have changed in an upward or downward direction because of a greater volume of data on projects.

The objective with phase 3 was: "To diffuse and broaden Half Double to a number of small- and medium-sized organizations to reach a tipping point, thus creating a sustainable business model in which the concept of Half Double can continue as a self-sustaining and independent entity." The first goal to diffuse and broaden HDM to SME's has been achieved, although we also see challenges. Most importantly, this report shows that using HDM in SME's appears to be more successful than using HDM in large enterprises, although findings are based on relatively few HD projects. The second goal with an independent Half Double Institute (HDI) is partially fulfilled as the HDI is operational but is not yet a self-sustaining and independent entity.

An overall assessment across phases 1, 2 and 3 indicates that we have come a long way in terms of meeting the overall objectives. The overall process delivered over eight years not only shows that a complete ecosystem is building up (see Figure 2.1) but also that the institutionalization is a long-term goal that requires effort for perhaps 10–15 years and that there is great complexity in building such an ecosystem.

Appendix A: Half Double Methodology

By Gerd Helena Vinding & Michael Ehlers (Implement Consulting Group)

This section presents the Half Double Methodology (HDM) as it looks by the end of the third phase of the Half Double journey. The HDM is presented in Figure A.1. HDM is a project management methodology that demands a strong focus on three core elements, which in combination, reduce time to impact, keep the project in motion, and promote the leadership of people rather than the management of technical deliverables. Each core element puts forward a principle – a non-negotiable standard – for how we are to lead our projects. Each principle is directly linked to a method – a proposed approach, procedure, or process – for bringing the principles to life in practice. Each method is supported by a tool – a specific instrument – aimed at easing implementation. Bear in mind that we emphasize the evolving nature of the concept as the methodology is in continuous development; it is never set in stone. Rather, it is constantly inspired by and adapted to new insights and learning from practice and from our community of engaged project practitioners. The concept takes us from the core – the non-negotiable principles we bring into all projects – to the localization where we adapt the methods and tools to fit local cultures and practices. The further we move away from the core elements and into the outer circles, the more flexible we become in terms of which methods and tools to apply. Each of the core elements are elaborated on in the three sections that follow.

From focus on triple constraint to focus on impact

With HDM, we argue that projects are not delivery machines, but endeavors set in motion to leave a lasting footprint in the world. The deliverables are not the end goal but merely milestones on the road toward impact realization. The HDM puts forward a change of emphasis from deliverables specified to perfection in a fixed contract to impact; from only focusing on the cost side of the business case to following up on and tracking revenue or other value creation. The core idea is to continuously take home the winnings throughout the project, thereby reducing the time to impact and boosting the overall effect, sense of achievement, and stakeholder satisfaction.

From resource optimization to flow optimization

Projects are not just random tasks but demanding efforts in need of focus and energy. The work to be done is often unique in character and requires creativity, collaboration, and rapid feedback loops. The people involved and their sense of progress benefit from uninterrupted reflection and action. With HD, we acknowledge the demanding nature of projects. Flow functions like an engine, providing the power to drive and realize the desired impact. We prioritize the project's speed and progression. Rather than scattering resources across the portfolio, the right people are carefully selected and heavily allocated to allow for and ensure focus, intensity, and frequent stakeholder interaction.

From management of systems to leadership of people

Rather than merely viewing projects as carefully planned efforts set in motion to achieve a particular aim, we view projects as temporary organizations comprised of people; people with shifting agendas, motivational drivers, and preferences; individuals with unique needs who operate in a highly unpredictable world. The project – like any other organizational unit – therefore requires leadership that embraces uncertainty while still ensuring alignment and progress. The HDM proposes a shift from a contract approach to a trust approach; from compliance to commitment; from viewing change as a cause of frustration to embracing it as an opportunity. And because we work in a world with easy access to infinite knowledge and highly trained employees, we need to shift from control to facilitation, involvement, and ownership.
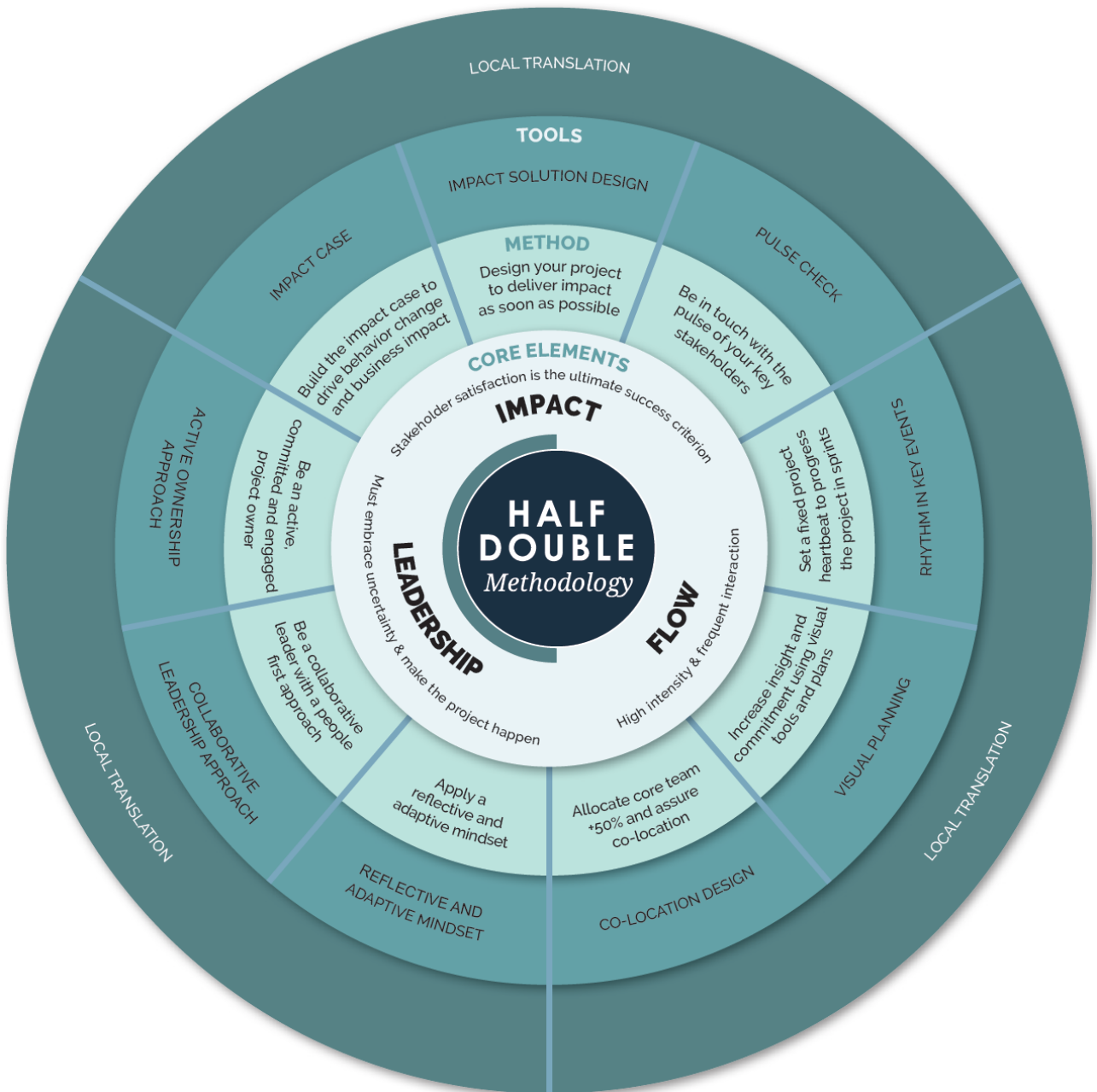
FIGURE A.1: THE HALF DOUBLE METHODOLOGY

A more in-depth understanding of the HDM and examples of how it has been translated into practice are available in the Half Double Methodology Pocketbook which can be freely downloaded from the Half Double Institute homepage (www.halfdoubleinstitute.org) and found in the Half Double Methodology Handbook (Olsson et al. 2018).

Appendix B: Research Methodology

By Per Svejvig (Aarhus University)

Research Design

Project Half Double (PHD) has an engaged scholarship approach (Van de Ven 2007) and uses action design research (ADR) (Sein et al. 2011) which has elements of action research (interventions) and design research (artifacts; (Goldkuhl 2012).

The ADR methodology implies close collaboration between practitioners, consultants, and researchers to design, intervene, and evaluate (Sein et al. 2011). Some of these activities are briefly presented in chapter 2, "Telling the Half Double Story," and show that many stakeholders are involved in PHD from industry, consultancy companies, and universities.

PHD has designed two primary artifacts: (1) The Half Double Methodology (HDM), mainly designed by consultants but co-created with practitioners and researchers (Olsson et al. 2018) and (2) The Project Evaluation Framework, which was designed by researchers and adapted throughout the project (Svejvig and Hedegaard 2016, Rode et al. 2022). HDM is used by practitioners and consultants to execute projects in organizations, while the researchers are using the project evaluation framework to evaluate HDM.

The study can be divided into two overlapping cycles, the problem-solving cycle and the research cycle (Mathiassen et al. 2012). The problem-solving cycle is driven by practitioners and consultants, and the research cycle by researchers, but the two cycles are highly intertwined and interdependent.

We use a mixed method approach (Tashakkori and Teddlie 1998, Cameron et al. 2015) that combines qualitative and quantitative data, and we have a pragmatist philosophy (Biesta 2010, Goldkuhl 2012).

Data Collection and Data Analysis

Data generation applies a variety of research methods, such as interviews, focus group meetings, surveys, workshops, participant observations, and review meetings. Project documentation, presentations, governance documentation, company information, and emails as well as public information are used. We deliberately label it data generation and not data collection because much data is constructed and co-created in a dialogue between practitioners, consultants, and researchers, so we as researchers are part of the field we study. We have a focus on problems, practices, and relevance and do value-driven research (Saunders et al. 2016: 137) to make it useful for both practice and academia.

Data analysis includes mixed methods analysis in which we combine qualitative and quantitative data. We apply different kinds of qualitative analysis, such as thematic analysis (Braun and Clarke 2006), qualitative comparative analysis (Rihoux and Ragin 2009), pattern analysis (Yin 2014), and theory building from cases (Eisenhardt and Graebner 2007). This is complemented by quantitative data analyses covering univariate and multivariate analysis (Bryman 2012, Tabachnick and Fidell 2018) for descriptive statistics, regression analysis, etc.

The research approaches vary throughout the process and are both inductive, adductive, and deductive (Saunders et al. 2016: 144-150). However, most of the research behind the work published in this report is deductive as most of the data is generated and analyzed based on already existing theories and concepts. This has been complemented with inductive research in smaller parts of the study.

Evaluation of research

This study is a combination of action design research (Sein et al. 2011) and mixed methods (Tashakkori and Teddlie 1998). Evaluation criteria can thus be retrieved from action research (Eden and Huxham 1996), design research (Hevner et al. 2004), and, finally, mixed methods (Leech et al. 2010). It is out of scope for this report and at the same time very comprehensive to systematically evaluate the individual criteria, but instead, a few have been selected that can advantageously be made explicit.

The axiology used in this research is value-driven in contrast to value-free research (Saunders et al. 2016). Martela (2015: 19) highlighted that values and interests should be disclosed when you are doing value-driven research. We take a managerial perspective in our research with a positive mindset of introducing the HDM in organizations. Our pursuit is to combine it with a critical and reflective mindset, but we must acknowledge that we could have taken a more critical view.

The validity of our research, understood as confidence in our results (Schwandt 2007: 309), is of key concern and relevance. First of all, triangulation has been widely used; for example, by combining qualitative methods with quantitative methods, which adds "*depth, breadth, complexity and richness*" (Saunders et al. 2016: 207), and interviewing several people on the same subject. We have furthermore focused on rigorous descriptions of research protocols (interview guides, interview presentations, standardized internal reports, etc.) and on several occasions have used more than one researcher (Saunders et al. 2016: 205). We have a focus on working systematically, being transparent, and ensuring a comprehensive level of documentation. Finally, we have to a large extent used participant and member validation, for example, when internal and external reports have been sent to review and review meetings have been held (Saunders et al. 2016: 207).

Generalizing from the findings in this report is related to analytical generalization (Collingridge and Gantt 2008: 391-392), also labeled transferability (Saunders et al. 2016: 206), which means that our findings could apply to other contexts, situations, times, and organizations. This should be a "reasoned judgment about the extent to which the findings in one study can be used as a guide to what might occur in another situation" (Collingridge and Gantt 2008: 391-392).

Dissemination to practice and academia

Our research is disseminated in various ways. First, PHD hosts regular smaller and larger events for the Half Double Community at which both practitioner and research-oriented topics are covered. Second, we are often invited by companies, consultants, networks, and associations to share our research at practitioner events, both physical and online, and this is an important part of sharing knowledge between researchers and practitioners. Finally, we participate in academic conferences to discuss our research with peers. Note that the work presented in this report is not peer-reviewed and, as such, it is not to be regarded as finished research results but as work in progress (AU 2019). Please refer to appendix C for further limitations.

Appendix C: Research Limitations

By Per Svejvig (Aarhus University)

This appendix gives an overview of the limitations of the work presented in this report. There is always a degree of uncertainty associated with research. This is also the case for the work presented in this report. We strongly encourage the reader to carefully consider the limitations presented below.

Challenges in comparing projects

It is challenging to compare projects because they are unique. Our pursuit is to evaluate the projects with project characteristics, which are rather generic, for example, using Shenhar and Dvir (2007) diamond model and evaluating project practices based on HDM (Olsson et al. 2018). Furthermore, our comparisons are for some measurements are delimited to the same organization, which makes it easier to find projects that share a similarity. However, the research team takes many decisions in this comparison – related to quantitative objective data, quantitative subjective data, and qualitative subjective data (Chiesa and Frattini 2007), and it is important to highlight that overall evaluation is a holistic, evolving, subjective, and social act (Rode et al. 2022) in which we take a pragmatic focus on problems, practices, and relevance (Saunders et al. 2016: 137).

The Hawthorne effect

The Hawthorne effect (Roethlisberger and Dickson 1939, Baritz 1960) might be at play and cause reactivity, which is a phenomenon that occurs when individuals alter their performance or behavior due to the awareness that they are being observed; hence, in experimental research design, it causes a bias because results will not be representative (Heppner et al. 2008). The fact that the HD project practitioners know that they are being studied and are part of a larger research project probably can have a positive impact on their behavior and might increase the performance of the HD project.

The halo effect

Moreover, results may possibly be affected by the increased attention and special treatment given to the HD projects because of the new methodology in terms of extra resources from consultants assisting with training and coaching as well as reflective talks and interviews with the research team. It is also possible that the HD projects as part of an optimization experiment and development process have been paid more positive attention by top management compared to earlier reference projects. Following these lines, the halo effect, which is the tendency to generalize based on one perceived trait of phenomena to many other aspects and toward an overall judgment of the phenomena (Neuman 20144), might play a role.

Researchers as instruments

The Hawthorne and halo effects are based on a set of underlying assumptions about the nature of reality (ontology) and research (epistemology) that infer that the world is objective and made up of causal relationships that cause and affect things (ontology) and that it is possible to do objective research that captures this reality (epistemology; (Burrell and Morgan 1979). In general, one should be cautious of the objectivist paradigm and positivist understandings of the researcher as a neutral and detached observer (Bryman and Buchanan 2009) that can report objectively on reality. This report is based on pragmatism and takes an engaged scholarship approach that relies on a rather subjective ontology (Van de Ven 2007) recognizing that reality and research are subjective.

Limitations in data generation and data analysis methods

The primary data behind the study is based on answers to questions from project participants. The understanding of the concepts behind these questions may differ between individuals and the researchers cannot be sure questions about ambiguous and complex concepts are perceived as intended. Furthermore, it is not the same people collecting all the data, which could mean different interpretations of questions, leading to differences in answers.

Data on a given project is often collected from only one or a few project representatives that have partaken in the project to different degrees. Although we have tried to select the people most knowledgeable about the projects, we cannot claim the data is representative of all practitioners working on the project.

Some questions demand answers in quantitative scorings. Although the same standard explanations and examples are used within all organizations, arriving at a precise score is not possible and the score often becomes relative across practices and projects. In organizations in which we only have data on one project, comparison of the scorings between projects in other organizations can be troublesome because they are not scored relative to each other. In organizations in which several projects are scored, earlier scorings are used as a baseline in the scoring process to assure internal alignment in the way the questions and projects are perceived.

Another limitation regards the fact that data on practices is based on questions and answers. Hence, we get a picture of what people say they do – and not what they do. Observation is a preferable data generation method in instances in which the aim is to get a clear picture of peoples' behaviors (Silverman 2020).

Although data availability has substantially increased in this report compared to earlier reports, in some cases, collection of the necessary data has not been possible. In other cases, data availability and access are vast. In these cases, the possibilities exist for additional data generation and analysis that could further strengthen or challenge the work presented in this report.

Limitations on statistical analyses

In terms of the statistical analysis, a separate set of limitations needs to be considered. First, there are missing values in the dataset that cannot be filled in as the data is either unavailable or not applicable, and mean imputation does not make sense in this case. Second, it is not possible to determine potential outliers as each organization is very different, and as outsiders, we only have limited access and options for comparing projects. Third, the T-test statistic requires that the data is normally distributed. Møller Jensen and Knudsen (2006) described how these criteria can be checked by evaluating a variable's skewness and kurtosis using the rule that if the numeric value of the skewness or kurtosis is larger than two times the standard error, the distribution is asymmetrical and differs from the normal distribution, violating one of the assumptions for the T-test. Looking at the analysis in chapter 3, only two out of nine practice scores fulfilled the criteria for the skewness and kurtosis. Pulse Check, Solution Design, Co-location, Visual Planning, Rhythm in Key Events, Collaborative Leadership, Active Project Ownership as well as the average mean for Flow and Leadership violate the assumption for normal distribution. For these practice scorings, we used a nonparametric Mann-Whitney U test to determine whether the mean scores for HD projects and reference projects were significantly different from each other. Looking at the analysis in chapter 6, seven out of the nine practice scorings fulfilled the criteria for skewness and kurtosis. The two practice scores that did not fulfill the criteria are Solution Design and Active Project Ownership as well as the mean score for Leadership. This indicates

that all other practices can be assumed to fulfill the criteria of being approximately normally distributed. Again, we applied for a Mann-Whitney U test for the practices not fulfilling the criteria of being approximately normally distributed to determine whether the mean scores for HD projects and reference projects are significantly different from each other.

Critical perspectives on Half Double Methodology and beyond

This report is not a critical review of the HDM, and we do not pertain to questions regarding to what degree projects can be delivered in half the time with double the impact. These statements are "consultancy jargon" and from a research perspective, most likely exaggerated and overly optimistic.

Appendix D: List of publications

This appendix lists the materials published by the research team on project Half Double from the start of Phase 1 in 2015 until the end of Phase 3 in 2023.

The list covers a total of 30 publications divided into two parts:

1. **Reports** comprise material produced for practitioners and cover a total of 13 reports previously published.

2. **Papers** comprise material produced for academics and cover a total of 16 conference proceedings and journal articles that are peer reviewed by other researchers within the same area of expertise.

Ad 1) REPORTS

1. Boris, P. N., & Svejvig, P. (2020). *Survey on project management methodologies used in the Half Double Community* Retrieved from Aarhus University: https://pure.au.dk/portal/da/persons/per-svejvig(40558617-c35b-464e-a0f6-7a2940494271)/publications/survey-on-project-management-methodologies-used-in-the-half-double-community(e3576eef-d778-46ea-a25b-206aaa5136d9).html

2. Boris, P. N., & Svejvig, P. (2021). *Survey on project management methodologies used in Danish Project Management Association community*. Retrieved from Aarhus University: https://pure.au.dk/portal/da/persons/per-svejvig(40558617-c35b-464e-a0f6-7a2940494271)/publications/survey-on-project-management-methodologies-used-in-danish-project-management-association-community(4f207bb7-209f-486e-a652-bfac40636baf).html

3. Jensby, A. (2021). *Project Half Double: case study consolidation of PHD phase 1 and 2, March 2021*. Retrieved from Aarhus University: https://pure.au.dk/portal/da/persons/anna-gerstroem(318b38b6-deaf-496e-958a-a3ef040d7614)/publications/project-half-double-case-study-consolidation-of-phd-phase-1-and-2-march-2021(b9bb06da-7d05-4daa-8eb5-e0ea8f263e25).html

4. Jensby, A., Mogensen, O. B. G., & Svejvig, P. (2021). *Project Half Double case study: Forsvarsministeriet, Materiel- og Indkøbsstyrelsen*. Retrieved from Aarhus University: https://pure.au.dk/portal/da/persons/per-svejvig(40558617-c35b-464e-a0f6-7a2940494271)/publications/project-half-double-case-study-forsvarsministeriet-materiel-og-indkoebsstyrelsen-fmi(2d4a1beb-62f3-4606-a029-0f99329c0754).html

5. Nielsen, L. J. K., Ulrik Bak; Zhu, Tong. (2022). *Project Half Double case study: Project FEMaLe*. Retrieved from Aarhus University:

6. Rode, A. L. G., Frederiksen, S. H., & Svejvig, P. (2018). *Project Half Double: training practitioners, working with visuals, practice reflections and small and medium-sized enterprises*. Retrieved from Aarhus University: https://pure.au.dk/portal/da/persons/per-svejvig(40558617-c35b-464e-a0f6-7a2940494271)/publications/project-half-double-training-practitioners-working-with-visuals-practice-reflections-and-small-and-medium-sized-enterprises(23cbcfcf-7147-424f-93a2-37be4673a31d).html

7. Rode, A. L. G., Hansen, A.-S., Svejvig, P., Ehlers, M., Adland, K. T., Ruth, T. K., . . . Greve-Vilby, A. M. (2019). *Project Half Double: Results for Phase 1 and Phase 2, June 2019*. Retrieved from Aarhus University: https://pure.au.dk/portal/da/persons/anna-gerstroem(318b38b6-deaf-

496e-958a-a3ef040d7614)/publica-tions/project-half-double(5e3e976c-2df4-4af2-bffc-c37a365209b3).html

8. Rode, A. L. G., & Svejvig, P. (2018a). *A Half Double case study: SAS Ground Handling pilot project.* Retrieved from Aarhus University: https://pure.au.dk/portal/da/per-sons/anna-gerstroem(318b38b6-deaf-496e-958a-a3ef040d7614)/publica-tions/a-half-double-case-study(12a3f0e0-438d-4fb9-8b2c-bede38030116).html

9. Rode, A. L. G., & Svejvig, P. (2018b). *High Level Research Findings from Project Half Double.* Retrieved from Aarhus University: https://pure.au.dk/portal/da/per-sons/anna-gerstroem(318b38b6-deaf-496e-958a-a3ef040d7614)/publica-tions/high-level-research-findings-from-project-half-double(55e5e85b-ee66-40bd-aa82-03995d2f224e).html

10. Rode, A. L. G., & Svejvig, P. (2021). *Project Half Double: mid-term evalua-tion of phase 3, March 2021.* Re-trieved from Aarhus University: https://pure.au.dk/portal/da/per-sons/per-svejvig(40558617-c35b-464e-a0f6-7a2940494271)/publica-tions/project-half-double(689fe78c-0844-4f8a-993d-4ba111080c31).html

11. Svejvig, P., Adland, K. T., Klein, J. B. Z., Pedersen, S. E., Nissen, N. A., & Waldemar, R. (2017). *Project Half Double: Current Results for Phase 1 and Phase 2, December 2017.* Re-trieved from Aarhus University: https://explore.open-aire.eu/search/publication?arti-cleId=od_____2416::74319ca91e34ad479e86c91610cacbbf

12. Svejvig, P., Ehlers, M., Adland, K. T., Grex, S., Frederiksen, S. H., Borch, M. M., . . . Pedersen, S. E. (2016). *Project Half Double: Preliminary Re-sults for Phase 1, June 2016.* Re-trieved from Aarhus University: http://ebooks.au.dk/index.php/aul/cat-alog/book/278

13. Svejvig, P., Rode, A. L. G., & Frede-riksen, S. H. (2017). *Project Half Dou-ble: Current Results for Phase 1 - ad-dendum, January 2017.* Retrieved from Aarhus University: https://ex-plore.openaire.eu/search/publica-tion?arti-cleId=dedup_wf_001::36e0acf0f2b4953164b3607083052a40

Ad 2) PAPERS

1. Frederiksen, S. H., & Svejvig, P. (2017). *The Collaborative Project Owner in Theory and Practice: Exam-ples from Project Half Double.* Paper presented at the Danish Project Man-agement Research Conference, Co-penhagen, Denmark.

2. Hansen, A.-S., Svejvig, P., & Hansen, L.-K. (2020, 10-11/09). *REVISITING SHENHAR AND DVIR'S DIAMOND MODEL: DO WE NEED AN UPGRADE?* Paper presented at the International Project Management As-sociation (IPMA) Research Confer-ence, online.

3. Heeager, L. T., Svejvig, P., & Schlichter, B. R. (2016a). *How Agile Methods Conquers General Project Management - The Project Half Dou-ble Initiative.* Paper presented at the Information Systems Research Con-ference in Scandinavia, Dublin.

4. Heeager, L. T., Svejvig, P., & Schlich-ter, B. R. (2016b). *How Agile Methods Inspire Project Management - The Half Double Initiative.* Paper pre-sented at the International Research Workshop on IT Project Management, Dublin.

5. Heeager, L. T., Svejvig, P., & Schlich-ter, B. R. (2016c). *How has Agile Methods Inspired an Industrywide Project Management Initiative?* Paper presented at the International Re-search Workshop on IT Project Man-agement, Dublin.

6. Jensby, A., Svejvig, P., & Rode, A. L.

G. (2021). *Diffusion and adoption of the Half Double project management methodology in Denmark*. Paper presented at the European Academy of Management, online.

7. Jensby, A., Svejvig, P., & Rode, A. L. G. (2022). *Adoption and Diffusion of a Novel Management Innovation: The Case of a Project Management Methodology*. Paper presented at the European Academy of Management, Schweiz.

8. Laursen, M., Svejvig, P., & Rode, A. L. G. (2017). *Four Approaches to Project Evaluation*. Paper presented at the Nordic Academy of Management Conference, Norway.

9. Rode, A. L. G., Jensby, A., & Svejvig, P. (2021). *Evaluating a new project management methodology: results from a multiple embedded comparative case study*. Paper presented at the European Academy of Management, online.

10. Rode, A. L. G., & Svejvig, P. (2018). Project evaluation: one framework - four approaches. In P. Svejvig & M. R. P. Hansen (Eds.), *THE HUMAN IN THE PROJECT* (pp. 23-38). Copenhagen: Roskilde University.

11. Rode, A. L. G., & Svejvig, P. (2021). *Designing a Project Evaluation Framework*. Paper presented at the European Academy of Management, online.

12. Rode, A. L. G., Svejvig, P., & Martinsuo, M. (2022). Developing a Multidimensional Conception of Project Evaluation to Improve Projects. *Project Management Journal, 53*(4), 416-432. doi:10.1177/87569728221095473

13. Svejvig, P., Geraldi, J., & Grex, S. (2017). *Accelerating time to benefit: Deconstructing innovative organizational practices in five projects*. Paper presented at the International Research Network on Organizing by Projects, Boston, USA.

14. Svejvig, P., Geraldi, J., & Grex, S. (2019). Accelerating time to impact: Deconstructing practices to achieve project value. *International Journal of Project Management, 37*(7). doi:10.1016/j.ijproman.2018.12.003

15. Svejvig, P., & Grex, S. (2016). The Danish agenda for rethinking project management. *International Journal of Managing Projects in Business, 9*(4), 822-844. doi:doi:10.1108/IJMPB-11-2015-0107

16. Svejvig, P., & Hedegaard, F. (2016). The challenges of evaluating and comparing projects – An empirical study of designing a comparison framework. In J. Pries-Heje & P. Svejvig (Eds.), *Project Management for Achieving Change* (pp. 107-129). Frederiksberg: Roskilde University Press.

Appendix E: Glossary

By Anna Le Gerstrøm Rode (Aarhus University)

1. **Project Half Double (PHD)** is a collection of collaborative actions with the joint objective of improving projects by developing, implementing, and evaluating an improved project management methodology called Half Double. PHD runs in three phases from 2015 to 2023 (for further details, see chapter 2).

2. **Half Double Methodology (HDM)** is a project management methodology consisting of a set of elements, methods, and tools (for further details, see appendix A).

3. **Half Double Institute** is a non-profit association offering assistance and disseminating information about PHD and the HDM.

4. **Half Double organizations** are organizations in which the HDM is applied.

5. **Half Double projects** are projects in which the HDM is applied.

6. **Half Double practitioners** are individuals applying the HDM.

7. **Half Double community** is a community of people interested in PHD or the HDM.

8. **Half Double partners** are official partner organizations contributing to Phase 3 of Project Half Double.

9. **Half Double Accredited Training Organizations** are organizations accredited by APMG International to offer training and certification in the HDM.

10. **Half Double Certifications** are verifications of Half Double training and competences at a certain level.

11. **Half Double Certified Practitioners** are individuals holding one or several Half Double Certifications.

12. **Half Double publications** is written material related to PHD. Publications are authored by different stakeholders and include books and reports as well as peer-reviewed research (for further details, see appendix D).

13. **Half Double research collaborations** are Half Double related collaborations with researchers from Denmark and abroad.

14. **Half Double stakeholders** are organizations and individuals who can affect or are affected by PHD.

15. **Half Double ecosystem** is the system of interdependent elements, such as the Institute, the Community, and the Training Organizations, surrounding Half Double and ensuring its maintenance and development (for further details, see chapter 2).

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