

The Win-Win Matrix: Agile Methodology to Generate Synergies and Collaborative Networks Prior to Project Scope Definition

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In the university entrepreneurial environment, startups need to collaborate to address complex opportunities, but they frequently fail to define the scope of joint projects due to a lack of prior strategic alignment. To resolve these differences, within the framework of the European project NEWSTEP, we have developed a practical support tool that visualizes and aligns mutual objectives. This article presents the "Win-Win Matrix," a methodology developed to structure the creation of agile ecosystems before initiating technical planning. The method models the collaboration network by identifying stakeholders and visualizing their potential gains. Using agile estimation techniques such as Scrum Planning Poker, the parties reach a consensus on the value (qualitative and quantitative) of their interactions, seeking balanced ratios of reciprocity. Experimental validation was carried out through dynamic workshops within the NEWSTEP project, where groups of entrepreneurs simulated the negotiation of real assets and knowledge under time constraints. The results showed that this tool allows filtering out unfeasible collaborations and highlighting those with high synergistic potential, transforming a set of isolated entrepreneurs into a resilient network and providing the necessary confidence to define realistic scopes for multidisciplinary projects.

Introduction

In the current entrepreneurial landscape, the university serves as the first step of the engine for generating science and technology-based start-ups. However, the students-based teams face the challenge of transcending the academic environment to be integrated into a complex socio-economic ecosystem where collaboration is necessity to address market opportunities that exceed their own capabilities. Traditionally, professional relationships have been managed through static contact lists and supplier-client relations. However, for a start-up to be competitive, it requires a transition from a traditional contact system towards an agile network ecosystem.

In the agile paradigm, optimal performance is not measured by the quantity, for example of accumulated contacts, but by the capacity to generate real synergies with the contacts. One of the 12 points of the agile manifesto is "deliver value frequently" (Fowler & Highsmith, 2001), consequently the relationship between contacts implies a relationship in which there must be an exchange of value, and if possible, a mutual gain of value. To obtain these common values, it is necessary to understand clients and suppliers as nodes of a living and interconnected network. Within this structure, each node represents an actor (individual, start-up, or company) whose value lies in its connection potential and the quality of the relationship, founded on trust and communication. The essence of this network is that these nodes function as pieces that connect for a specific project on some occasions and, on others, remain latent without losing their intrinsic value as potential collaborators. This dynamic of intermittent but valuable connections is what provides resilience and adaptability to the network, allowing the flow of information and shared resources to generate a global value far superior to the sum of its parts.

To facilitate this integration, the Win-Win Matrix has been developed within the framework of the European project NEWSTEP (Nepal Way to a Sustainable Transformational Educational Programme). This methodology allows the network to be modelled by systematically identifying meeting points where both parties obtain a mutual benefit. Mutual benefit acts as the "spark" that activates these nodes, transforming intangible benefits into comparable indicators and providing the necessary foundation to define realistic and sustainable multidisciplinary project scopes.

NEWSTEP aims to enhance the online teaching competencies of partner HEIs in Nepal by introducing innovative pedagogical approaches and a competencies framework. It focuses on redefining the roles of teachers and students, providing both theoretical and practical insights into teaching and learning, and promoting a shift in learning culture oriented to the entrepreneurship as the basis of the main goal of students training. Consequently, in the project context, it is necessary an agile tool that can create the synergies between students-based start-ups and companies.

This paper is structured as follows: It begins by exploring the Fundamentals, where the necessity for a Win-Win Matrix in the university startup ecosystem is. Following this, the Method section provides a detailed operational breakdown of the tool, including the identification of stakeholders, the definition of quantitative and qualitative gains, and the iterative steps for filling the matrix and selecting balanced reciprocity links. Subsequently, the Pilot Test section presents the results and participant evaluations from sessions conducted within the NEWSTEP project. The paper ends with the Conclusions with a statement on the work's alignment with the Sustainable Development Goals and the importance of the relation between the start-up project methodology as a rule to create a good synergy link.

1. Fundamentals

The need to implement a Win-Win Matrix in the university startup ecosystem derives from the mandatory transition from a "zero-sum" paradigm to integrative negotiation models (Palit & Brint, 2020). In today's highly competitive and interconnected environments, there is a prevailing perception that resources are a piece that must be divided up, trying to get the best portion. For a startup, relationships based on a "Win-Lose" model are inherently unstable. It is possible to generate resentments of the losing party that ultimately destroys loyalty and generates negative perceptions that affects both parties toward failure (Zhang et al., 2009).

The technical justification for the matrix is based on the Nash solution, which mathematically demonstrates that rational actors reach an optimum point when they maximise joint benefits, enabling the creation of a "subjective value" that benefits all parties without harming any (Lippman et al., 2013). In this context, the matrix is not only an ethical tool but also a strategic necessity for ensuring sustainability and the co-creation of value in complex relationships (Lafuente et al., 2023)

The need for a Win-Win Matrix in university startup ecosystems is strongly supported by empirical case studies in technology transfer. Research shows that incubators relying on 'Win-Lose' dynamics, such as aggressive intellectual property retention, create structural friction that destroys founder trust and leads spin-offs to premature failure (Villani et al., 2017).

Conversely, real-world innovation networks demonstrate that abandoning defensive postures for equitable agreements maximises joint benefits, reflecting Nash's principles in practice. Empirical data confirms that integrative negotiation is the most effective strategic mechanism for ensuring long-term sustainability, investment attraction, and co-innovation (Cunningham et al., 2019; Shakiba & Belitski, 2024).

The primary advantages of adopting this matrix centre on the creation of synergies that allow an interconnected network to achieve more results than each entity could achieve individually.

By focusing on mutual gains, organizations foster long-term stability built on integrity and transparency. Furthermore, the use of agile artifacts, such as the product backlog and iterative demos, helps teams avoid the development of unnecessary features, focusing instead on critical milestones and ensuring that the final output is both feasible and useful.

Despite these benefits, the matrix faces practical challenges, such as the Lose-Win trap, where a party concedes too much in hopes of gaining future loyalty, leading to financial unsustainability and eventual failure. Psychological factors like "winner's regret" can also undermine the relationship if an agreement is reached too quickly, as one party may assume they could have obtained more.

Finally, the evolution towards a Win-Win model expands the scope of negotiation to include the community and the environment as a third crucial party, ensuring that collaborations are socially and ecologically sustainable. This holistic approach aligns with modern Sustainable Development Goals, ensuring that the value generated between universities and start-ups translates into broader societal welfare and the equitable allocation of resources. Ultimately, the Win-Win Matrix remains an innovative tool because it recognises that the most durable agreements are those where all parties leave the table feeling respected and stronger than when they began.

2. Method

This section details the operational methodology of the Win-Win Matrix, structured as a systematic process to transform a traditional contact list into a dynamic, agile network. This methodology allows a network to be modelled as a table, where the content of the cells describes the specific value-exchange relationship between actors. The process was developed within the framework of the NEWSTEP project to create synergies between student-based start-ups and established companies. The methodology is implemented through a structured workshop format, as it is geared towards this because it is designed to be carried out jointly in workshops that foster synergy. The process is divided into the following phases detailed below.

2.1 Identification of Actors

In the initial phase, the workshop organisers select the actors, considered as stakeholders, who will constitute the nodes of the win-win matrix. These actors can be individuals, start-ups, or established companies. From an agile perspective, the focus is on self-organising teams and the quality of relationships, founded on trust, communication, and diverse perspectives, rather than a mere list of contacts.

All participants will interact with each other for at least five minutes, so the number of participants must not exceed the allotted session time. Each interaction must conclude with an estimate of the synergistic value generated for each cell in the win-win matrix.

2.2 Definition of Gains

The workshop organisers determine the parameters that define the "gain" for each actor. These gains are categorised as:

- Quantitative: Parameters such as economic benefit, measured in specific magnitudes like money or time earned from the interaction.
- Qualitative: Intangible benefits such as prestige or brand positioning, which should be converted into quantitative indicators to facilitate measurement. Each team member proposes parameters and magnitudes to ensure a comprehensive understanding of what constitutes "value" for each interaction.

Conversely, this methodological rigor introduces notable operational challenges. A primary disadvantage lies in the inherent subjectivity required to translate abstract concepts into specific numerical magnitudes. This translation process can inadvertently introduce departmental or personal biases into an otherwise objective matrix. Additionally, achieving consensus on the exact measurement of these intangibles demands significant time and deliberation, potentially creating administrative bottlenecks that hinder the agility characteristic of startup ecosystems. Finally, this approach carries a risk of oversimplification. Forcing nuanced reputational or relational dynamics into rigid numerical indicators may strip away critical context, resulting in a false sense of mathematical precision where the metrics appear flawless theoretically but fail to fully capture the complex reality of the institutional relationship.

To effectively operationalise the Win-Win Matrix, actors within the ecosystem must use specific artifacts that serve as boundary objects, facilitating alignment and trust during iterative steps of the win-win matrix. Foundational to this alignment are artifacts that communicate strategic identity, such as the personal, CEO, or startup's or founder's manifesto. This artifact is the one we used in the use cases and in the tests. Figure 1 shows some examples of personal manifestos created by the participants.

The image displays three posters illustrating the 'Jopoli Manifest'.

- The Jopoli's Manifest:** Features a large coffee cup icon. Text includes: "Coffee is to...", "...work ...speak ...think ...live", "Better explain an idea with a picture that with a lot of words", "to imagine situations", "Operative System", "Software", "Hardware", "Create Create Create", "Hard Skills", "Languages Soft Skills", "Healthy diet, sport", "A song for an emotion, an emotion for a song", and "NORMAL IS BORING".
- The Jud's Manifest:** Features a motorcycle icon. Text includes: "THE JUD'S MANIFEST", "RACE YOUR LIFE", "ENJOY THE LITTLE THINGS", "LIVE WITH WITH", "BE KIND CREATIVE DREAMER", "EXPLORE THE NATURE", "DREAM OUT LOUD", and "Silberto Cesarino [www.silbertocesarino.com]".
- The Estefania's Manifest:** Features a lightbulb icon. Text includes: "THE ESTEFANIA'S MANIFEST", "POSITIVE", "DREAM BIG", "BOOKS FILMS", "Do something CREATIVE CHOCOLATE", "EVERYTHING happens for a REASON", "Enjoy the SILENCE", "RELAX AND HARRY POTTER", and "© 2010 Soft Skills Jose Luis Posa-Lujan [www.jopoli.net]".

The manifesto is one of the tools that, without delving into more sensitive aspects such as personal beliefs or values, allows us to gain perspectives on ways of thinking that will facilitate a faster connection between the participants.

Other artifacts are the articulated mission, vision, and core values of the company. These elements act as a strategic compass, ensuring that potential partnerships resonate with the company's fundamental and ethical principles. Furthermore, personal and startup branding, coupled with a transparent assessment of the startup's maturity level, provide external actors with a clear understanding of the entity's current capabilities. This transparency is vital for setting realistic expectations and calibrating the magnitude of value that can be co-created. Beyond core identity, communicative and operational artifacts play a critical role in bridging the gap between actors. Active engagement on social media serves as a dynamic artifact, offering continuous visibility into the startup's culture. On a more granular, day-to-day level, sharing process cheat sheets and defining a clear meeting style foster operational transparency. These practical artifacts demystify internal workflows and communication preferences, significantly reducing relational friction. By establishing predictable patterns of interaction and making tacit knowledge explicit, these tools lower the transaction costs of forming the alliance and enable counterparts to integrate their collaborative efforts seamlessly.

2.4 The importance of the Project Management Method Used

While strategic identity and transparent communication lay the groundwork for a collaborative relationship, the actualization of mutual value heavily depends on the compatibility of project management methods. The specific methodologies employed—whether Agile, Scrum, Waterfall, or highly customised hybrid frameworks—act as the structural backbone of the interaction. A strong match between the project management methods of interacting actors is one of the primary determinants of a successful, enduring relationship. When methodologies align, resource allocation, timeline expectations, and deliverable tracking become synchronised, minimizing the risk of operational dissonance. Conversely, clashing management styles can introduce severe administrative bottlenecks, transforming a theoretically perfect Win-Win agreement into a logistical burden. Therefore, evaluating and harmonizing these execution artifacts during the negotiation iterations is not merely an operational detail, but a critical strategic requirement for translating collaborative intent into measurable joint success.

2.5 Filling the Matrix

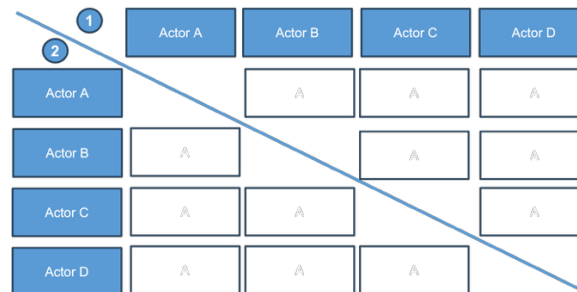
The matrix is populated based on the rule that the actor in the column obtains a gain from their link with the actor in the row. To ensure accuracy and avoid individual bias, the Organisers use agile consensus methods, such as Scrum Planning Poker, to estimate the value of these interactions. The calculation must be performed for both directions of the relationship (column-to-row and row-to-column) to identify reciprocal value. To complete the matrix, different phases are carried out in which cells are filled in one by one, and the organisers highlight the cells that are relevant because there is a mutual benefit for both parties.

Step 0. The empty matrix

The methodology begins with the construction of the initial matrix structure, which serves as the foundational canvas for the entire synergy-generation process. In a standard closed university start-up workshop, the workshop organisers typically place the same set of actors in both the rows and the columns, considered as a configuration referred to as horizontal synergy. However, it is not strictly necessary for the actors in the columns to be identical to those in the rows. For example, in a workshop focused on professional linking, such as a session between university start-ups and business angels, the matrix can be configured with different sets of actors to specifically model the asymmetrical exchange of value and resources between these

two groups. As illustrated in Figure 2, the empty win-win matrix provides a transparent framework for identifying meeting points and aligning mutual objectives before technical planning common projects.

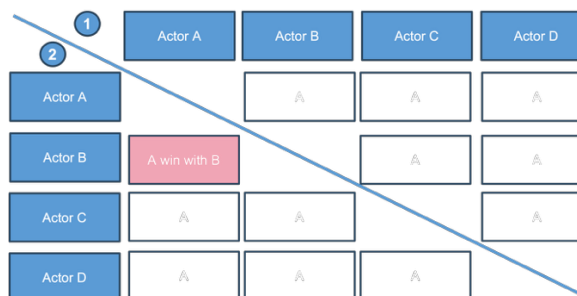
Figure 2: the win-win matrix empty, the sequence starts putting in contact the actors from the columns to the actors in the rows



Step 1. The interaction between actors.

The sequence of interaction is strictly defined: the process starts by putting the actors in the columns in contact with the actors in the rows. Following the "golden rule" of the methodology, each cell is designed to describe the specific gain that the actor in the column receives through their link with the corresponding actor in the row.

Figure 3: Single win cell filled by the actor A according to the interaction with actor B



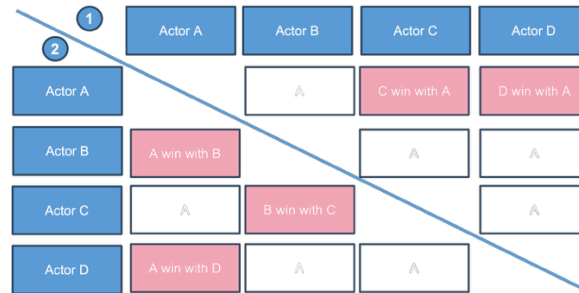
It's important to understand that each cell only records the gain of one actor; therefore, in each iteration, you must record your own gain. The link will come later. Synergy generation systems typically have a continuous cycle, but it's important to maintain the perspective of each actor's gain. Actors are given a card (or sticky note) to record their gains so that the link can be made later.

Step 2 (Iterations). Filling the matrix.

Following the construction of the win-win matrix, step 2 enters its most intensive phase: the iterative filling of the matrix. This stage is critical for transforming the theoretical framework into a functional model of the agile network. Building upon the "golden rule" established in the previous steps, each cell is systematically populated to describe the specific gain that the actor in the column receives through their link with the corresponding actor in the row.

During these iterations, it is important to maintain the perspective of individual gains. In each cycle, actors are given cards or sticky notes to record their own perceived gain from the interaction, ensuring that the value is captured before the final link is formalised. To ensure accuracy and mitigate individual bias, the workshop organises employ agile consensus methods, such as Scrum Planning Poker, to estimate the synergistic value of these interactions. For the matrix to effectively model a resilient network, the calculation must be performed bidirectionally, evaluating both the column-to-row, and row-to-column relationships, to identify the reciprocal value necessary for a true win-win connection.

Figure 4: Result when the matrix has been filled after the iterations. Only iterations that exceed the threshold determined by the workshop organisers will be linked.

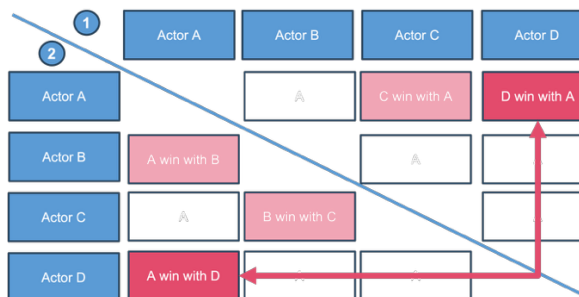


The result of this collaborative estimation process is illustrated in Figure 4. As the matrix is populated cell by cell, the Organisers highlight those that demonstrate relevant mutual benefits. To ensure that only the most robust and sustainable synergies are pursued, a filtering process is applied: only the interactions that exceed a specific threshold determined by the workshop organisers will be selected for the final creation of valuable links.

Step 3. Creating valuable links.

This phase is the most intense because it is key to achieving mutual benefits. The use of transparent tools is crucial for building trust between the parties.

Figure 5: A win-win relation is determined by a pair of win cells in which actors can agree with the term of the relation. The balanced win is considered based on the win rules.



The threshold for what constitutes winning is important, as it determines the future validity and sustainability of the decision. Because this aspect is important, it is discussed in detail in the following section.

2.6 Selection of Links

Once the matrix is complete, the organisers identify the most favourable ratios of reciprocity. The objective is to select balanced ratios, where both directions of the link present similar and high values, representing a true "Win-Win" scenario. In an agile network, only this mutual-gain option is considered valid, as "Win-Lose" models are inherently unstable and destroy long-term loyalty. This selection acts as the "spark" that ignites a beneficial relationship.

To define which interactions in the Win-Win Matrix qualify as a "win link" (Figure 5) and deserve to be transformed into a valuable link, it is essential to establish rigorous filtering rules. Based on the methodology and the technical foundations of the sources, here are several proposed rules and ideas for this aspect.

- **The Rule of Mandatory Reciprocity.** The most fundamental rule for a cell to be considered a "win" is that the interaction must be bidirectional. In an agile network, professional relationships are viewed as nodes of a living network where value must be exchanged. The rule determines that a link can only be formed if both the column-

to-row and row-to-column cells are populated with a recorded gain. If only one party perceives a gain, the relationship falls into the "Win-Lose" or "Lose-Win" quadrant, both of which are inherently unstable and eventually lead to the destruction of loyalty and project failure.

- The Minimum Synergy Threshold. As indicated in the methodology, the workshop organisers must determine a specific threshold to separate casual contacts from high-potential synergies. Based on this rule, only cells where the consensus-based value exceeds a pre-defined numerical or qualitative "floor" are eligible for linking. This threshold acts as a filter for "unfeasible collaborations," ensuring that the network's energy is focused only on connections that provide a significant "spark" to ignite the relationship.
- The Rule of Balanced Ratios. A "win cell" is not defined solely by high numbers, but by the balance between the two actors. Organisers should seek balanced ratios of reciprocity, where the values in both directions are not only high but also similar. High asymmetry (e.g., Actor A gains 90 while Actor B gains 10) indicates a power imbalance or a "Lose-Win trap." In such cases, the party conceding too much may face financial unsustainability or resentment, undermining the long-term stability of the agile network.
- Validation via Consensus (Scrum Poker Rule). To be considered a valid "win," the value assigned to a cell cannot be the result of a single person's subjective opinion. Every value in the matrix must be validated using an agile consensus method, such as Scrum Planning Poker. This reduces individual bias and "blind spots." If a working group cannot reach a consensus on the value of a connection, that cell should be flagged as an "Issue" or filtered out until further clarification is provided through agile artifacts like a manifesto or a value proposition.
- The "Win-Win or No Deal" Principle. This rule, rooted in the philosophy of effective character, provides the ultimate safeguard for the network's integrity. If the interaction does not meet the criteria for mutual benefit, balance, and the minimum threshold, the organisers must apply the "No Deal" option. This prevents "forced agreements" of sum-zero. Having the freedom to walk away from a sub-optimal connection protects the "Emotional Bank Account" of the ecosystem, ensuring that every active link in the matrix is founded on genuine trust and synergy.
- The Triple-Win, or Sustainability Filter. For more advanced ecosystems, a "win cell" can be evaluated against a third dimension: the community and the environment. A connection is prioritised if it also aligns with Sustainable Development Goals (SDGs), moving from a Win-Win to a Win-Win-Win model. This ensures that the collaboration between a university and a start-up does not generate negative externalities, thereby securing the "social license to operate" and long-term societal welfare.

By applying these rules, organisers transform the matrix from a simple table of estimations into a strategic filtering tool that highlights only the most resilient, equitable, and valuable nodes for the future project scope.

2.7 Definition of the Agile Elements: Artifacts and Ceremonies

This stage involves operationalising the chosen links by determining the artifacts and ceremonies necessary to maintain the connection.

Artifacts: The team creates a backlog of work products. Key artifacts include the "Customer Problem" (the initial list of unmet needs) and the "Value Proposition/MVP Demo", which represent the startup's hypothesis and early versions of the solution.

Ceremonies: These are structured, time-boxed interactions for inspection and adaptation. Examples include "Needs Discovery Meetings" for co-creation, "Iterative Demos" for early validation, and "Quick Check-ins" to maintain alignment.

The methodology concludes with a Kanban board simulation, where the team moves ceremonies through columns such as "To Do", "Doing", and "Done". This process provides the resilience and adaptability needed for the network to generate a global value far superior to the sum of its individual parts. Finally, the team identifies the specific competencies (e.g., branding, decision-making) required to successfully manage these nodes and generate continuous value.

3. Pilot Test

The method has been tested in working sessions and meetings with professors from the universities participating in the NEWSTEP project (Figure 6). In this case, each startup (participant) gave a presentation, followed by a review session with the other participants. To expedite the process, instead of face-to-face meetings, one-on-one meetings were held, where each participant analysed the potential benefits of collaborating with the other companies.

Figure 6: One of the sessions of the pilot test of the agile network. In this case, the artifacts used were posters.



The pilot involved a total of 30 participants (N=30). The cohort was composed of a diverse group of stakeholders, including professors from partner Higher Education Institutions (HEIs) in Nepal, student-based startup founders, and industry experts. This mix of profiles ensured that the matrix was tested against both academic and professional linking requirements.

The sessions followed a time-boxed agile format:

- Identification of Actors (10 min): Participants established nodes using Posters to communicate strategic identity and core values.
- Definition of Gains (5 min): Establishing quantitative and qualitative parameters.
- Filling the Matrix (45 min): Executing interactions and applying Scrum Planning Poker for value consensus.
- Optional: selection of Links and Kanban Simulation (60 min): Filtering synergies based on reciprocity ratios and simulating the collaboration flow.

3.2 Pilot test utility

To measure the effectiveness and utility of the methodology, an evaluation was conducted immediately following the working sessions. The instrument used was a standardised rating card designed to capture the perceived usefulness of the Win-Win Matrix and an open text space to provide opinion. Participants were asked to rate this dimension on a 5-point Likert scale, ranging from 1 (not useful at all) to 5 (very useful). Out of the 30 participants, 24 provided a response, representing an 80% response rate. The result obtained was an average of the usefulness rating of 4.77 / 5.00, with a 0.81 of standard deviation.

The exceptionally high average score of 4.77 indicates a high level of participant satisfaction and validates the operational effectiveness of the matrix as a tool for fostering an agile entrepreneurial ecosystem. Qualitatively, the low standard deviation (0.81) suggests a high degree of consensus regarding the method's utility.

About the open text responses, 14 participants reported texts. Mainly, the responses comment us that using posters as initial artifacts significantly accelerated strategic connections and providing a clear perspective on ways of thinking without exposing sensitive personal beliefs.

The results of following the pilot testing indicate a high level of participant satisfaction and validate the operational effectiveness of the Win-Win Matrix in fostering an agile entrepreneurial ecosystem. Quantitatively, the results highlighted the success of the threshold-rule technique, which established a "common metric language" and reduced individual bias when converting qualitative gains, such as prestige, into comparable indicators.

4. Conclusions

The Win-Win Matrix represents a fundamental strategic transference in how university-based start-ups navigate the transition from academic environments to complex socio-economic ecosystems. By moving away from traditional, static contact lists and adopting an agile network paradigm, this methodology ensures that professional relationships are treated as dynamic nodes of value founded on trust, communication, and mutual benefit. The integration of the Nash negotiating solution provides a robust mathematical and technical foundation for the matrix, demonstrating that optimal outcomes are achieved when joint benefits are maximised, thereby fostering long-term sustainability and stakeholder loyalty.

The operational process developed and tested within the NEWSTEP project validates that the systematic quantification of qualitative gains is essential for creating a synergy between actors. While the process of translating abstract concepts into numerical magnitudes introduces operational challenges regarding subjectivity, the application of agile consensus methods like Scrum Planning Poker successfully mitigates individual bias and ensures internal alignment before negotiations commence. The implementation of rigorous filtering rules acts as a vital safeguard against unstable "Win-Lose" dynamics that historically lead to structural friction and premature project failure.

The pilot testing results further demonstrate that the use of Posters as connective artifacts significantly accelerates the formation of strategic links. These tools allow participants to communicate their strategic identity and "ways of thinking" without encountering the relational friction often associated with sensitive personal beliefs. The Win-Win Matrix thus serves as an innovative tool for the 21st-century entrepreneur, confirming that the most durable and successful agreements are those where all parties leave the negotiation feeling respected, valued, and strategically stronger.

Future research could explore the development of more standardised frameworks or digital tools to further reduce individual and departmental biases and streamline the time-consuming process of reaching the win-win relation. Additionally, while the initial pilot testing within the NEWSTEP project provided a successful foundation, expanding these workshops to a broader range of industrial sectors would allow for the further operationalisation of the Triple-Win

model, ensuring deeper and more systematic integration with Sustainable Development Goals (SDGs). Finally, investigating the long-term impact of project management method compatibility remains a critical area of study to determine how the alignment of frameworks like Scrum or Waterfall specifically influences the endurance and measurable success of the links established through the matrix.

Agreements

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Use of Generative Artificial Intelligence

While the core ideas, insights, and strategic conceptualization of the Win-Win Matrix are exclusively the product of the authors' expertise and original thought (AI 0%), AI-powered tools served as a supportive resource during specific stages of development. It is important to emphasise that all empirical and operational work conducted within the framework of the NEWSTEP project was performed entirely by humans without the use of AI. During the research phase, AI tools were used to locate and synthesise information from a broad range of bibliographic sources, assisting in the identification of key papers and relevant data (estimated at 25% of the research effort). In the writing process, AI offered support in refining the language through a structured three-step sequence: (1) human writing, (2) AI-generated results for alternative phrasing, and (3) human rewriting to ensure clarity and coherence in the exposition of complex agile methodologies. The final text incorporates an estimated 20% of changes based on these AI-driven suggestions.

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Sustainable Development Goals**

