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Developing a Business Plan for a Data Analytical Company in the Real Estate Domain

A Master's Thesis submitted for the degree of
“Executive Master of Business Administration”

supervised by
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Affidavit

I, **PAVEL RAHACHEUSKI**, hereby declare

1. that I am the sole author of the present Master's Thesis, "DEVELOPING A BUSINESS PLAN FOR A DATA ANALYTICAL COMPANY IN THE REAL ESTATE DOMAIN", 106 pages, bound, and that I have not used any source or tool other than those referenced or any other illicit aid or tool, and
2. that I have not prior to this date submitted this Master's Thesis as an examination paper in any form in Austria or abroad.

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Abstract

This thesis focuses on the creation of a comprehensive business plan for a venture centred on the Quality of Listing (QoL) metric, a comparative tool designed to simplify property searches for homebuyers in the U.S. real estate market. By addressing inefficiencies and decision-making challenges faced by buyers, the QoL metric aims to enhance user experience and establish the foundation for a profitable business. The research adopts a structured approach to business planning, following the principles of disciplined entrepreneurship. Key components of the business plan include market research, financial modelling, pricing strategies, customer acquisition pathways, and competitive positioning. Insights were gathered through stakeholder interviews and market segmentation analysis, enabling the development of a user-centric platform and a sustainable operational framework. The thesis outlines a two-phase business roadmap. The first year focuses on building the core infrastructure, including algorithm development, team assembly, prototype creation, and pilot testing with a real estate platform. The second year emphasizes scaling efforts through platform integration, market penetration, and securing $2 million in funding for expansion. A tiered pricing structure and customer retention strategies are proposed to maximize revenue and foster long-term growth. The analysis highlights the platform's competitive advantages, such as its ability to streamline decision-making through data-driven insights and personalized rankings. The QoL metric's value proposition, which reduces search time by up to 80%, is supported by robust financial projections estimating total addressable beachhead market of $10 million in the initial Austin, Texas, and total addressable market of the entire US as around $1.23 billion per year. Integration with established platforms like Zillow and Redfin is central to the growth strategy, enhancing market access and user adoption. In conclusion, the business plan demonstrates the feasibility and profitability of the QoL metric platform. By aligning technological innovation with market needs, this thesis provides a blueprint for launching a scalable, customer-focused venture in the competitive real estate market.

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1 Introduction

The motivation for this thesis stems from an interest in business planning, sparked during the "Entrepreneurial Leadership and Technology Development" module of the academic programme. This module highlighted the intersection of innovative technologies and strategic business planning, fostering a desire to explore and create practical solutions within competitive markets.

The research problem focuses on whether the creation of a Quality of Listing (QoL) metric and its integration into an online platform can enhance the efficiency of property searches for buyers in major U.S. cities. Specifically, the thesis will evaluate if such a platform can lead to better purchasing decisions, reduced search times based on the interest and feedback from the potential customers interviewed and, ultimately, whether the platform may form the foundation of a lucrative business venture.

The relevance of this study lies in addressing a critical pain point in the U.S. real estate market: the overwhelming volume of property listings and data that hinder efficient decision-making for potential buyers. The QoL metric, designed as a comparative rather than absolute tool, aims to simplify property searches by identifying listings offering the best value for money. By creating a business plan to assess the feasibility and profitability of this idea, this research contributes to bridging the gap between technological innovation and market demand.

The primary aim of this thesis is twofold: (1) to create a comprehensive business plan for the proposed venture, and (2) to evaluate the profitability of the proposed QoL metric and platform. The business plan will incorporate key elements such as market research, competitive analysis, financial forecasting, product development strategies, and a roadmap for implementation. It will also include specific objectives, such as identifying the target market, defining the value proposition, and developing a pricing framework, all of which are essential for evaluating the viability of the business idea.

This thesis is structured as follows:

Chapter 1 introduces the research problem, its motivation, and the aims of the study.

Chapter 2 outlines the methodical approach used.

Chapter 3 presents an in-depth review of the relevant literature, examining digital transformation in real estate, the challenges of listing data, and the significance of structured business planning—thereby laying the theoretical foundation for the proposed QoL metric.

Chapter 4 outlines the creation of the business plan, detailing the vision, objectives, action plan, market segmentation, competition analysis, product specification, financial projections, and strategies for customer acquisition and retention. This chapter also examines the integration of the QoL metric into a user-centric platform and the steps required to build a sustainable business model.

Chapter 5 presents the conclusion, summarizing findings and reflecting on the feasibility of the business idea.

2 Methodological approach and research problem

The research problem centres on whether the creation of a Quality of Listing (QoL) metric and its integration into a user-friendly platform can enhance property search efficiency for buyers in major U.S. cities and result into a lucrative business venture. This involves assessing whether the metric addresses a critical gap in the real estate market and can be useful for property buyers and whether it can serve as the foundation for a profitable business venture.

The Quality of Listing (QoL) metric is defined as a comparative analysis tool designed to evaluate and rank real estate listings based on specific buyer queries. Rather than assigning an absolute value to listings, the QoL metric provides a relative comparison, helping buyers identify the best value for their preferences while navigating the complexities of the real estate market.

To address the research problem and validate the business potential of the QoL metric, a mixed-methods approach was adopted, integrating qualitative and exploratory research methods:

Literature Review:

- A review of existing literature on business planning, online real estate platforms, and consumer behaviour in digital markets provided a foundation for understanding market dynamics and challenges.
- Business plan creation was based on the insights from “Disciplined Entrepreneurship” by Bill Aulet, incorporating the steps necessary for creating a sustainable business model.

Interviews with Key Stakeholders:

10 in-depth interviews were conducted with primary stakeholders (end users) - homebuyers, in order to understand their pain points, preferences, and perceived value of the QoL metric.

The qualitative data collected through these interviews informed the design and positioning of the proposed business venture.

The findings from the literature review and stakeholder interviews directly informed the business plan development process.

The research process followed these steps:

1. Literature Study: a review of industry sources to build a theoretical foundation for the business plan.
2. Stakeholder Interviews: interviews to collect primary data on the perceived utility of the QoL metric and its potential impact on the real estate market.
3. Business Plan Development: development of a detailed business plan, outlining the steps required to launch and sustain a company leveraging the QoL metric. This plan included strategic elements such as market segmentation, value proposition, pricing framework, and customer acquisition strategy.

3 Literature review

The development of a Quality of Listing (QoL) metric requires a solid foundation in both strategic business planning and an in-depth understanding of U.S. real estate market dynamics. To structure a robust business model, insights from strategic planning, market analysis, and value proposition design are essential. At the same time, recognizing the challenges and inefficiencies in the U.S. real estate sector—such as data overload, discrepancies in listing quality, and buyer decision-making behaviours—provides critical context for the potential impact of a QoL metric. This literature review is organised around two interrelated themes: the digital transformation of real estate and the role of structured business planning in driving new ventures.

Analysis of "A systematic literature review on digital transformation in real estate: challenges and opportunities" (Ali, 2025) highlights the process of digital transformation of real estate, focusing on the adoption of smart real estate technologies. Using PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) (Rasheed, 2022) guidelines and bibliometrics analysis, the study examines 41 academic sources and applies the PEST (Political, Economic, Social and Technological) (Chutiphongdech, 2021) framework to assess adoption barriers.

Key challenges include regulatory ambiguity, high implementation costs, social resistance, and technological limitations such as poor infrastructure and interoperability issues. The study emphasises AI, Blockchain, Big Data, and IoT as transformative tools but notes slow adoption due to systemic inertia. Authors of the study advocate for policy reforms, investment incentives, and clearer regulations to accelerate digital integration. Their findings support the development of a Quality of Listing (QoL) metric, aligning with efforts to enhance market transparency and decision-making in real estate.

Academic article "Real Trends: The Future of Real Estate in the United States" (Saiz, 2017) analyses key trends in the U.S. real estate sector, focusing on demographic shifts, housing affordability, and technological advancements. The report, published by the MIT Centre for Real Estate Research, synthesises insights from urban economics and data science to examine market dynamics.

A major theme is housing affordability, with rising land values and restrictive zoning worsening accessibility. The authors propose solutions like inclusionary zoning, adaptive reuse, and master-planned developments. They also explore how

technologies such as big data and IoT are transforming real estate transactions and infrastructure management.

Demographic trends, including an aging population and shifting household structures, are highlighted as crucial factors shaping housing demand. The study emphasises the need for flexible housing models and urban policies to accommodate these changes.

While insightful, the report's predictions about policy and technological trends remain speculative. Its macroeconomic focus also overlooks behavioural aspects of real estate decisions. Despite this, it provides a valuable framework for understanding market trends and underscores the importance of data-driven decision-making, aligning with research on the Quality of Listing Metric.

"Digital real estate: a review of the technologies and tools transforming the industry and society" (Naeem, 2023) examines the role of digital technologies such as AI, blockchain, big data in reshaping the real estate sector. The study categorises these advancements into four key areas: Information and Communication Technology, Data Collection Technologies, Data Networking Tools, and Decision-Making Systems.

A central contribution is the Digital Real Estate Transformation Framework (DReTF), which outlines three core pillars: adoption, integration, and implementation. While digitalisation enhances efficiency and transparency, challenges such as regulatory hurdles, costs, and data access persist.

The study emphasises algorithmic decision-making, showing how AI improve property valuation and market analysis. Big data and IoT further refine search processes and reduce information asymmetry, aligning with the Quality of Listing (QoL) metric to optimise property selection. Future research should explore how these technologies influence buyer decision-making and market behaviour, ensuring that digital advancements benefit both industry stakeholders and consumers. This study serves as a key reference for understanding the intersection of technology and real estate valuation analytics.

Kushchenko and Mytrofanova in their article "Analysis of the principles of sustainable development in strategic business planning" (Kushchenko, 2024) underscore the imperative of embedding environmental, social, and economic sustainability within corporate strategies to fortify long-term competitiveness. Their research contributes to the broader academic discourse on sustainable business practices, particularly within the real estate sector, where data-driven decision-making enhances market

efficiency. This scholarship substantiates the integration of sustainability into strategic business planning, reinforcing the foundational principles of the Quality of Listing (QoL) metric.

The study articulates the multifaceted advantages conferred by sustainable business models, including the attraction and retention of highly skilled professionals, the enhancement of corporate reputation, and demonstrably superior financial performance. Empirical evidence supports the assertion that firms with robust environmental, social, and governance (ESG) frameworks exhibit greater financial resilience and stability. The findings advocate for embedding sustainability as a core tenet of business strategy to mitigate risk exposure and cultivate long-term value creation.

Methodologically, the research employs a rigorous mixed-methods approach, incorporating both qualitative case analyses and quantitative statistical evaluations. ESG performance emerges as a salient predictor of corporate financial viability, a particularly pertinent insight within the real estate domain, where evolving consumer preferences increasingly prioritise sustainability. The QoL metric, as conceptualised in this study, stands to benefit from the incorporation of ESG criteria, thereby refining the accuracy and transparency of property listings.

Furthermore, the study elucidates the critical role of consumer and investor behaviour in shaping sustainability-driven corporate strategies. As market participants exhibit a growing proclivity for ethically responsible enterprises, organisations that proactively integrate ESG considerations into their operational paradigms are better positioned to cultivate stakeholder trust and secure investment. Within real estate, a QoL metric imbued with sustainability considerations would align with consumer demand, thereby bridging informational asymmetries and enhancing market efficiency. Additionally, the study explores the regulatory landscape governing corporate sustainability, demonstrating that enterprises that pre-emptively adapt to evolving policy frameworks achieve greater strategic agility. This insight holds particular significance within real estate, where regulatory instruments such as energy efficiency mandates and zoning stipulations profoundly influence listing quality and property valuation.

In synthesising these insights, the master's thesis fortifies its conceptual foundation by advancing a QoL metric that is integrally aligned with sustainability imperatives. By foregrounding the interdependence of ESG factors, consumer behaviour, and regulatory frameworks, the research substantiates the necessity of a data-driven, sustainability-oriented approach to real estate market efficiency. In doing so, it

underscores the broader implications of sustainability as a determinant of business viability and competitive advantage in contemporary market environments.

The digital transformation of the real estate sector has significantly influenced how properties are listed, evaluated, and transacted. The increasing integration of information communication technologies, artificial intelligence, and data-driven decision-making tools has reshaped market dynamics, providing new avenues for efficiency and transparency. Article “Digital real estate: a review of the technologies and tools transforming the industry and society” (Naeem, 2023) explores these transformative forces, emphasising the role of digital real estate technologies in modernising property transactions and urban development. This body of research provides a strong foundation for understanding how a Quality of Listing (QoL) metric can be embedded within the evolving real estate landscape to enhance property search efficiency.

The adoption of decision-making systems in real estate has been instrumental in refining property valuation and selection. Geographic Information Systems (GIS) and artificial intelligence-based predictive models have emerged as essential tools for analysing property characteristics and market trends. These technologies facilitate the extraction of location-specific data, thereby improving the accuracy of property assessments. The integration of GIS and AI underscores the potential of a QoL metric to provide a standardised evaluation framework that accounts for various listing attributes beyond traditional valuation criteria. By incorporating structured data-driven methodologies, the QoL metric aligns with the growing trend of digital decision support systems that assist buyers in making informed real estate decisions.

The evolution of digital real estate technologies has further underscored the need for structured and transparent listing evaluations. The real estate sector has increasingly leveraged big data analytics to optimise property recommendations and enhance market efficiency. The application of machine learning algorithms and natural language processing to listing descriptions has improved search functionalities, yet there remains a gap in the ability to quantify and compare listing quality systematically. The study by Naeem highlights the limitations of existing digital property search mechanisms, reinforcing the argument for the development of a comprehensive QoL metric that reduces search friction and enhances listing transparency.

Digitalisation has played a critical role in reshaping property transactions, introducing new efficiencies through blockchain, cloud computing, and automated valuation models. The study by Naeem discusses how PropTech innovations have facilitated

real-time access to property data, improving buyer-seller interactions and minimising transaction delays. The implementation of digital property passports and immutable record management systems has further emphasised the necessity of standardised and data-driven listing evaluations. Within this framework, the QoL metric can serve as an essential tool for real estate platforms by aggregating property features, neighbourhood data, and market trends to provide a holistic quality assessment.

The Digital Real Estate Transformation Framework (DReTF), as proposed in the reviewed study, provides a structured approach for integrating digital tools into real estate operations. The framework emphasises the need for adoption, integration, and implementation of digital technologies to enhance real estate market efficiency. This structured approach aligns with the objectives of the QoL metric, which aims to bridge the gap between unstructured listing data and meaningful, buyer-centric insights. By leveraging artificial intelligence, GIS, and big data analytics, the QoL metric can be embedded within digital real estate platforms to provide buyers with actionable insights that reduce information overload and streamline the decision-making process.

The transformation of real estate through smart technologies has also led to the development of intelligent urban planning and property management systems. The incorporation of smart city principles into real estate analytics has facilitated the collection of real-time environmental, infrastructural, and demographic data. As Naeem note, the increasing prevalence of smart buildings and urban IoT systems has enhanced the availability of property-related data, offering new opportunities for refining property evaluations. The QoL metric can build upon these advancements by integrating smart city data with listing attributes, ensuring a more comprehensive assessment that considers factors such as accessibility, environmental quality, and local amenities.

The review of digital real estate technologies provides compelling evidence for the necessity of a structured listing evaluation metric. The QoL metric aligns with the broader digital transformation trends in the real estate industry, leveraging AI-driven decision support systems, big data analytics, and smart city integrations to improve property search efficiency. By addressing the limitations of traditional listing descriptions and valuation models, the QoL metric has the potential to revolutionise property search mechanisms, enabling buyers to make more informed and efficient purchasing decisions. The integration of this metric into existing digital real estate

platforms represents a crucial step toward enhancing market transparency and optimising buyer experience in an increasingly data-driven real estate landscape.

Business planning has been widely debated in entrepreneurial research, with scholars presenting contrasting perspectives on its efficacy. Some argue that planning is an unnecessary administrative burden that detracts from essential actions such as securing resources and engaging with the market. Others contend that structured planning facilitates decision-making, mitigates uncertainty, and accelerates venture development. The study “Does business planning facilitate the development of new ventures?” (Delmar, 2003) provides empirical support for the latter perspective, demonstrating that business planning enhances both product development and venture-organising activities. The findings, based on a longitudinal analysis of 223 new ventures, indicate that planning enables entrepreneurs to allocate resources more efficiently, anticipate bottlenecks, and transition abstract goals into concrete operational steps. Furthermore, the study highlights the long-term benefits of structured planning, showing that ventures with clearly articulated plans exhibit higher resilience and adaptability in volatile markets.

The arguments presented by Delmar and Shane are particularly relevant to the conceptual framework of the Quality of Listing (QoL) metric in the real estate domain. Just as business planning provides a structured approach to venture creation, the QoL metric aims to introduce a systematic evaluation of property listings, thereby streamlining the decision-making process for homebuyers. The study emphasises that structured decision-making enhances efficiency by reducing reliance on trial-and-error approaches. In the context of real estate, this aligns with the premise that homebuyers benefit from structured, data-driven insights that reduce cognitive overload and facilitate more informed purchasing decisions. A structured approach to property evaluation not only expedites the selection process but also increases confidence in purchasing decisions by ensuring that buyers have access to the most relevant and accurate information at every stage.

Critics of business planning often argue that uncertainty and the dynamic nature of markets render extensive planning redundant, advocating for more intuitive decision-making processes. Delmar and Shane challenge this notion by demonstrating that planning is not merely an administrative exercise but a mechanism that improves the speed and quality of critical entrepreneurial decisions. This insight is particularly relevant to the real estate sector, where decision-making is often influenced by an overwhelming volume of unstructured information. The QoL metric, by systematically

organising and quantifying listing attributes, functions analogously to a business plan in an entrepreneurial setting. It provides homebuyers with a structured framework that allows them to compare properties more effectively, reducing reliance on intuition and enhancing decision efficiency. Moreover, structured listing quality metrics can address biases and inconsistencies inherent in traditional real estate evaluations, ensuring a more objective approach to property assessment.

Beyond theoretical implications, the methodological approach employed by Delmar and Shane offers valuable insights for the empirical validation of the QoL metric. Their use of fixed-effects regression on panel data allows for a nuanced examination of the causal relationship between planning and venture success, controlling for industry-specific and venture-specific heterogeneity. This approach suggests a potential methodology for assessing the impact of structured listing quality metrics on homebuyer efficiency. By tracking homebuyers' search behaviour over time and comparing the effectiveness of structured versus unstructured listing evaluations, it becomes possible to quantify the benefits of data-driven decision-making in real estate transactions. Further empirical research could explore variations in how different demographic segments of buyers respond to structured listing insights, potentially revealing trends that could enhance the design and implementation of the QoL metric.

Delmar and Shane's findings underscore the broader significance of structured planning in facilitating complex decision-making processes. Their research provides a compelling justification for the development and application of structured evaluation tools such as the QoL metric. Just as business planning enables entrepreneurs to manage uncertainties and optimise resource allocation, structured listing metrics have the potential to enhance the real estate search process by minimising inefficiencies and improving buyer outcomes. Integrating these insights into the literature review strengthens the argument that well-defined frameworks improve decision quality, reinforcing the necessity of structured evaluation tools in high-stakes decision environments such as property investment. Additionally, structured metrics like the QoL framework could influence broader industry practices by encouraging real estate platforms and agencies to adopt more transparent and data-driven listing standards, ultimately fostering a more efficient and competitive marketplace.

Business planning has been widely recognised as a critical factor in the success of new ventures. Research "Is business planning useful for the new venture emergence?" (Wei, 2018) suggests that engaging in business planning significantly

enhances the likelihood of venture emergence by reducing uncertainties and facilitating resource allocation. The theoretical underpinning of this perspective is derived from organisation theory, which posits that structured planning enables entrepreneurs to evaluate opportunities systematically, allocate resources efficiently, and mitigate risks associated with trial-and-error learning. Empirical studies have demonstrated that ventures with a well-defined business plan are more likely to attract investor interest and gain early market traction, underscoring the instrumental role of planning in legitimising a nascent business.

Despite the recognised benefits of business planning, the timing of its execution has been a subject of debate. Some studies suggest that early business planning enhances venture emergence by providing a roadmap for growth and signalling legitimacy to external stakeholders. However, other research argues that the timing of business planning does not significantly influence the probability of success, as the effectiveness of planning may depend on contextual factors such as industry dynamics and product innovation. The discrepancy in findings highlights the complexity of business planning and its interaction with various entrepreneurial conditions.

Legitimacy theory provides a useful framework for understanding the role of business planning in new venture emergence. According to this theory, new ventures often face challenges in gaining stakeholder acceptance due to lack of operational history and market credibility. Business planning serves as a legitimisation tool that signals stability, strategic foresight, and market readiness to investors, customers, and regulatory bodies. The presence of a well-articulated business plan can enhance the perceived legitimacy of a venture by demonstrating its commitment to structured decision-making and long-term viability.

In the context of real estate analytics, legitimacy theory is particularly relevant. The introduction of a novel Quality of Listing (QoL) metric, designed to improve property search efficiency through advanced data analytics, necessitates a high degree of stakeholder trust and validation. Given that innovative ventures often face scepticism due to the novelty of offerings, business planning can act as a credibility-enhancing mechanism. A comprehensive business plan detailing the methodology, data sources, and market applications of the QoL metric can mitigate stakeholder concerns and foster early adoption. The ability to articulate a clear value proposition through a structured plan enhances the venture's ability to secure partnerships and funding, ultimately accelerating its market entry.

The relationship between business planning and new venture emergence is further moderated by the degree of innovativeness of the product or service. High levels of innovativeness introduce additional uncertainty, making it imperative for entrepreneurs to engage in business planning to address potential market hesitations. Research indicates that innovative ventures benefit disproportionately from business planning, as structured planning provides a mechanism to communicate the feasibility and competitive advantage of novel offerings. A high degree of product innovativeness increases the necessity for clear articulation of market fit, technological viability, and competitive positioning, which can be effectively achieved through a well-structured business plan.

For a data-driven real estate analytics firm introducing the QoL metric, the role of business planning becomes even more pronounced. The innovativeness of the QoL metric, which integrates data science and real estate market dynamics to improve listing quality assessments, necessitates strategic planning to ensure widespread acceptance. Stakeholders, including real estate platforms, investors, and consumers, require a comprehensive understanding of how the metric functions, the data it utilises, and its reliability in improving property search efficiency. Business planning, in this case, serves as an essential tool for knowledge dissemination and market positioning. The early development of a business plan enables the venture to pre-emptively address potential objections and refine its value proposition to align with industry standards and consumer expectations.

The strategic importance of business planning extends beyond legitimacy and innovativeness. It plays a crucial role in shaping market entry strategies and ensuring the operational feasibility of the venture. Studies have shown that business planning enables entrepreneurs to make informed decisions regarding market segmentation, pricing models, and partnership development. The structured approach provided by business planning facilitates alignment between the venture's goals and market demands, thereby enhancing the probability of successful entry and sustained growth.

For the QoL metric, business planning provides a structured approach to integrating the new analytical tool into the real estate market. By detailing specific implementation strategies, including pilot studies, stakeholder engagement, and technological refinement, the business plan ensures a smooth transition from conceptualisation to market adoption. Additionally, business planning allows for continuous assessment and iteration, ensuring that the metric evolves in response to user feedback and market conditions.

The literature on business planning underscores its fundamental role in new venture emergence, particularly in the context of innovative enterprises. While the exact timing of business planning may vary in significance across different industries, the consensus remains that a well-structured business plan enhances legitimacy, facilitates resource allocation, and improves stakeholder engagement. The introduction of novel metrics, such as the QoL metric in real estate analytics, further amplifies the necessity of business planning as a strategic tool for market positioning and adoption. The interplay between business planning, legitimacy theory, and product innovativeness provides a robust framework for understanding the challenges and opportunities associated with launching a data-driven real estate venture. As such, incorporating comprehensive business planning into the development of the QoL metric will not only enhance its credibility but also optimise its market impact and long-term sustainability.

The intersection of Artificial Intelligence (AI) and Blockchain technology with real estate has emerged as a pivotal area of academic inquiry, particularly in the context of developing economies. Research “Technological Transformation in Infrastructure & Real Estate: AI, Blockchain, Project Management & Policy Implications Across Leading Markets.” (Owotemu, 2025) offer a meticulous analysis of the transformative impact of AI on infrastructure, housing finance, and project management, with a specific focus on key African markets. The research underscores the role of AI in enhancing property valuation methodologies, refining access to credit, and optimizing urban planning frameworks. These insights bear direct relevance to the conceptualization and operationalization of the Quality of Listing (QoL) metric in real estate, as AI and Blockchain technologies collectively drive data-informed decision-making, improve transactional transparency, and mitigate inefficiencies in property search mechanisms.

A principal contribution of Owotemu and Ibaru’s work is its in-depth evaluation of predictive analytics and generative AI applications within real estate. Predictive analytics facilitates granular market trend forecasting and comprehensive risk assessment, equipping buyers with data-driven decision-making capabilities that optimize investment outcomes. Such analytical advancements align closely with the QoL metric's objective of streamlining the property selection process and refining the ranking of real estate listings. Additionally, generative AI contributes to the automation of content creation in real estate marketing and enhances tenant screening methodologies, ensuring that property listings are systematically curated to align with

consumer expectations. The integration of AI-powered computer vision in property evaluation further strengthens the QoL metric by automating quality assessments derived from listing images, thereby curbing the dissemination of misleading or deficient property information.

Blockchain technology's integration into real estate transactions, as delineated by Owotemu and Ibaru, further reinforces the foundational objectives of the QoL metric, particularly in fostering trust and data integrity. The study examines platforms such as HouseAfrica and Empowa, which employ Blockchain to verify land titles and streamline housing finance, effectively curtailing fraudulent activities and enhancing accessibility to housing opportunities. These findings suggest that embedding Blockchain-supported verification mechanisms into the QoL metric could fortify listing credibility while simultaneously mitigating concerns related to deceptive property information. Moreover, the study elucidates AI's role in automating credit scoring and loan servicing, aspects that significantly impact prospective buyers' ability to secure financing with efficiency. The QoL metric, if integrated with AI-driven financial assessment models, could provide prospective homebuyers with instantaneous mortgage eligibility evaluations, thereby streamlining the purchasing process.

While AI adoption in real estate yields substantial operational benefits, Owotemu and Ibaru acknowledge the ethical and regulatory complexities inherent in such technological deployments. Algorithmic bias and job displacement remain central concerns, as AI-driven models may inadvertently perpetuate inequities embedded within historical datasets. This issue is particularly salient to the QoL metric, necessitating the implementation of bias-mitigation strategies to ensure equitable and inclusive property evaluations. Additionally, the authors underscore the importance of regulatory frameworks that strike a balance between fostering innovation and safeguarding consumer rights, an imperative that must be integrated into the broader discourse on AI-driven real estate solutions.

Through robust empirical modelling, Owotemu and Ibaru establish a strong correlation between AI adoption and improvements in housing finance accessibility, project management efficacy, and market transparency. Their econometric analyses substantiate the potential for AI to enhance real estate market efficiencies, lending quantitative credence to the integration of AI within the QoL metric. Furthermore, their findings regarding AI's macroeconomic implications indicate that emerging markets stand to derive significant advantages from AI-augmented real estate platforms,

thereby reinforcing the potential scalability of the QoL metric across diverse urban geographies.

A notable contribution of the study is its identification of critical gaps in the literature, particularly concerning the need for region-specific analyses of AI adoption in real estate markets within emerging economies. This further validates the importance of the QoL metric as a localised, context-sensitive analytical instrument. By advancing property search methodologies and leveraging AI for market comparisons, the QoL metric can function as a dynamic framework tailored to the nuanced needs of real estate buyers, particularly in major U.S. metropolitan areas. Furthermore, the study's exploration of AI's role in sustainable urban development converges with the QoL metric's objective of facilitating long-term property investment strategies, reinforcing the need for environmental and sustainability considerations within real estate evaluations.

The role of speculative activity in the housing market has been extensively studied in economic and financial literature, with particular focus on its implications for housing price volatility, market inefficiencies, and economic stability (Shiller, 2005; Glaeser, 2013). Recent research "Spatial analysis of speculation in the US housing market" (Manochehri, 2025) advances this discourse by conducting a spatial analysis of speculation in the U.S. housing market, providing empirical insights into its regional variations and macroeconomic consequences. The findings of this study offer a valuable extension to the existing literature, particularly in understanding the geographic disparities in speculative activity and their implications for housing affordability and economic resilience.

Manochehri employs advanced econometric techniques, including nonlinear least squares (NLS) and time-varying parameter ordinary least squares (TVP-OLS), to measure speculative intensity across different U.S. states. Their results reveal significant heterogeneity in speculative activity, with western and midwestern states exhibiting higher levels of speculation compared to their eastern counterparts. These findings align with prior research on speculative bubbles, particularly the theories proposed by Shiller, which emphasise the role of price expectations and feedback loops in speculative markets. The study provides further validation of the notion that speculative investment is not uniformly distributed across markets but rather is influenced by localised supply constraints, historical price trends, and regional economic conditions.

A key contribution of Manochehri is the introduction of a speculation index that quantifies the extent of speculative activity across all 50 U.S. states. This empirical measure is particularly relevant to the Quality of Listing (QoL) metric proposed in this thesis, as it provides a methodological framework for assessing the impact of speculative distortions on housing availability and pricing. By incorporating speculative activity as a factor in housing market assessments, the QoL metric can be refined to account for market distortions that misrepresent the intrinsic value of properties. The delay parameter (φ) introduced in the study, which indicates when speculative activity began in different states, is particularly useful for identifying long-term trends in housing market inefficiencies. Understanding these trends enables a more robust evaluation of housing quality metrics, as speculative surges may inflate prices without corresponding improvements in housing quality or liveability.

Furthermore, the findings of Manochehri underscore the importance of regulatory interventions in mitigating excessive speculation. The study suggests that policies such as stricter lending standards and increased transparency in real estate transactions can help stabilise markets prone to speculative bubbles. These insights have direct implications for the proposed QoL metric, as they highlight the necessity of incorporating policy-driven risk assessments into housing evaluations. In markets with high speculative activity, housing affordability metrics must be adjusted to reflect the extent to which prices are inflated beyond their fundamental value.

By integrating the spatial dimension of speculation into the broader discourse on housing market dynamics, Manochehri provide a comprehensive framework for assessing the interplay between investment behaviour and housing accessibility. The empirical findings contribute to the theoretical foundation of this thesis by demonstrating how speculative pressures shape regional housing markets and distort price signals. These insights reinforce the need for a nuanced approach to real estate data analytics, where speculative influences are explicitly considered in the development of housing market evaluation models.

The spatial analysis of speculation in the U.S. housing market presents a critical lens through which to assess the complexities of real estate investment behaviour. The empirical methodologies employed by Manochehri offer valuable tools for refining the QoL metric, ensuring that speculative distortions are accounted for in housing affordability and liveability assessments. Integrating these findings into the literature review strengthens the theoretical underpinnings of this research, providing a more

comprehensive understanding of the factors influencing real estate market efficiency and consumer decision-making.

Research “Impact of Transformative Technologies on Indian Global Capability Centres: A Leadership Perspective” (Thukral, 2025) provides a comprehensive examination of the role of transformative technologies in the evolution of Global Capability Centres (GCCs) in India, reframing these institutions as critical nodes of strategic innovation rather than peripheral cost-optimisation entities. The study elucidates the pivotal contributions of artificial intelligence (AI), machine learning (ML), cloud computing, and the Internet of Things (IoT) in redefining the operational frameworks of GCCs. These insights bear direct relevance to this dissertation’s inquiry into the Quality of Listing (QoL) metric for real estate analytics, particularly in illustrating how emergent technological paradigms enhance data-driven decision-making, process automation, and service optimisation.

The author findings underscore the increasing centrality of AI and data analytics within Indian GCCs, offering an instructive analogue to the real estate sector’s growing reliance on computational methodologies for property valuation. The study highlights AI-powered automation’s capacity to refine operational workflows and augment the predictive accuracy of analytical models, mirroring the intended function of the QoL metric in optimising property searches and facilitating more informed buyer decision-making. The integration of AI in GCCs to enhance customer-centric models and service efficacy reflects the prospective deployment of AI in real estate analytics, where algorithmically refined assessments can deliver tailored property recommendations aligned with consumer preferences and financial parameters.

Additionally, Thukral delineates the establishment of Centres of Excellence (CoEs) within GCCs as a direct consequence of digital transformation, thereby institutionalising continuous technological refinement and knowledge dissemination. This structural adaptation within GCCs presents a transferable model for real estate data analytics firms, where an analogous CoE could be dedicated to the iterative enhancement of the QoL metric. Such an approach would ensure that the metric remains responsive to shifting market dynamics and evolving consumer behaviours, reinforcing its efficacy as a robust evaluative instrument in real estate transactions.

A further critical dimension of Thukral’s analysis concerns the inherent challenges associated with technological assimilation, including workforce competency deficits, regulatory constraints, and infrastructural inertia. These challenges are particularly germane when considering the scalability and adoption trajectory of the QoL metric,

as real estate analytics enterprises will encounter comparable impediments. Ensuring data security, regulatory compliance, and user trust will be indispensable in facilitating widespread integration and legitimacy of the QoL metric within the broader marketplace.

The role of business planning in the performance of new ventures has been the subject of considerable scholarly discourse, with divergent perspectives regarding its efficacy. Burke, Fraser, and Greene in article “The multiple effects of business planning on new venture performance.” (Burke, 2010) provide a rigorous examination of this relationship, asserting that the impact of business planning is multifaceted and contingent upon the specific objectives and contextual conditions in which the plan is conceived. Findings offer valuable insights into the development of strategic business models, particularly in data-driven enterprises within the real estate sector, such as those implementing the Quality of Listing (QoL) metric.

Empirical evidence presented by Burke suggests that business planning exerts a substantive influence on venture growth, primarily through two key mechanisms: augmenting entrepreneurial capacity and facilitating resource acquisition. These findings corroborate the proposition that a structured business plan serves as both a cognitive framework and a strategic instrument, enabling entrepreneurs to articulate their vision, refine market entry strategies, and communicate effectively with key stakeholders, including investors. In the highly data-dependent real estate market, where the QoL metric seeks to enhance the quality and transparency of property listings, meticulous business planning confers a competitive advantage by ensuring conceptual clarity and strategic coherence.

Moreover, the study underscores the significance of contextual factors in shaping the utility of business plans. While enterprises operating in stable, predictable markets derive substantial benefits from business planning, those in dynamic and uncertain environments may encounter limitations. The development and application of the QoL metric necessitate a structured yet flexible business model that can adapt to fluctuations in real estate data quality and market conditions. Business planning, in this regard, functions as a mechanism to systematically address data inconsistencies, optimise analytical methodologies, and refine consumer engagement strategies.

A critical dimension explored by Burke is the selection effect, wherein ventures that elect to engage in business planning differ systematically from those that do not. Employing econometric modelling, the study disentangles the impact of business planning from selection biases, demonstrating a net positive effect on employment

growth. This insight is particularly relevant for real estate data analytics, where the QoL metric's success hinges on the firm's ability to aggregate, standardise, and interpret vast volumes of property data. A comprehensive business plan serves as a structural blueprint, ensuring that the firm's value proposition is coherently articulated to investors, partners, and customers, thereby fostering scalability and operational sustainability.

Additionally, Burke emphasises the role of business planning in securing external validation, particularly in the context of financial investment. Business plans function as an evaluative instrument for financial institutions, enabling entrepreneurs to substantiate their market understanding and strategic foresight. This principle is directly applicable to the QoL metric initiative, which requires substantial investment in data acquisition, algorithm development, and commercial deployment. A meticulously constructed business plan enhances investor confidence by delineating the economic viability, practical utility, and competitive differentiation of the QoL metric within the broader real estate ecosystem.

While Burke affirms the benefits of business planning, its limitations are also acknowledged, particularly in sectors characterised by high innovation velocity, where iterative development and real-time market feedback are paramount. This insight is especially pertinent to the QoL metric, as the real estate sector's evolving data landscape necessitates a dynamic, adaptable approach. The study suggests that while business planning establishes a foundational strategic direction, it must be supplemented with agile methodologies that accommodate ongoing refinements based on empirical validation and market responsiveness. Such an approach aligns with contemporary algorithmic development paradigms, wherein iterative testing and data-driven refinements are essential for optimising predictive accuracy and user engagement.

Liao and Gartner in article "The influence of pre-venture planning on new venture creation" (Liao, 2007) undertake a rigorous examination of pre-venture planning and its implications for new venture creation, utilising data from the Panel Study of Entrepreneurial Dynamics (PSED). Their findings underscore the pivotal role of structured business planning in significantly enhancing the probability of venture initiation. Specifically, their empirical analysis reveals that entrepreneurs who complete a business plan are six times more likely to transition from ideation to operationalisation compared to those who forgo this process. Furthermore, their study

establishes a strong correlation between the formalisation of planning efforts and successful business creation.

Beyond its instrumental role in structuring entrepreneurial endeavours, business planning serves as a mechanism for resource identification, strategic foresight, and stakeholder communication. These facets closely align with the theoretical underpinnings of the Quality of Listing (QoL) metric proposed in this research. The QoL metric functions as a systematic, data-driven evaluative tool designed to optimise real estate decision-making. By delineating key criteria, weighting significant variables, and systematically organising market data, the QoL metric embodies the principles of strategic planning, thereby improving the efficiency of property searches. The congruence between structured entrepreneurial planning and the QoL metric reinforces the broader argument that methodical, empirically grounded approaches yield superior decision-making outcomes.

Nevertheless, the study acknowledges the potential drawbacks of excessive planning, particularly in the form of "analysis paralysis." This phenomenon arises when individuals prioritise extensive strategizing at the expense of timely execution. This concern is particularly salient in dynamic real estate markets, where rapid fluctuations necessitate a balance between structured planning and adaptive decision-making. Ensuring that the QoL metric remains a functional rather than cumbersome tool requires careful calibration to prevent information overload while maintaining analytical rigour.

Within the broader entrepreneurial discourse, the study also highlights the signalling function of business planning. Planning differentiates serious, committed entrepreneurs from those who are less inclined to follow through with their business initiatives. Similarly, in the real estate context, the QoL metric can serve as a legitimacy-enhancing tool, offering structured, transparent evaluation criteria that improve trust and confidence among stakeholders. By facilitating an objective assessment of listing quality, the QoL metric aligns with the prevailing scholarship on structured evaluation mechanisms as drivers of market efficiency.

The study further underscores the role of government-sponsored entrepreneurial support programs in fostering successful venture creation. Entrepreneurs who engage with such programs are five times more likely to successfully establish their businesses, illustrating the efficacy of structured external support mechanisms. This finding strengthens the case for embedding external validation processes within the

QoL metric, such as third-party certifications or expert reviews, to enhance its credibility and user adoption.

The impact of pre-start-up business planning on venture performance remains a contested issue within entrepreneurial scholarship. Academic article “Pre-start-up formal business plans and post-start-up performance: A study of 116 new ventures” (Lange, 2007) undertakes a critical examination of this dynamic, assessing whether the presence of a formalised business plan prior to launch substantively influences post-start-up performance. Drawing from a dataset comprising 116 ventures founded by Babson College alumni, their empirical analysis reveals that the existence of a pre-launch business plan does not inherently correlate with superior performance metrics, including revenue generation, net income, or workforce expansion. These findings challenge the prevailing orthodoxy that prescribes business planning as a foundational determinant of entrepreneurial success.

The implications of these findings for the present research are significant, particularly concerning the efficacy of structured business planning in ventures predicated on algorithmic decision-making and data analytics. Lange contributes to a growing body of literature advocating for a more agile, iterative approach to business development. The academic paper suggests that rather than adhering to an exhaustive pre-launch blueprint, entrepreneurs operating in data-intensive domains may derive greater strategic value from adaptive models that integrate continuous market feedback. This perspective is especially relevant in industries where consumer behaviour, technological advancements, and dynamic data interactions shape strategic imperatives.

Furthermore, the study elucidates the role of external financing in determining the necessity of formalised business plans. Ventures requiring substantial capital infusion from institutional investors are often compelled to produce comprehensive business documentation as a prerequisite for securing funding. Conversely, bootstrap enterprises and self-funded initiatives may experience marginal benefits from early-stage formal planning. This distinction is particularly pertinent to the business model explored in this thesis. The development of the Quality of Listing (QoL) metric, designed to enhance real estate decision-making, may necessitate a planning approach that privileges adaptability and empirical validation over rigid, pre-formulated business documentation.

Additionally, Lange highlights the intersection of entrepreneurial performance with demographic and educational variables. The research indicates that ventures founded by individuals holding undergraduate degrees, as opposed to MBA credentials, exhibit stronger performance outcomes. This suggests that direct industry engagement and experiential learning may confer greater entrepreneurial advantages than theoretical planning. This insight bears direct relevance to the proposed business model in this thesis, which prioritises expertise in data analytics as a fundamental competency over conventional business planning paradigms.

Within the broader discourse of real estate data analytics, the findings of this study advocate for a methodological shift towards iterative development and strategic flexibility, rather than rigid adherence to conventional business planning frameworks. By integrating these insights, the QoL metric business plan can be conceptualised as a dynamic and evolving construct, rather than a static, pre-determined roadmap. This approach aligns with contemporary entrepreneurial methodologies emphasising lean start-up principles (Bortolini, 2021), continuous testing, and iterative refinements informed by empirical data. As such, this literature substantiates the argument that algorithmic innovations in real estate necessitate an adaptive and empirically grounded business development strategy rather than a conventional, static planning model.

The role of digitalisation in increasing transparency within real estate markets has gained significant attention in recent years, particularly in the context of improving information accessibility for stakeholders. The study “Improvement of the real estate transparency through digitalisation” (Ionașcu, 2020) provides an in-depth exploration of how digital technologies, commonly referred to as PropTech, are transforming the real estate industry by fostering transparency and efficiency in transactions. The findings align with the Quality of Listing (QoL) metric, as they highlight the importance of structured, accessible, and reliable data in property markets.

Ionașcu and Anghel argue that transparency is a fundamental characteristic of well-functioning real estate markets and is closely linked to corporate governance. They emphasise that the lack of transparency remains a significant barrier to investment and efficiency in property transactions. Their research reveals that digital tools such as blockchain, automated valuation models (AVMs), and smart building technologies have the potential to enhance market transparency by providing real-time, structured, and verifiable data. In the context of the QoL metric, these technological

advancements could support the development of more accurate and objective property listings, reducing information asymmetry for buyers and investors.

Their study also addresses the disparity in transparency levels across different types of real estate entities, noting that Real Estate Investment Trusts (REITs) tend to exhibit higher levels of transparency due to regulatory obligations and market expectations. This observation is particularly relevant to the QoL metric, as it underscores the necessity for standardised data practices across the industry to ensure consistency in property evaluations. The integration of digital tools into real estate reporting, particularly through sustainability reports and external assurance mechanisms, further reinforces the need for a robust framework in which property listings are evaluated using transparent and consistent criteria.

Moreover, the study highlights the slow adoption of digitalisation in real estate, a factor that poses challenges to achieving full market transparency. While the use of PropTech has increased in highly developed markets such as the United States, Canada, and Western Europe, its penetration remains limited in less transparent markets. The QoL metric could benefit from insights drawn from this digital divide, as the metric's effectiveness would depend on the extent to which reliable and standardised data sources are available across different geographies.

A crucial finding of the study relates to the role of data analytics in shaping real estate decision-making. The authors discuss how big data and machine learning applications can enhance the precision of property valuations and improve the predictability of market trends. This directly contributes to the conceptual foundation of the QoL metric, as it suggests that incorporating data-driven approaches into property listings could significantly enhance buyers' ability to assess properties based on quality indicators. The implications for user experience in real estate transactions are profound, as buyers increasingly rely on digital platforms to compare property attributes, location quality, and price efficiency.

The findings presented by Ionașcu and Anghel provide a strong theoretical basis for integrating digital transparency mechanisms into the development of the QoL metric. Their emphasis on the role of digitalisation in improving access to structured real estate data supports the notion that an effective listing metric must incorporate automated, data-driven processes. By leveraging insights from PropTech and sustainability reporting, the QoL metric can be positioned as a tool that not only enhances buyer decision-making but also contributes to broader market transparency initiatives. Thus, their research offers valuable contributions to the literature on real

estate digitalisation and serves as a foundational reference for exploring how data-driven metrics can optimise property search and investment decisions.

The study “Can digital technologies speed up real estate transactions?” (Saull, 2020) provides a structured investigation into the causes of delays in commercial real estate transactions and evaluates the potential of digital technologies to improve transaction efficiency. This research is highly relevant to the development of a Quality of Listing (QoL) metric, as it highlights the importance of standardised, accessible, and up-to-date property information, a core challenge that the QoL metric seeks to address.

A key finding of the study is that the absence of a centralised, standardised database of property information represents a critical bottleneck in real estate transactions. Buyers often face inefficiencies in gathering relevant property details, resulting in lengthy due diligence processes. This aligns with the premise of the QoL metric, which aims to consolidate property data in a structured and accessible manner to improve decision-making efficiency. The study suggests that digital property passports, which compile and store all relevant property data, could significantly streamline transactions. However, adoption barriers, including legal constraints, industry resistance to data-sharing, and integration challenges with existing legacy systems, have hindered their widespread implementation. These barriers present potential challenges for the deployment of the QoL metric and highlight the necessity of overcoming data-sharing reluctance within the real estate industry.

The research further explores technological solutions such as blockchain-based smart contracts, automated valuation models (AVMs), and machine learning-based lease extraction tools, each of which has implications for property listing quality. Blockchain technology could enhance transparency and trust in property transactions, potentially reducing information asymmetry and improving the reliability of property listings. Automated valuation models offer a data-driven approach to price estimation, a feature that could be integrated into the QoL metric to provide more accurate assessments of property value relative to listing attributes. Similarly, the use of artificial intelligence for lease and document analysis underscores the potential of machine learning in automating property evaluations and ensuring that listings include complete and accurate information.

Despite the potential of these technologies, the study underscores persistent barriers to adoption, including regulatory challenges, operational integration issues, and social resistance to technological disruption. Many real estate professionals remain hesitant to embrace digital transformation, fearing disintermediation and data security risks.

The study's findings suggest that widespread adoption of digital property records and valuation models will require industry-wide collaboration, regulatory adjustments, and financial incentives to encourage data transparency.

In the context of the QoL metric, these insights are instrumental in identifying potential implementation challenges and technological enablers. The research supports the notion that data standardisation and improved information accessibility are fundamental to enhancing listing quality. The QoL metric could serve as an intermediary solution, leveraging elements of digital property passports and automated valuation techniques while addressing industry concerns about data integrity and market adoption. Additionally, the study provides a foundation for evaluating potential integrations of blockchain and AI-driven analytics within the QoL framework to enhance reliability and efficiency in property listings.

By situating the QoL metric within the broader discourse on digital transformation in real estate, the study by Saull contributes to the theoretical foundation of this research. It reinforces the necessity of overcoming data fragmentation and transaction inefficiencies, demonstrating that a comprehensive approach to listing quality can significantly benefit both buyers and sellers. The findings also suggest that policy interventions and industry cooperation will be crucial in ensuring the successful deployment of data-driven solutions in real estate markets.

Academic paper "The value of business planning before start-up - A decision-theoretical perspective" (Chwolka, 2011) provide a rigorous decision-theoretical framework for analysing the role of business planning in entrepreneurial ventures. The study departs from the conventional ex-post empirical analyses that examine the correlation between business planning and firm performance after market entry. Instead, the authors adopt an ex-ante perspective, assessing how business planning influences the entrepreneur's decision to enter the market in the first place. The key argument presented is that business planning holds significant value, primarily because it enables nascent entrepreneurs to evaluate the viability of their business ideas, thereby preventing unpromising ventures from entering the market.

The decision-theoretical approach outlined in the paper aligns with the fundamental objectives of this thesis, which focuses on the development of a business plan for a data analytics company in the real estate domain. Specifically, the study reinforces the necessity of rigorous pre-market evaluation, particularly in environments characterised by high uncertainty. Given that the Quality of Listing (QoL) metric is an innovative concept aimed at optimising property search efficiency, the decision to

proceed with its commercialisation must be informed by a structured evaluation of its market potential. Chwolka and Raith's findings suggest that the process of business planning should be viewed as a mechanism for gathering and processing diagnostic information about market conditions, competition, and expected financial performance, thereby mitigating the risks of premature or ill-informed market entry.

A key insight from the study concerns the impact of planning on the entrepreneur's decision to start or abandon a venture. The authors demonstrate that planning does not necessarily increase the number of start-ups; rather, it reduces the likelihood of failure by filtering out unviable projects before they reach the market. This perspective is particularly relevant for the present research, as the QoL metric, being a novel analytical tool, requires careful validation before launch. Given the complexities of the U.S. real estate market—characterised by vast amounts of listing data, varying data quality standards, and the presence of well-established competitors—a robust business planning framework can help determine whether the QoL metric holds sufficient competitive advantage and market demand.

Another relevant implication of Chwolka and Raith's study is the differentiation between business planning as an evaluative tool versus its role in opportunity development. The former refers to assessing the feasibility of an idea, while the latter involves refining and optimising a business model to enhance market performance. This distinction supports the iterative approach proposed in this thesis, where the QoL metric is subject to multiple validation stages before full-scale implementation. The authors argue that the quality of planning is crucial in this process, as higher-quality planning increases the probability of correctly identifying promising business opportunities while reducing the likelihood of pursuing suboptimal ventures.

Moreover, the study challenges the common critique that business planning is an unnecessary bureaucratic hurdle that delays market entry. On the contrary, it posits that while planning does take time, its primary benefit lies in improving decision quality, rather than in accelerating firm creation. For a data-driven business such as the one envisioned in this thesis, this finding is particularly salient. The QoL metric relies on sophisticated data analytics, and its success hinges on precise market segmentation, technological feasibility, and customer adoption rates. A well-developed business plan, as advocated by Chwolka and Raith, ensures that these factors are thoroughly analysed before significant financial and strategic commitments are made.

While existing literature extensively explores digital transformation in real estate and the impact of emerging technologies, there is currently no established Quality of Listing (QoL) metric to systematically assess the effectiveness and transparency of property listings. The studies reviewed demonstrate that advances in AI, big data, and blockchain have the potential to revolutionise property search and valuation processes, yet a standardised evaluative framework remains absent. Simultaneously, research on business planning consistently shows that structured, data-driven approaches enhance decision-making, resource allocation, and market legitimacy. Collectively, these insights strongly support the conclusion that the creation of a QoL metric is both a promising and necessary venture to bridge current gaps, enhance market efficiency, and foster greater consumer trust in an increasingly digital real estate landscape.

4 Creation of a business plan for the venture

The following chapter includes the outline of the business plan created with the aim to access the business idea and its viability.

4.1 Vision and mission

The vision is to transform property searches by introducing a Quality of Listing (QoL) metric that simplifies decision-making for property buyers and highlights the best value-for-money options. This entails creating a future where buyers navigate the real estate market with confidence, aided by a QoL platform integrated into major online property listing sites. Achieving this vision involves building a strong user base, expanding implementation nationwide, and securing investor support to drive further growth and innovation.

The mission is to enhance the real estate purchasing for buyers, reduce information overload and guide buyers toward optimal property choices. By forming strategic partnerships with property listing platforms, the mission is to offer transparent, efficient, and reliable property insights that maximise value for homebuyers across the United States.

4.2 Objectives

4.2.1 Objectives for Year 1

The first year is dedicated to establishing a strong foundation for the Quality of Listing (QoL) platform through four key objectives: algorithm development and validation; team formation and operational setup; prototype launch and initial platform integration; and the establishment of a data collection and improvement cycle.

Algorithm Development and Validation

The development and validation of the QoL algorithms will begin with partnerships with two leading technology universities. By hosting hackathons at these institutions, the goal is to select the top two QoL algorithms for simultaneous development and testing by the end of the second quarter (Q2). Both algorithms will undergo parallel validation and refinement processes, aiming to complete functional prototypes for each by the fourth quarter (Q4). This approach allows for a comparative analysis to determine the most effective solution that meets user needs.

Team Formation and Operational Setup

By the end of the first quarter (Q1), a core team of ten professionals will be assembled. This team will comprise algorithm developers, data scientists, real estate advisors, and marketing specialists. The formation of this multidisciplinary team is crucial for supporting ongoing platform development and operational needs. Alongside team assembly, the necessary infrastructure and workflows will be established to achieve operational readiness by mid-year. This includes setting up development environments, data pipelines, and collaborative tools to facilitate efficient teamwork.

Prototype Launch and Initial Platform Integration

In the third quarter (Q3), the QoL prototype will be integrated with a pilot online property listing platform. This integration is essential for collecting user feedback, which will inform iterative improvements to enhance performance and accuracy. The objective is to achieve a 70% satisfaction rating from users of the pilot platform by the end of the year. This satisfaction rating will be based on metrics such as ease of use and the relevance of property suggestions provided by the QoL metric.

Data Collection and Improvement Cycle

To refine the QoL metric's effectiveness and user experience, two rounds of feedback collection and platform updates will be conducted during the year. These cycles involve gathering user insights, analysing the data, and implementing improvements to the platform. Additionally, quarterly updates will be delivered to incorporate user feedback, focusing on enhancements to the user interface, data accuracy, and feature accessibility. This iterative process is designed to ensure that the platform remains responsive to user needs and maintains a high level of quality.

4.2.2 Objectives for Year 2

In the second year, the focus shifts to expanding the reach and impact of the Quality of Listing (QoL) platform through three main objectives: expansion of platform integration, market penetration and brand establishment, and securing funding and investor engagement.

Expansion of Platform Integration

By the end of the year, the goal is to expand the QoL platform's integration to a minimum of ten additional real estate listing sites. This expansion aims to increase the platform's accessibility and user base across the United States. Diversifying partnerships across multiple platforms is crucial to ensure business resilience and

sustainability, reducing dependency on any single partner. This strategy mitigates risks associated with platform-specific challenges and enhances the overall stability of the QoL service in the real estate market.

Market Penetration and Brand Establishment

The objective is to facilitate the purchase of 1% of all U.S. residential properties with the assistance of the QoL metric by the end of the year. Achieving this milestone will demonstrate the metric's effectiveness in guiding buyers toward optimal property choices and establish the platform as a trusted resource in real estate decision-making. To support this goal, targeted marketing campaigns will be implemented to increase brand visibility. The aim is to secure a 15% market share within the integrated property platforms, enhancing the platform's recognition and influence in the market.

Funding and Investor Engagement

Securing additional funding is essential for scaling efforts and supporting further expansion. By the third quarter (Q3), the objective is to secure a minimum of $2 million in funding. This will be achieved by presenting performance data, user satisfaction metrics, and market impact statistics to potential investors. The funding will be allocated toward enhancing the platform, expanding the user base, and implementing broader platform improvements in preparation for future growth. Engaging with investors will also provide strategic partnerships and resources beneficial for long-term success.

4.3 Action plan

This timeline presents a two-year strategic plan for developing and expanding the Quality of Listing (QoL) platform in the real estate analytics industry. It outlines quarterly objectives focused on algorithm development, team formation, platform integration, investor engagement, and achieving market penetration.

Year 1

Q1 (Months 1–3)

- Initiate algorithm development, build a multidisciplinary team, and establish essential infrastructure.
- Algorithm development Initiation: partner with two universities to host hackathons for identifying promising QoL algorithms.

- Recruitment and team formation: assemble a core team of 10 experts in data science, software development, marketing, and real estate.
- Infrastructure setup: establish cloud-based collaboration tools and technical infrastructure for remote work and development.

Q2 (Months 4–6)

- Select top algorithms and align the team with project objectives.
- Algorithm selection and onboarding: choose the top two QoL algorithms from hackathons, recruit their developers, and commence development.
- Team alignment and onboarding: complete onboarding for new team members, ensuring alignment with goals and protocols.
- Operational readiness check: confirm that workflows and infrastructure support active development.

Q3 (Months 7–9)

- Develop prototypes and plan for pilot integration.
- Prototype development: create functional prototypes of the QoL algorithms with initial testing and refinement.
- Pilot platform selection: identify and finalise an online property listing platform for pilot integration.
- Integration planning: prepare technical documentation for integrating the QoL prototype with the pilot platform.

Q4 (Months 10–12)

- Launch the prototype and gather user feedback for improvements.
- Prototype launch and feedback collection: deploy the QoL prototype on the pilot platform, initiating data collection and feedback.
- User feedback mechanism setup: establish surveys and analytics to gather insights and identify areas for improvement.
- First quarterly update: release an update enhancing the user interface, data accuracy, and QoL metric functionality based on feedback.

Year 2 Timeline

Q1 (Months 13–15)

- Prepare for investor outreach and continue refining the QoL metric.

- Investor outreach preparation: develop a pitch deck showcasing milestones, user feedback, and successes to attract investors.
- Second quarterly update: implement updates to improve the QoL metric's performance and usability.
- Additional platform targeting: identify potential property listing sites for further integrations.

Q2 (Months 16–18)

- Secure funding and expand platform partnerships.
- Initiate investor engagement: present the business case and metrics to potential investors to secure $2 million in funding.
- Platform expansion: begin integrating with 3–5 additional real estate platforms to diversify partnerships.
- Marketing campaign kick-off: launch campaigns to educate users about the QoL metric's value in property searches.

Q3 (Months 19–21)

- Scale integrations and establish thought leadership in the industry.
- Continued platform Integration: expand QoL integration to additional property listing sites, aiming for 10 platforms by year-end.
- Mid-year investor presentation: present updated metrics and successes to maintain investor interest.
- Educational content development: create webinars, case studies, and blogs to position the QoL platform as a leader in real estate analytics.

Q4 (Months 22–24)

- Scale operations and prepare for national expansion.
- Funding utilisation and scaling: use secured funds to optimise the platform for broader usage and national reach.
- 1% market penetration target: aim to facilitate 1% of U.S. residential property transactions using the QoL metric.
- End-of-year review and planning: conduct a performance review and develop a scale-up plan for the next year.

The strategic plan outlines a two-year roadmap, where year 1 focuses on foundational activities: developing algorithms through university partnerships, assembling a specialised team, and establishing infrastructure, leading to prototype creation and

pilot testing. Year 2 emphasises expansion and scalability by securing $2 million in investment, integrating with additional property platforms, and launching marketing initiatives to enhance brand awareness, aiming for a 1% market penetration by year-end.

4.4 Market segmentation

4.4.1 End user

The end user for the Quality of Listing (QoL) metric is a homebuyer navigating vast U.S. real estate market, where a big number of listings and extensive data make it challenging to make confident decisions. This user values efficiency and aims to balance price, location, and features of properties to maximise value within their budget. They juggle a busy lifestyle and seek tools that can quickly narrow down the most relevant listings, saving time and effort in the process. The user is comfortable with digital platforms but not necessarily an expert in real estate. They are often focused on purchasing in competitive urban areas, where the ability to efficiently evaluate and compare properties is particularly valuable.

4.4.2 Lead customers

Early adopters of the QoL metric platform would likely include high-income professionals, such as software engineers, consultants, and tech entrepreneurs, who are accustomed to using data-driven tools and value efficiency. Other potential users might include high-earning medical professionals, such as doctors or specialists, who have demanding schedules and limited time for property searches, as well as financially savvy first-time homebuyers in urban markets seeking to optimise their investment. Real estate agents working with affluent clients could also adopt the platform, leveraging it as a premium service to enhance their clients' home-buying experience.

4.4.3 Market characteristics

The U.S. market offers a promising environment for adopting the QoL metric platform due to its tech-savvy population, competitive real estate landscape, and increasing comfort with data-driven tools. Buyers, especially in high-demand urban areas, seek ways to make informed and quick property decisions, which aligns well with the time-saving benefits of the QoL metric. Additionally, the established presence of digital listing platforms creates a solid foundation for partnerships and scalability. However,

the market also presents challenges. U.S. consumers have high expectations for user experience, so the platform must be intuitive and seamless to gain traction. Growing concerns around data privacy mean that transparency and compliance are critical for earning user trust.

4.4.4 Partners/players

To deliver the best experience for end users, the QoL metric platform would benefit from partnerships with major U.S. real estate listing platforms such as Zillow, Realtor.com, and Redfin. These platforms already have large, established user bases and are widely trusted by property buyers. This makes them ideal partners for integrating the QoL metric directly into users' existing search experiences. Collaborations with these companies would allow the metric to be seamlessly embedded into property listings, providing immediate, easy-to-access insights.

Additionally, partnering with data providers, such as CoreLogic (CoreLogic, 2024) and ATTOM Data Solutions (ATTOM Data Solutions, 2025), would enhance the QoL metric by supplying rich, up-to-date property data on market trends, pricing, location attributes, and other key factors. This data would improve the metric's accuracy and relevance, ensuring that it remains aligned with real-time market conditions.

Collaboration with financial institutions, including mortgage providers like Rocket Mortgage or Bank of America's mortgage division, could further enhance the user experience. Such partnerships would enable users to easily explore financing options and understand the affordability of properties scored by the QoL metric, integrating financial considerations into their search.

These partnerships with real estate platforms, data providers, and financial institutions would help create a comprehensive and streamlined property search experience for end users, increasing both the value and usability of the QoL metric.

4.4.5 Size of the market

The potential user base for the Quality of Listing (QoL) metric platform can be estimated by examining the U.S. real estate market's activity.

In 2023, approximately 4 million existing homes were sold in the United States (Statista, 2024). This figure includes single-family homes, condominiums, and co-ops.

Assuming that all homebuyers are potential users of the Quality of Listing (QoL) metric platform, this figure represents the total addressable market. However, considering that the platform is particularly appealing to tech-savvy individuals who value efficiency, the serviceable obtainable market would be a subset of this total, focusing on buyers who actively seek digital tools to enhance their property search experience.

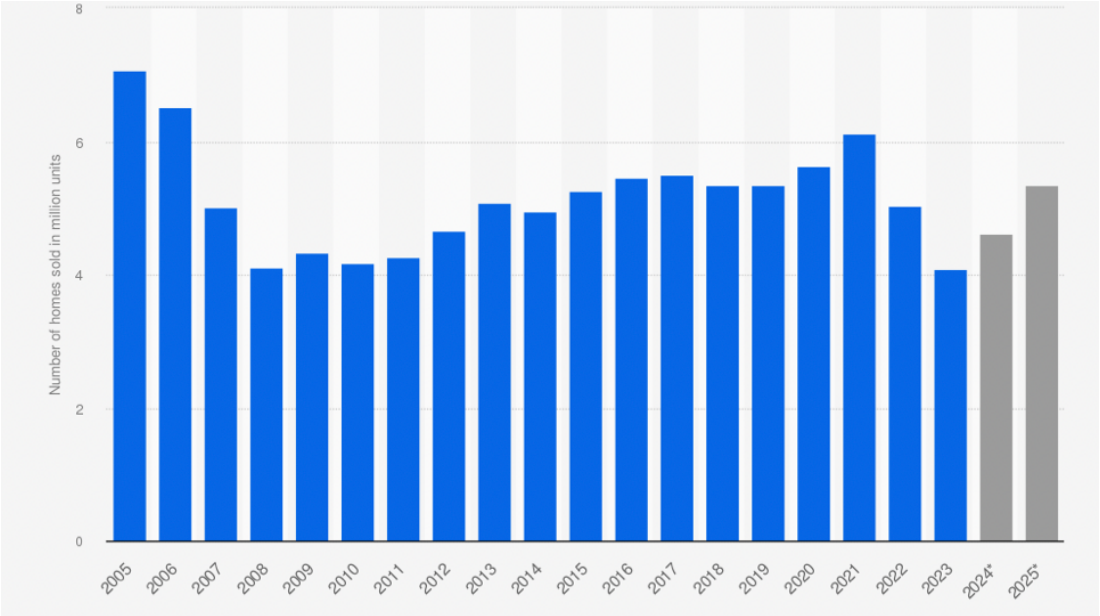

Figure 1: Number of existing homes sold in the US from 2005 to 2023, with a forecast until 2025, in million units (source – National Association of Realtors, Statista 2024)

4.4.6 Competition

In the U.S. real estate market, the Quality of Listing (QoL) metric platform would encounter competition from several established entities and emerging technologies:

- CoreLogic - leading provider of property information, analytics, and data-enabled services, CoreLogic offers comprehensive property data, advanced analytics, and risk assessment tools to real estate professionals, financial institutions, and insurance companies (CoreLogic, 2024).
- ATTOM Data Solutions is extensive property data warehouse. ATTOM delivers property data, foreclosure information, and neighbourhood insights to various industries, including real estate, mortgage, and insurance sectors (ATTOM Data Solutions, 2025).
- Realeflow - AI-driven software provider for the residential real estate market, Realeflow offers tools that predict the likelihood of property sales and enhance

search accuracy. By analysing various data points, including homeowner behaviour and market trends, Realeflow assists investors and agents in identifying potential opportunities (Realeflow, 2025).

4.4.7 Beachhead market

The selection of a beachhead market is informed by the geographical strongholds of potential listing service partners. For instance, Zillow's substantial presence in metropolitan areas (such as Seattle and San Francisco) positions these cities as advantageous initial markets. Similarly, Redfin's prominence in regions like Austin and Boston suggests these locales as viable options. Collaborating with Realtor.com could facilitate entry into diverse urban centres, including New York City and Chicago, where the platform maintains significant market share.

Moreover, the target demographic for the QoL metric should comprise tech-savvy, high-income individuals seeking efficient real estate solutions. Urban centres with a concentration of such populations, coupled with a competitive real estate environment, are ideal candidates for market entry. San Francisco, Seattle, and Austin not only align with these demographic criteria but also exhibit a robust infrastructure conducive to the adoption of innovative technological solutions.

Based on the comparative analysis of the aforementioned cities, the choice was narrowed down to Austin, Texas. Austin's combination of a tech-oriented, younger demographic and a dynamic real estate market presents an ideal environment for the initial deployment of the QoL metric.

Austin's population is characterised by a median age of 34.9 years, indicating a youthful and dynamic community. This demographic is typically more receptive to technological innovations, aligning well with the QoL metric's target audience of tech-savvy homebuyers (Census Reporter, n.d.).

The city's robust economic growth, driven by an influx of tech companies and young professionals, has significantly impacted the real estate market. As of October 2024, the median listing home price in Austin was $599,000, reflecting a 6.6% decrease year-over-year. This trend suggests a cooling market, potentially increasing buyer demand for tools that enhance decision-making efficiency (Realtor.com, n.d.).

Despite recent price adjustments, Austin's real estate market remains resilient. The city continues to attract new residents, maintaining steady demand. Forecasts for 2025-2026 suggest a balanced market with moderate price growth, indicating a stable

environment for introducing innovative real estate solutions (Norada Real Estate Investments, n.d.).

4.5 End user profile

The Quality of Listing (QoL) metric is specifically designed to cater to a distinct segment of homebuyers in Austin. This target audience represents a dynamic group, characterized by unique demographic, psychographic, and lifestyle traits that shape their approach to the home-buying process. The demographic profile of these individuals reveals an inclusive target market encompassing all genders, with a slight skew towards males, a reflection of the tech industry's broader composition. They are primarily aged between 25 and 44 years, which aligns with the median age of Austin residents and the age group most active in purchasing homes. In terms of financial standing, these homebuyers typically belong to households earning between $100,000 and $200,000 annually, a range indicative of the high salaries earned by tech professionals in the area.

Psychographically, this audience is driven by a strong preference for efficiency and technological integration. They are motivated by a desire to use innovative tools that simplify and streamline the often-complex home-buying journey. However, this ambition is tempered by underlying fears of making uninformed investment decisions in Austin's competitive real estate market, which could result in financial losses or missed opportunities. Their decision-making is further influenced by the ideals of tech entrepreneurs and industry leaders who champion smart living and technological progress, inspiring them to adopt similar values in their personal lives.

The lifestyle and media consumption habits of this group further illuminate their interests and behaviours. Leisure time is often spent enjoying Austin's vibrant social scene, dining at contemporary restaurants, attending live music events, or engaging in outdoor activities such as hiking and cycling. Their media habits reflect their tech-driven mindset, as they regularly read publications like *Wired* and *TechCrunch*, while staying informed through local news outlets such as the *Austin American-Statesman*. Online platforms like Reddit and LinkedIn are key channels for both information and networking. In terms of entertainment, they gravitate towards tech-centric content, favouring documentaries and series available on streaming services such as Netflix and Amazon Prime.

Consumer behaviour within this segment underscores their inclination toward tools and products that align with their technology-focused lifestyle. They are highly

motivated by solutions that save time and enhance decision-making efficiency, favouring innovations that integrate seamlessly into their daily routines. This group is distinguished by their early adoption of new technologies, a preference for data-driven decision-making, and a significant influence within their social and professional networks. As natural trendsetters, they often shape the opinions and behaviours of their peers, further amplifying their impact on the market. Together, these characteristics paint a detailed picture of the QoL metric's ideal end user, a forward-thinking individual whose preferences and habits define the demand for cutting-edge solutions in Austin's real estate landscape.

4.6 Total addressable market

4.6.1 Potential users

In order to estimate the Total Addressable Market (TAM) for the Quality of Listing (QoL) metric in Austin, Texas, recent home sales data was analysed to determine the number of potential users.

Based on a report on annual home sales in Austin according to the Austin Board of Realtors, in October 2024, the Austin-Round Rock-San Marcos area recorded 2,248 closed home sales, reflecting a 1.5% decrease compared to the same period in the previous year (Norada Real Estate Investments, n.d.).

Assuming the monthly sales figure remains consistent throughout the year, the annual home sales can be estimated at 26,976 homes. Additionally, if each home sale corresponds to a unique buyer, the Total Addressable Market (TAM) for the QoL metric would be approximately 26,976 users annually.

4.6.2 Pricing framework

The pricing framework for the Quality of Listing (QoL) metric is designed to align with the perceived value it delivers to end users, specifically addressing their need for time-saving and efficient decision-making in the property search process. To ensure affordability and accessibility, the maximum amount users will pay is limited to 0.1% of the average property price. Based on current market data, with the average property price in Austin estimated at $599,000, this sets a cap of $599 per user. The pricing strategy will include tiered options, such as a basic package priced around $300 and a premium package priced closer to the upper limit of $599, which would provide advanced analytics and personalised features. This structured approach

ensures flexibility for diverse user needs while capturing the unique value of the QoL metric.

Analytical services like the Quality of Listing (QoL) metric often use a funnel model for pricing, where most users choose the basic package, fewer pick the mid-tier, and only a small group opts for the premium option. About 65% of users go for the basic tier, priced at $300, which offers essential features at a low cost to attract new users. The mid-tier, chosen by 25% of users, costs $450 and includes extra features and better analytics, appealing to those who want more without paying for the premium package. Around 10% of users pick the premium tier, priced at $599, which provides advanced features, personalised recommendations, and dedicated support, targeting professionals or heavy users. While the basic tier generates the most revenue by volume, the premium tier, despite fewer users, significantly boosts revenue due to its higher price. This tiered pricing approach ensures a broad customer base and maximises earnings across all user types.

Detailed breakdown of the TAM calculation for the QoL metric in Austin shows how the TAM was derived, considering the tiered pricing structure and distribution of potential users across the different tiers. Total TAM for the beachhead market is just under $10 million per year.

Table 1: breakdown of the TAM calculation (source – self-developed)

	Tier	Price per User ($)	Share of Users (%)	Number of Users	Revenue ($)
	Basic	300	65	17534	5260200
	Mid	450	25	6744	3034800
	Premium	599	10	2698	1616102
Total				26976	9911102

4.7 Profile of the persona for the beachhead market

4.7.1 End user persona

Alex is a 32-year-old software engineer with a passion for innovation and problem-solving. Recently, Alex and their partner made a bold decision to relocate from the tech hub of San Francisco to the dynamic city of Austin, Texas. Drawn by Austin's

tech scene and more affordable housing options, Alex accepted a position at an AI startup, eager to contribute to cutting-edge projects in artificial intelligence.

With a household income of $150,000, Alex and their partner are in a comfortable financial position but are mindful of making smart, long-term decisions. They are currently renting a cozy apartment in one of Austin's trendy neighbourhoods while exploring options to buy their first home. Starting a family is on their horizon, and they hope to find a property that offers enough space to accommodate future needs—a home with a backyard for kids to play and proximity to good schools and vibrant community spaces.

Life in Austin has been an exciting change for Alex and their partner. They've embraced the city's eclectic culture, spending weekends exploring live music venues, trying out the latest farm-to-table restaurants, and enjoying Austin's signature outdoor activities, like hiking the Greenbelt or kayaking on Lady Bird Lake. Despite their busy schedules, they find time to stay connected with the community, attending tech meet-ups and cultural festivals that make Austin unique.

In their career, Alex thrives on innovation and efficiency. Working in a fast-paced environment at the AI startup means Alex is constantly juggling deadlines, new technologies, and collaborative projects. Time is a precious commodity, and Alex values tools that can streamline decision-making and free up bandwidth for what truly matters.

As Alex and their partner navigate the competitive Austin real estate market, they've felt the weight of information overload. With countless listings and a rapidly changing market, finding the right home has become an overwhelming process. That's where the Quality of Listing (QoL) metric comes in. When Alex discovers this innovative tool, they're immediately intrigued. The ability to quickly compare properties based on value, location, and personal preferences resonates with their data-driven mindset. The QoL metric offers exactly what Alex needs: clarity, efficiency, and confidence in making such a significant investment.

Armed with the QoL metric, Alex and their partner are optimistic about finding the perfect home to begin their next chapter—a place where they can thrive both personally and professionally in the vibrant city of Austin. Their story reflects the aspirations and challenges of many young professionals navigating life's milestones in a dynamic urban landscape.

4.7.2 Partner company persona

RealtyConnect is a well-established real estate listing platform specialising in connecting homebuyers with properties across urban and suburban areas in the United States. Known for its user-friendly interface and comprehensive property database, RealtyConnect caters to both first-time homebuyers and experienced investors seeking a seamless property search experience. The company's mission is to simplify the home-buying journey by providing accurate, accessible, and actionable information, while its vision is to become the leading digital platform that transforms how people buy homes, leveraging technology to make property searches intuitive and data-driven (National Association of REALTORS®, 2025).

The platform primarily attracts tech-savvy millennials and generation X homebuyers who value efficiency and innovation, as well as real estate agents and brokers who rely on its tools for market insights and lead generation. RealtyConnect is recognised for integrating cutting-edge technologies such as AI-driven personalised property recommendations and predictive analytics to forecast market trends. Its API-first approach ensures compatibility with third-party tools like the QoL metric, making it an ideal partner for integration.

A partnership between QoL and RealtyConnect offers mutual benefits. RealtyConnect would gain a competitive edge by incorporating QoL's comparative property metric, providing users with a unique feature that simplifies decision-making. For QoL, RealtyConnect's broad user base and strong market reputation offer an excellent platform to introduce the service, particularly in Austin's competitive real estate market. With a strong presence in Austin and other major U.S. cities, RealtyConnect consistently ranks as one of the top platforms for user engagement, driven by its innovative features and reliable data.

Through this partnership, QoL and RealtyConnect aim to streamline the home-buying process by delivering an integrated solution for property comparison, enhancing user satisfaction with actionable insights and intuitive features, and increasing market penetration by leveraging their combined strengths in technology and customer reach. RealtyConnect is the ideal partner for QoL due to its shared commitment to innovation and user empowerment, offering the technological adaptability and established market presence needed to ensure a successful collaboration.

4.7.3 Customer's need

Alex is frustrated with his home search in Austin's competitive real estate market. He starts by using popular property listing websites, spending hours scrolling through endless options. While filters help narrow his search by location, budget, and size, he still finds it hard to identify the best properties, second-guessing whether he's missing better opportunities. The overwhelming amount of information leaves him uncertain and stuck.

He considers hiring a real estate agent for guidance but hesitates due to the cost and fear of losing control over the process. As someone who values efficiency and data-driven decisions, he's unsure if an agent can meet his needs.

The turning point comes when Alex realises how much time he's wasting manually comparing listings—reading descriptions, analysing photos, and puzzling over price differences. This tedious process doesn't fit his busy schedule or his desire for a smarter, tech-driven solution. He decides he needs a tool to simplify the search, offering unbiased, clear assessments tailored to his criteria.

4.7.4 Use case

Alex, a 32-year-old software engineer who recently moved to Austin, is searching for a home in the city's competitive real estate market. While browsing RealtyConnect, a real estate platform, he notices a feature called the Quality of Listing (QoL) metric. This tool compares property listings across factors like price, location, and features to identify the best options. Intrigued, Alex explores further.

After watching a demonstration video, Alex purchases the basic QoL package for $300, which allows him to analyse up to 10 customized search results. He enters his budget, preferred location, number of bedrooms, and optional features like a fireplace, sauna, and jacuzzi tub. The QoL metric generates a detailed comparison report ranking properties by quality, factoring in their attributes and how they stack up against similar listings.

One standout property, a townhouse in South Austin, ranks highest due to its location, energy efficiency, and features like a modern kitchen and large backyard. This insight helps Alex focus on the best options, saving time and effort. Confident in the analysis, he visits the townhouse, finds it aligns with his expectations, and makes an offer. The purchase process goes smoothly, and Alex reflects on how the QoL tool streamlined his decision-making and ensured a smart choice.

Impressed by the experience, Alex shares his story with friends, colleagues, and online communities, recommending the QoL tool. He also posts a glowing review on RealtyConnect, highlighting how the tool simplifies the home-buying process by offering clear, comparative insights. Alex's journey demonstrates how the QoL metric empowers homebuyers to make informed decisions quickly and with confidence.

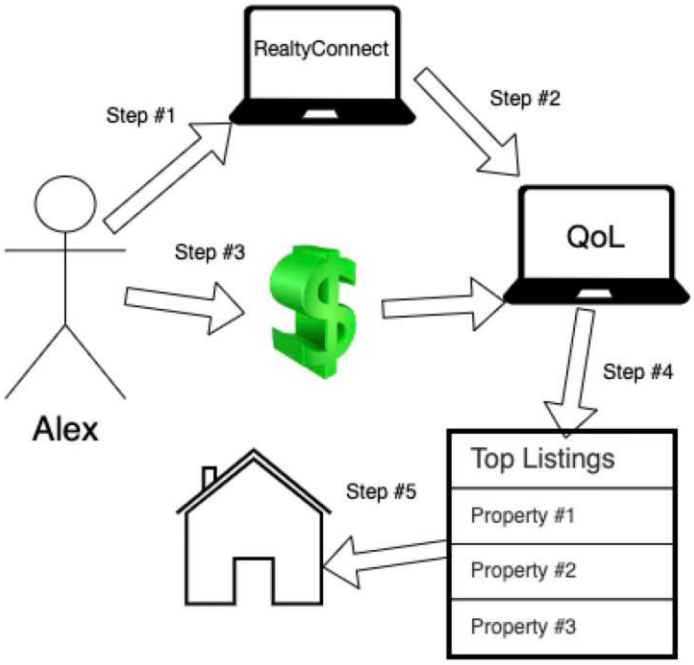

Figure 2: QoL value creation (source – self-developed)

4.8 High-level product specification

Using advanced algorithms, the QoL metric identifies the most favourable properties relative to user-defined preferences, streamlining the property selection process and enhancing decision confidence. For end users, the tool is accessible in a form of classical user interface through partners' listings websites.

4.8.1 Core features

The Comparative Scoring feature ranks property listings by analysing their relative quality and value, providing users with a clear hierarchy of options. It evaluates critical factors such as price, location, features, and the broader market context to deliver a comprehensive and actionable comparison.

The Customisable Preferences feature enables users to input specific search criteria, such as budget, location, property size, and desired amenities. It dynamically adjusts

the ranking metrics to align with individual priorities, ensuring a personalised and relevant property evaluation experience.

The User Profile Management feature supports individual user profiles that store preferences, past searches, and favourite listings. It enables users to dynamically update their preferences, allowing for real-time adjustments to property recommendations. Additionally, it provides personalised dashboards that summarise saved searches and recommendations, offering users a tailored overview of their interactions and enhancing their overall experience.

The Payment System Integration feature ensures seamless payment processing for subscription packages through integrated gateways like Stripe and PayPal. It supports secure transactions, accommodating multiple payment options such as credit cards and digital wallets, to provide flexibility and convenience for users. Additionally, the system includes automated billing and invoicing capabilities, streamlining the management of ongoing subscriptions.

The Visual Insights feature delivers visualised summaries and enables side-by-side comparisons of properties, making it easier for users to evaluate options. It incorporates charts, tables, and other intuitive tools to simplify data interpretation, ensuring a clear and comprehensive understanding of property rankings and attributes.

The Integration with Real Estate Platforms feature ensures seamless compatibility with platforms like RealtyConnect, providing users with a consistent and intuitive experience. It leverages live property data to enable real-time analysis, ensuring that users have access to the most current and accurate information during their property search.

The Neighbourhood-Level Analysis feature evaluates local amenities, school ratings, walkability scores, and nearby services to provide a comprehensive understanding of each property's surroundings. It compares neighbourhoods alongside property details, offering users a holistic view that helps them make more informed decisions.

The Historical Data Trends feature provides valuable insights into market trends, property value trajectories, and appreciation rates. It helps users assess the long-term investment potential of properties, ensuring that their decisions are informed by a thorough understanding of historical and predictive market dynamics.

4.8.2 Technology stack

The scoring algorithms built on advanced machine learning models designed to perform dynamic property scoring and ranking. These models incorporate natural language processing (NLP) techniques (Wintner, 2010) to extract and evaluate details from textual property descriptions, ensuring a comprehensive analysis of each listing. Additionally, ensemble methods are employed to combine diverse data points, such as price trends, feature importance, and location attributes, into a unified comparative score that provides users with clear and actionable insights.

The QoL metric aggregates live property data through APIs sourced from real estate platforms and third-party data providers, ensuring real-time accuracy and relevance. It integrates geospatial data to perform location analysis, capturing neighbourhood features and accessibility to provide a more comprehensive understanding of property contexts. Additionally, the system accesses historical data sets to conduct trend analysis and evaluate long-term property value assessments, offering users deeper insights into market dynamics.

The user interface is designed as a web-based application optimised for seamless performance on both desktop and mobile devices. It features an intuitive layout with drag-and-drop tools, allowing users to easily customise their preferences and interact with visualisations of property data. The interface employs a responsive design, ensuring smooth usability and adaptability across various screen sizes and devices, enhancing the overall user experience.

The back-end infrastructure is hosted on a scalable cloud-based platform, such as AWS or Google Cloud, to ensure high availability and optimal performance. It utilises RESTful APIs to facilitate real-time data exchange between partner platforms and user-facing interfaces. The system also incorporates database solutions like PostgreSQL and MongoDB, which are optimised for rapid data retrieval and analysis, supporting the tool's efficient and responsive functionality.

Security and compliance supported by implementing end-to-end encryption to safeguard user data and maintain privacy. It adheres to stringent data protection regulations, including GDPR and CCPA, to ensure legal compliance and user trust. Regular security audits are conducted to identify and address potential vulnerabilities, while token-based authentication is employed to secure user sessions and protect against unauthorised access.

4.9 Value proposition

Homebuyers in the U.S. spend an average of 124 hours and view 19 properties during their search, investing significant time and effort in manually comparing listings. The Quality of Listing (QoL) metric provides a revolutionary solution by streamlining this process, reducing the time spent by up to 80%—equivalent to saving nearly 99 hours. This allows buyers to focus on evaluating the most suitable, top-ranked properties rather than being overwhelmed by an excessive number of options, making the home-buying journey far more efficient and less stressful (RealTrends, n.d.).

In addition to saving time, the QoL metric tackles emotional bias, a common challenge in real estate decision-making. Research from the study “Key Factors Influencing Purchase or Rent Decisions in Smart Real Estate Investments” by Fahim Ullah and Samad M. E. Sepasgozar highlights that emotions drive 90% of decisions, often leading to trade-offs, such as prioritising aesthetics over functionality or sustainability. These emotional influences frequently result in post-purchase regret. The QoL metric addresses this issue by providing a data-driven framework for evaluating properties objectively, focusing on criteria like price, location, features, and market trends. It helps buyers understand trade-offs, such as how a property with less visual appeal could offer greater long-term value or better sustainability features, fostering more rational and informed decision-making (Ullah & Sepasgozar, 2020, Section 1.6).

Transparency is another key strength of the QoL metric. With detailed visualisations like side-by-side comparisons and ranked listings, it clarifies why certain properties are recommended, building trust and reducing impulsive choices. By minimising emotional influence, the QoL metric helps buyers make deliberate, confident decisions, reducing the likelihood of regret. Additionally, its integration of sustainability ratings and functional performance into the scoring system allows buyers to prioritise properties that align with their values without compromising practicality, ensuring decisions are balanced and satisfying.

In summary, the QoL metric revolutionises the home-buying process by promoting objectivity, transparency, and efficiency. By saving time, minimising emotional biases, and presenting clear, comprehensive property evaluations, it empowers buyers to make rational, well-informed choices that align with both their practical needs and personal values. This innovative tool reduces stress, fosters confidence, and helps buyers make decisions they can feel good about for years to come.

4.10 Identification of next 10 customers

To identify and secure interviews with potential customers in the U.S. while being based in Warsaw, Poland, a strategic and targeted approach was implemented. The process began with leveraging online platforms and professional networks to connect with individuals who matched the desired customer profiles for the Quality of Listing (QoL) metric.

The first step involved identifying potential interviewees through platforms such as LinkedIn, Facebook groups, and forums related to real estate, relocation, and home-buying. Relevant groups, such as “Relocating to Austin” or “First-Time Homebuyers,” were monitored to find active participants sharing their experiences or seeking advice. Posts were crafted to introduce the QoL metric and its goals, inviting interested individuals to participate in one-on-one interviews. Additionally, targeted advertisements on social media were used to reach individuals in the specified demographics, emphasising the opportunity to provide valuable input for shaping an innovative home-buying tool.

Direct outreach played a significant role. Messages were sent to individuals fitting the desired profiles, explaining the purpose of the research, the benefits of participating, and the flexibility of conducting the interviews online. For example, engineers, doctors, and professionals in technology were identified using LinkedIn Sales Navigator filters based on their location (Austin or other relevant U.S. cities), industries, and job titles.

To build credibility and trust, the messages emphasised that the interviews were part of a larger effort to refine a real estate tool designed to address common pain points for homebuyers. Incentives, such as offering an early preview of the QoL metric or a small financial reward for their time, were included to encourage participation.

Once individuals expressed interest, an easy-to-use scheduling system, such as Calendly, was employed to coordinate interview times that accommodated different time zones. Video conferencing tools like Zoom or Microsoft Teams were chosen for the meetings, ensuring a professional yet approachable platform for the discussions.

During each interview, the full lifecycle use case was presented, detailing how the QoL metric integrates into the home-buying process based on the high-level product specification. This included explanations of how users would discover the product, customise it to align with their preferences, and benefit from its data-driven insights to save time and improve decision confidence. The quantified value proposition was also

highlighted, showcasing potential time savings of up to 80% and the ability to make well-informed, value-driven decisions tailored to individual needs. This approach ensured a comprehensive understanding of the product's practical applications and its capacity to address common challenges faced by homebuyers.

4.10.1 Interview with Paul

During the video conference, Paul, a 30-year-old engineer based in Austin, appeared both relaxed and focused. He explained that he and his wife currently rent a two-bedroom apartment in a bustling neighbourhood close to downtown. They've been renting since moving to Austin three years ago and feel ready to buy a home now that their careers are more stable. Paul mentioned that their main motivation is to invest in a property rather than continue paying rent, which feels like "money out the window." They're also looking for a quieter neighbourhood with space to accommodate future plans, like potentially starting a family.

When asked about their home search experience, Paul said they've been actively looking for about four months. They primarily use online listing platforms like Zillow and Realtor.com but also browse local real estate sites. The sheer number of listings has been overwhelming. He explained that narrowing down options takes a lot of time, especially when comparing properties that seem similar on the surface but differ in price, size, or features. He and his wife often find themselves revisiting properties they've already dismissed, unsure if they've made the right call.

Paul emphasised that their top priorities are affordability, a good location, and modern features. He and his wife generally agree on what they want but sometimes differ on specifics. For instance, she prefers a home with an open kitchen, while Paul is more focused on energy efficiency and a home office space. They work together to weigh these priorities but sometimes wish for clearer data to guide their decisions.

When asked about decision-making, Paul admitted they often rely on gut feelings. While he values logic and data, the lack of comparative tools has made it challenging to objectively assess which properties truly stand out. He mentioned that they've avoided hiring a real estate agent so far, as they want to stay in control of the process and avoid extra costs. However, the manual effort of comparing listings has led to some frustration and uncertainty.

On the emotional side, Paul acknowledged that they're both excited but also nervous about making such a significant investment. They've had moments of doubt, wondering if they're missing out on better options or overanalysing details. He

described the process as both exciting and draining, especially when trying to balance work and home searches.

Sustainability and long-term value are important to Paul. He sees their future home as an investment and wants to ensure it appreciates over time. While sustainability features aren't their top priority, he said they would consider them if they provided clear financial or lifestyle benefits.

When the idea of the QoL metric was introduced, Paul's interest was piqued. He said he hadn't heard of a tool like it before but liked the concept of ranking properties based on relative value. He said it could save them hours of analysis and give them confidence that they're focusing on the best options. Paul suggested that if the tool could also highlight neighbourhood factors like school ratings or walkability, it would be even more valuable.

Paul concluded by saying he wishes the home-buying process felt less overwhelming and more straightforward. He was open to trying the QoL metric, especially if it could reduce the stress of comparing properties and help them feel more confident about their choices. The conversation ended on a positive note, with Paul expressing interest in being updated on how the tool could work for buyers like him.

4.10.2 Interview with Suzanna

Suzanna, a 42-year-old surgeon who recently relocated to Austin, appeared composed during the video call but expressed a clear sense of urgency regarding her housing situation. She explained that she had just moved to Austin for a new position at a hospital and was currently living in a temporary rented apartment provided by her employer. While she appreciated the convenience, she described the arrangement as temporary and lacking the personal touch she hoped to find in a home of her own.

Suzanna shared that this was her first time renting an apartment independently, as her previous accommodations were either provided by her residency program or shared with family. She admitted that navigating the rental and housing market was unfamiliar territory for her, which added to her stress. She expressed a strong desire to settle into a permanent place as soon as possible, one that aligned with her professional needs and personal preferences. Her top priorities included proximity to the hospital, as her demanding schedule required minimal commute time, and adherence to a budget that balanced affordability with quality.

When asked about her current search efforts, Suzanna explained that she had started browsing online platforms like Zillow but quickly felt overwhelmed by the number of options and the lack of clarity about what truly made one listing better than another. She admitted to relying heavily on advice from colleagues and friends but wished she had a more structured way to approach the process. Given her limited time outside of work, she expressed frustration at having to manually sift through countless listings.

Suzanna highlighted that her key concerns were location, cost, and safety. She needed to be close to the hospital but also wanted an apartment in a neighbourhood that felt secure and comfortable. Features like modern appliances or building amenities were desirable but secondary to her primary considerations. She also admitted that she had little experience evaluating the financial implications of purchasing a property, such as understanding market value or long-term appreciation potential, and worried about making a mistake.

When asked about her decision-making process, Suzanna said she found herself making choices based more on convenience and gut feelings than on thorough analysis. She described this as a source of anxiety, fearing she might overlook better options or make a choice she would regret later. The thought of committing to a significant investment without feeling fully informed was daunting.

Introducing the QoL metric as a tool for simplifying the home-buying process resonated with Suzanna. She liked the idea of a platform that could objectively compare properties and rank them based on her specific criteria. The concept of being able to quickly identify listings that matched her location and budget restrictions while offering the best overall value was particularly appealing. She said that having access to clear, data-driven insights would alleviate much of her stress and help her make a decision with confidence.

Suzanna suggested that if the QoL metric could provide neighbourhood safety ratings alongside property comparisons, it would be an invaluable feature for someone in her position. She also emphasised the importance of a user-friendly interface, given her limited experience with such tools.

As the conversation concluded, Suzanna expressed enthusiasm for trying the QoL metric. She appreciated the potential time savings and clarity it could offer and believed it would help her transition into her new role and life in Austin more smoothly. The call ended on a positive note, with Suzanna noting her willingness to explore the tool as soon as it became available.

4.10.3 Interview with Dany

Dany, aged 25, joined the video call from what appeared to be his gaming setup, complete with high-tech gear and a vibrant LED-lit background. Relaxed and confident, he explained that he was a professional Counter-Strike: Global Offensive (CS:GO) player and a millionaire, thanks to championship winnings and sponsorship deals. Despite his financial success, he was quick to emphasise practicality when discussing his housing preferences.

Dany shared that he currently lives in a small village, a choice he made to focus on his gaming career without distractions. However, the village's limited infrastructure, combined with his frequent travels to championships across the U.S., has made him consider moving to a more convenient location. Austin, with its reputation as a growing tech and gaming hub, is high on his list, but he's also open to other cities that offer excellent transportation links and a moderate cost of living.

When asked about his priorities, Dany emphasised that good airplane connections were at the top of his list. He travels extensively for tournaments and needs to be close to an airport with frequent flights to major U.S. cities like Los Angeles, New York, and Chicago. Cost of living, while not a major concern due to his wealth, is still something he considers. He prefers not to overspend unnecessarily, as he values practicality and financial sustainability.

Dany admitted that he hasn't actively started looking for properties yet. Most of his initial research has been casual, involving online searches and discussions with friends who've moved to larger cities. He feels overwhelmed by the number of options and unsure about how to assess whether a city or a property meets his specific needs. As someone who thrives on data and strategy in his professional life, he expressed frustration with the lack of objective tools to help him make such an important decision.

When asked about his decision-making process, Dany explained that he approaches big decisions like he does his gaming strategy—methodically and based on clear insights. However, he confessed that the home-buying process feels unfamiliar and less structured than what he's used to. This has made him hesitant to commit, especially since he's considering multiple cities and doesn't want to make a choice he might later regret.

Introducing the QoL metric piqued Dany's interest. The idea of a tool that could compare properties not only within a city but also across cities based on his specific priorities excited him. He imagined how useful it would be to input parameters like

proximity to a major airport, cost efficiency, and neighbourhood infrastructure to get a ranked list of the best options. He also liked the idea of seeing a property's long-term value potential, as he views his next home as both a residence and an investment.

Dany suggested that if the QoL metric could incorporate airport accessibility and travel frequency data, it would be especially valuable to someone like him. He also mentioned that he'd appreciate features that provide insights into local gaming communities and internet infrastructure, as these are crucial for his lifestyle.

As the conversation concluded, Dany expressed enthusiasm about exploring the QoL metric, noting how it could simplify the complex decision of choosing the right city and property. He appreciated the tailored approach the tool offered and felt it aligned well with his methodical and strategic mindset. The call ended with Dany agreeing to provide feedback on how the tool might further cater to frequent travellers like himself.

4.10.4 Interview with Hasan

Hasan, 44, joined the video call with a calm and thoughtful manner, speaking with a measured tone that reflected his years of experience. Originally from Syria, Hasan shared that he relocated to the United States two decades ago to pursue opportunities as an electrical engineer. Now 44 years old, he recently achieved a significant milestone: saving enough money to purchase his first apartment. With a new job offer at a major tech company in Austin, Hasan is preparing to relocate and begin this exciting new chapter in his life.

When asked about his motivations for buying an apartment, Hasan explained that homeownership has always been a long-term goal. Over the years, he prioritised financial stability, ensuring he could make this investment without straining his resources. Relocating to Austin for his new role felt like the right moment to take this step, especially given the city's vibrant tech scene and opportunities for professional growth. Hasan is eager to find a place where he can establish roots and enjoy a sense of permanence after years of renting.

Discussing his home search process, Hasan admitted that he is still in the early stages. Between preparing for his move and wrapping up his current job, he has had little time to research properties. While he has browsed some online listings, he finds it challenging to navigate the sheer volume of options and compare them effectively. With limited familiarity with Austin's neighbourhoods, he feels uncertain about how to identify the right area or property for his needs.

Hasan emphasised that his top priorities are proximity to his new workplace, a safe and quiet neighbourhood, and affordability. While he is financially prepared to buy, he wants to ensure he gets good value for his money. He also values a sense of community and hopes to find an apartment in a location that offers access to amenities like parks, grocery stores, and healthcare facilities.

When asked about his decision-making process, Hasan explained that he prefers a methodical approach. He appreciates tools and resources that provide clear, detailed information to help him make informed decisions. While he trusts his instincts to some extent, he admitted that buying a home feels like a much bigger and more complex decision than he's used to. He expressed concern about missing important details or making a choice he might regret later.

Introducing the QoL metric resonated strongly with Hasan. He liked the idea of a tool that could compare properties based on value, location, and features, tailored to his specific priorities. He mentioned that it would be particularly helpful if the tool could highlight properties near his new workplace and provide insights into neighbourhood safety and amenities. Hasan also appreciated the idea of visual rankings and side-by-side comparisons, which he felt would simplify the process and save him time.

As the conversation concluded, Hasan expressed his gratitude for learning about the QoL metric. He said it sounded like exactly the kind of tool he needed to navigate the complexities of buying a home in a new city. Hasan was eager to try it out, confident that it would help him make a well-informed and satisfying decision as he prepared for this new phase of his life. The call ended with Hasan noting that he felt more optimistic about his upcoming move and home search.

4.10.5 Interview with Emily

Emily, a 35-year-old marketing manager living in Austin, joined the video call with a friendly and open attitude. She explained that she's been actively searching for her first home for a few months but admitted the process has been more time-consuming and overwhelming than she initially expected. While she enjoys scrolling through platforms like Zillow and Redfin, she often finds herself unsure of how to prioritise properties or determine which ones truly offer the best value.

When introduced to the QoL metric, Emily's interest was immediately piqued. She liked the idea of a tool that could save her time by analysing and ranking properties based on her specific preferences. "I feel like I'm spending hours comparing properties manually," she said. "If this tool can do the heavy lifting for me, I'm all in."

Emily also appreciated the ability to input her criteria, like budget, location, and style preferences, to get personalised results tailored to her needs.

One feature that stood out to Emily was the visual comparison tool. She mentioned that seeing side-by-side rankings would help her focus on the most promising options and eliminate uncertainty. She also valued the transparency of the QoL metric, which could provide clear data to back up its recommendations, giving her more confidence in her decisions.

Emily noted that the tool's ability to highlight neighbourhood factors, like proximity to parks or local shops, was a major plus. "I want to live somewhere that feels vibrant and connected," she said. "Having insights into the neighbourhood would make a huge difference."

By the end of the conversation, Emily expressed enthusiasm for trying the QoL metric. She believed it could streamline her search, save her valuable time, and help her feel more confident about finding the perfect home. The call concluded on a positive note, with Emily excited to see how the tool could transform her home-buying journey.

4.10.6 Interview with Julian

Julian entered the video call with a friendly yet focused look, reflecting the confidence of someone embarking on a new and exciting chapter. At 33 years old, he recently relocated to Austin from Germany to take up a promising position with a high-tech company specialising in renewable energy. Julian expressed enthusiasm about his work and his move but admitted that finding the right home in a new city has been a challenge.

When asked about his priorities, Julian emphasised two key factors driving his home search: close proximity to his office and energy efficiency. As someone deeply committed to sustainability, he views energy efficiency not just as a professional value but also as a personal priority. He is particularly interested in properties with modern, energy-efficient designs, such as solar panels, smart thermostats, or high-performance insulation, which align with his commitment to reducing his carbon footprint.

Discussing his current efforts to find a home, Julian explained that he has been relying on online platforms like Zillow and Redfin. While these tools have provided an overview of the market, he finds it time-consuming to sift through listings and evaluate which ones meet his specific criteria. He noted that many listings lack detailed

information about energy efficiency, which has made it harder to identify suitable options. Additionally, being unfamiliar with Austin's neighbourhoods, he feels uncertain about which areas would best suit his professional and personal needs.

Julian mentioned that he enjoys making decisions based on data and logic, a mindset shaped by his engineering background. However, the complexity of the home-buying process, coupled with his limited local knowledge, has made him feel less confident than usual. He described a sense of frustration at the lack of tools that provide comprehensive, comparative insights into properties.

Introducing the QoL metric sparked Julian's interest immediately. The idea of a tool that could objectively rank properties based on proximity to his workplace and energy efficiency was highly appealing. He appreciated the concept of clear, data-driven comparisons that could save him time and ensure he focuses on the best options. Julian suggested that if the QoL metric could integrate energy efficiency ratings and sustainability metrics, it would be an invaluable resource for people like him.

As the conversation concluded, Julian expressed enthusiasm for trying the QoL metric. He believed it could address the specific challenges he faced in his home search, helping him make a confident, well-informed decision that aligns with his values and priorities. The call ended on a positive note, with Julian optimistic about finding the perfect home with the help of the QoL metric.

4.10.7 Interview with Adrian

Adrian appeared calm and focused as he joined the video call, reflecting his experience as a seasoned aerospace engineer. At 43, he's exploring an investment opportunity in Austin's real estate market, aiming to buy an apartment to rent out for the next 10 to 15 years before selling it at a profit. His main focus is finding a property that offers good value for the price and has strong long-term growth potential.

He explained that while he's been researching the market online and tracking trends, it's challenging to assess how a property's value might evolve over time. Many listings focus only on present-day features, leaving gaps in information about long-term growth potential. Adrian relies on data to guide his decisions but admitted that projecting future appreciation is complex without the right tools.

When introduced to the QoL metric, Adrian liked the idea of a tool that ranks properties based on current value and long-term attractiveness, factoring in things like neighbourhood growth and rental demand. He felt it could save him time and help him

confidently choose an investment aligned with his goals. Adrian suggested that projections of neighbourhood development and rental income potential would make the tool even more useful for investors like him.

As the conversation wrapped up, Adrian wished to try the QoL metric, confident it could provide the clarity he needs to make a smart investment decision in Austin's competitive market.

4.10.8 Interview with Maria

Maria, a 29-year-old graphic designer originally from Seattle, participated in the video call with a cheerful and creative disposition. Recently relocated to Austin for a new role at a digital marketing agency, Maria explained that she's looking to buy her first home. She's been renting apartments since graduating college but feels that now, with a stable job and some savings, it's the right time to invest in her own space.

Maria shared that her priority is finding a property with character and charm, reflecting her artistic lifestyle. She loves Austin's vibrant culture and wants a home that fits the city's unique vibe. While she values design and aesthetics, she's also mindful of practical factors like proximity to her workplace and affordability. Maria emphasised the importance of having enough space for a small home office, as remote work is a big part of her career.

When asked about her home search process, Maria admitted that she's felt overwhelmed. Scrolling through endless listings online has been time-consuming, and comparing properties feels more like guesswork than a structured process. She's unsure how to weigh features like price versus design quality or location. Maria said she often second-guesses whether she's focusing on the right priorities or if better options are slipping through the cracks.

The idea of the QoL metric intrigued Maria immediately. She loved the concept of a tool that could not only compare properties objectively but also help her balance her desire for a unique, creative space with practical considerations like price and commute time. She was particularly drawn to the visual comparison feature, imagining how helpful it would be to see a ranked list of properties tailored to her preferences. Maria also mentioned that neighbourhood insights, such as proximity to local art hubs and cultural venues, would be a bonus.

As the interview wrapped up, Maria expressed excitement about trying the QoL metric. She felt it could bring much-needed structure and clarity to her search, saving

her time and helping her find a home that perfectly balances her artistic aspirations with her everyday needs. The call ended with Maria optimistic about making her first home-buying experience a smooth and satisfying one.

4.10.9 Interview with Derek

Derek, a 41-year-old financial analyst from Chicago, joined the call with a polite tone. Recently relocated to Austin for a new position at a consulting firm, he explained that he's in the process of searching for a new home. While Derek typically trusts real estate agents for their expertise, he admitted he's open to exploring new tools that could complement their guidance.

When introduced to the QoL metric, Derek was intrigued by the concept of ranking properties based on clear, data-driven insights. He shared that his analytical nature makes him value tools that provide transparency and structure. "I like to know exactly what I'm getting into," he said. "A tool like this could help me better understand the market and validate the options my agent presents."

Derek particularly appreciated the QoL metric's ability to compare properties objectively, factoring in price, location, and features. He saw it as a way to double-check the value of properties his agent suggested and ensure he wasn't overlooking better options. The feature that ranked long-term property value based on market trends caught his attention as well. "I'm not just buying a home—I'm making a financial investment," he explained. "Having insights into future appreciation is a big plus."

Another aspect Derek liked was the time-saving potential. While he trusts his agent, he acknowledged that reviewing every listing manually could be overwhelming. The QoL metric's clear rankings and visual comparisons, he felt, would make the process faster and more efficient, giving him confidence that he was focusing on the best options.

By the end of the conversation, Derek expressed interest in trying the QoL metric alongside his real estate agent's services. He believed the tool could add an extra layer of clarity to his home-buying journey and help him make a well-informed decision. The call ended on a positive note, with Derek appreciating how the QoL metric could complement his current approach.

4.10.10 Interview with Laila

Laila, who is 33, joined the video call with a warm and confident manner, exuding a sense of accomplishment and determination. A single mother of two children, she

explained that she had successfully invested in the stock market over the years and now enjoys a steady premium income from her investments. This financial stability has inspired her to take the next big step: buying a spacious apartment in the city centre to create a comfortable and convenient home for her family.

When asked about her motivations for buying, Laila shared that she has always dreamed of providing her children with a stable and nurturing environment. Living in the city centre appeals to her because of its proximity to good schools, cultural activities, and essential services. She emphasised that her goal is not just to buy an apartment but to invest in a home that supports her family's lifestyle and long-term well-being.

Discussing her current search process, Laila explained that she has been exploring various online platforms and speaking with friends for recommendations. While she has identified a few potential properties, she finds it overwhelming to compare them and feels uncertain about whether she is making the best choices. Her busy schedule as a mother makes it challenging to dedicate the time needed for detailed property analysis.

Laila's top priorities include ample space for her children, easy access to schools and parks, and a safe, vibrant neighbourhood. She is also looking for modern amenities, such as a well-equipped kitchen and a secure building with family-friendly facilities. While she is financially prepared to buy a premium property, she wants to ensure she gets good value for her investment and avoids overspending on features that may not add significant benefits.

When discussing her decision-making process, Laila admitted that she often relies on recommendations from others, which can sometimes lead to confusion or second-guessing. She values having clear, objective information to guide her choices and help her feel confident about her decisions. She expressed concern about overlooking important details or making a choice that might not fully align with her family's needs.

Introducing the QoL metric immediately caught Laila's attention. She appreciated the idea of a tool that could rank properties based on factors like space, location, and value, all tailored to her specific requirements. Laila was particularly interested in the feature that provides neighbourhood insights, as knowing about nearby schools, parks, and amenities would play a crucial role in her decision. She also liked the idea of visual comparisons that could save her time and simplify the process, allowing her to focus on the best options without feeling overwhelmed.

As the conversation wrapped up, Laila expressed enthusiasm for trying the QoL metric. She believed it could provide the clarity and efficiency she needs to find the perfect home for her family. Laila ended the call feeling more optimistic about her search, confident that the tool could help her make a smart and satisfying investment in her family's future.

4.10.11 Interviews summary

All these interviewees share key characteristics that align with the persona Alex in different ways. Like Alex, they are navigating significant life transitions, such as relocating for a new job, buying a first home, or making a strategic investment. Many of them value efficiency and data-driven decision-making, much like Alex's tech-savvy approach to solving problems. They also face challenges in navigating overwhelming property options, seeking clarity and confidence in their choices, which mirrors Alex's reliance on tools to streamline complex processes. This shared focus on balancing personal goals with practical needs highlights how the QoL metric can cater to a wide range of users with similar pain points and aspirations.

Table 2: interview summary (source – self-developed)

Interviewee	Age	Profile	Key Priorities	Feedback
Paul	30	Engineer, married, no kids	Affordable home, space for future family, location	Positive, appreciated time-saving and ranking features
Suzanna	42	Surgeon, recently relocated, living in temporary rented apartment	Proximity to work, budget restrictions, quick purchase	Positive, interested in customization and clarity
Dany	25	Professional gamer, millionaire, frequent traveller	Good airport connections, moderate cost of living	Positive, valued airport proximity and market insights
Hasan	44	Electrical engineer, relocating for a tech job	Proximity to work, safe and quiet neighbourhood	Positive, appreciated value and neighbourhood analysis

Emily	35	Marketing manager, overwhelmed by listings	Efficiency, clarity in comparison, neighbourhood insights	Positive, interested in time-saving and clarity benefits
Julian	33	Renewable energy engineer, sustainability-focused	Close to work, energy efficiency, sustainability	Positive, excited by energy efficiency and rankings
Adrian	43	Aerospace engineer, seeking investment property	Optimal price-value ratio, long-term investment potential	Positive, valued long-term growth projections
Maria	29	Graphic designer, first-time buyer	Artistic design, affordability, work-life balance	Positive, liked creative balance with practical features
Derek	41	Financial analyst, prefers working with an agent	Agent-backed support, decision validation, efficiency	Positive, saw value in complementing agent's guidance
Laila	33	Single mom of 2, investor in stock market	Spacious apartment, city centre, family amenities	Positive, liked neighbourhood and property comparisons

4.11 Charting competitive position

4.11.1 Matching top two persona's priorities

The QoL metric aligns perfectly with the top two priorities of the persona, Alex: efficiency in the property search process and making data-driven, confident decisions.

Efficiency in the Property Search Process

Alex values tools that save time, given his demanding career and need for balance. The QoL metric's advanced algorithms streamline the property search by ranking listings based on his specific preferences, such as budget, location, and key features like home office space. Instead of spending countless hours sifting through irrelevant or subpar options, Alex can quickly focus on the top recommendations tailored to his needs. With the potential to reduce search time by up to 80%, the QoL metric provides Alex with the efficiency he seeks, freeing up his time for work and personal priorities.

Data-Driven, Confident Decisions

As a tech-savvy professional, Alex relies on data to make informed choices. The QoL metric's Comparative Scoring Model evaluates properties based on factors like price-to-value ratio, neighbourhood amenities, and long-term investment potential, presenting these insights through clear visual comparisons. This approach removes guesswork, providing Alex with the confidence that his decisions are backed by robust, objective data. By ensuring he focuses on properties that offer the best value, the QoL metric not only meets his need for reliable information but also enhances his trust in the home-buying process.

4.11.2 Persona's priorities met by existing products comparing to QoL

Below is a comparison of the top 10 competitors to the QoL metric based on the two factors, rated on a scale from 1 to 5 (5 being better).

Table 3: competitors' comparison (source – self-developed)

Competitor	Efficiency in the Property Search Process	Data-Driven, Confident Decisions
Zillow	4	3
Redfin	4	3
Realtor.com	3	3
Homes.com	3	2
Trulia	3	3
Opendoor	4	4
Compass	4	3

Rocket Homes	3	3
Mashvisor	2	4
Reonomy	2	4

Zillow and Redfin excel in search efficiency with intuitive interfaces and strong filtering options but lack deep data-driven decision tools tailored to individual preferences.

Opendoor offers efficiency and stronger confidence for buyers through direct transactions, but its data analysis is less robust compared to QoL.

Mashvisor and Reonomy focus more on data analysis, making them suitable for investors but less efficient for general property searchers.

Platforms like Realtor.com and Homes.com provide a broad database but lack advanced analytics and personalisation, impacting both efficiency and confidence.

QoL metric, by comparison, would aim for a score of 5 in both categories, leveraging advanced machine learning for efficiency and personalised data insights to drive confident decision-making.

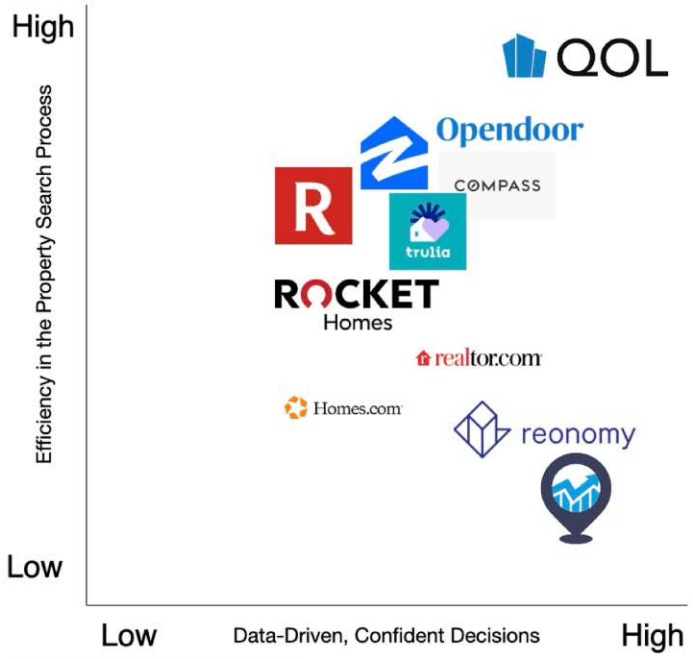

Figure 3: QoL competitive position (source – self-developed)

4.12 Determining customer decision making unit

The Decision-Making Unit (DMU) includes everyone involved in the decision to purchase a product, from those who approve or block the acquisition to those whose

opinions influence the process. Understanding the roles within the DMU—such as the Champion who advocates for the product, the End User who creates value from it, and the Primary Economic Buyer who controls the budget—is crucial for successful sales. Whether in B2B or B2C markets, identifying and addressing the needs of each role ensures a smoother path to adoption and better alignment with customer priorities (Aulet, 2013, p. 141).

The Champion is the person who actively advocates for the QoL metric, recognising its potential to solve key challenges. While the end user often plays this role, it could also be a real estate agent. Agents can benefit from the tool by combining its data-driven insights with their professional expertise, helping clients make faster, more informed decisions. By leveraging the QoL metric, agents can enhance their reputation, streamline their workflow, and deliver greater value to their clients, making them powerful advocates for the product.

The End User is the individual directly using the QoL metric to achieve their goals. For Alex, it's about efficiency in finding a home. For Adrian, it's about making a smart investment. End users rely on the tool's ability to save time, provide clear property comparisons, and boost confidence in their choices. They experience the product's value firsthand and are key to driving adoption.

The Primary Economic Buyer is the person who approves and funds the purchase. In many cases, the economic buyer and the end user are the same, particularly for individual consumers. However, in scenarios involving shared financial decisions, such as Paul and his wife, the economic buyer might include another party. If marketed through real estate agencies, the economic buyer could also be the agency itself, integrating the QoL metric into its services.

Additional roles like influencers and veto power holders play a significant part in the decision-making process. Primary influencers, such as real estate agents or market analysts, can shape opinions by endorsing or questioning the product's value. Secondary influencers, like friends, family, or online reviews, subtly impact perceptions and add weight to the decision.

A person with veto power can outright block the purchase. In consumer markets, this might be a sceptical family member, while in a corporate setting, it could be a manager or policy enforcer. Similarly, a purchasing department may challenge the acquisition on budget or compliance grounds, particularly if the product is introduced as a B2B solution.

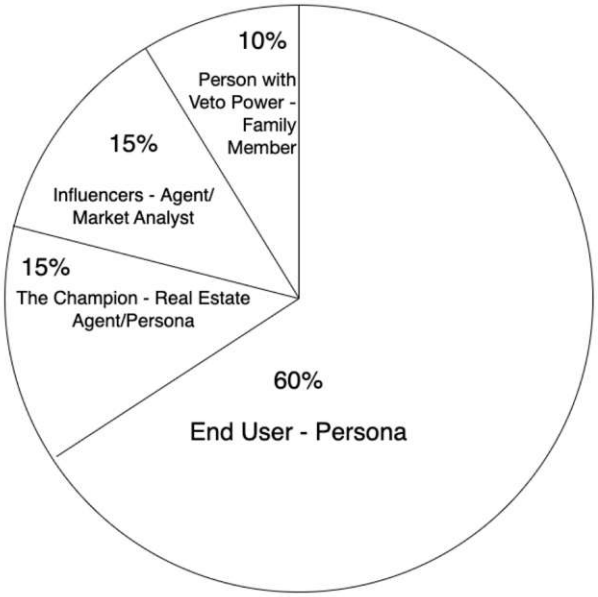

Figure 4: Power distribution across different roles in DMU (source – self-developed)

Power distribution in the DMU reflects the likely influence of each role but will require further refinement as more insights are gathered. The End User is assumed to hold the majority of decision-making power at 60%, as they directly experience the benefits of the QoL metric, like saving time and making confident choices. Champions, often advocates like real estate agents, contribute 15%, driving enthusiasm and pushing for adoption. Influencers, such as friends, family, or professionals, are estimated to hold 15%, shaping perceptions and adding credibility to the decision. Person with Veto Power, at 10%, can block the purchase entirely, whether it's a sceptical spouse or a manager in a corporate context.

4.13 Process map for acquire a paying customer

The process of acquiring a paying customer for the QoL metric is a streamlined journey that focuses on building trust and demonstrating value early. For example, Alex, a 32-year-old software engineer who recently relocated to Austin, begins his journey when he comes across a targeted ad for the QoL metric on a real estate platform. The ad highlights how the tool simplifies the home-buying process by offering data-driven property comparisons and saving valuable time. Within a day, Alex clicks on the ad, landing on the QoL website.

On the website, Alex watches a compelling demo video showcasing how the QoL metric works. The video walks him through its features, such as ranking properties based on price-to-value ratio, neighbourhood insights, and long-term investment

potential. Additionally, Alex reads customer reviews from other homebuyers who praise the product for saving them time and boosting their confidence in choosing the right property. This builds his initial trust in the tool.

Over the next three to five days, Alex continues his home search, recalling the benefits demonstrated by the QoL metric. The follow-up email he receives after visiting the website includes a clear explanation of the product's core value, along with real customer testimonials that resonate with his situation. Feeling more confident, Alex decides to revisit the QoL website to explore pricing.

By the end of the first week, Alex is ready to make a decision. Recognising how the QoL metric could streamline his property search and reduce the stress of comparing listings manually, he decides to purchase the full version for $599. The secure payment process is quick and intuitive, and Alex immediately gains access to the tool.

This entire process, from initial awareness to becoming a paying customer, spans about one week for Alex. Customers with more urgency, such as those relocating on a tight schedule, might make the decision in just a few days, while exploratory buyers could take up to a month. Without offering trial versions, the QoL metric relies on impactful demos and authentic customer reviews to establish credibility and convert potential customers efficiently.

4.13.1 Hidden obstacles

Hidden obstacles in acquiring customers for the QoL metric often lie beneath the surface of their decision-making process. Many potential users might question whether the tool's benefits, like time savings and improved decision confidence, are worth the price, especially without a trial version to test its capabilities firsthand. Some may prefer traditional methods, such as working with real estate agents or browsing listings manually, finding comfort in familiar processes that they perceive as more personalised.

For others, the urgency to adopt a tool like the QoL metric might not align with their current stage in the home-buying journey. Early-stage buyers or those casually exploring options might delay making a decision, especially if they're hesitant about spending $599 upfront. This price point could feel like a barrier for budget-conscious users who wonder if the investment will pay off.

There's also the potential perception that the QoL metric is overly complex or intimidating. Users unfamiliar with AI-powered tools might assume it requires

technical expertise, deterring them from even considering it. Some buyers may inherently distrust algorithms, feeling that no machine can replicate the nuanced judgment of a human, especially when evaluating something as personal as a home.

External influences also play a role. Friends, family, or advisors may voice scepticism, particularly if they see the product as unnecessary or redundant compared to free tools or traditional advice. Additionally, limited awareness could mean many potential customers never discover the QoL metric, especially if it isn't prominently visible on the platforms they frequent during their home search.

Overcoming these obstacles requires thoughtful messaging that reassures users about the simplicity and value of the tool, clear demonstrations that build trust, and strategic marketing to reach users at the right moment in their buying journey.

4.13.2 DMU actors' involvement in acquiring a paying customer process

Actors from the Decision-Making Unit (DMU) are involved at various stages of the customer acquisition process, each contributing differently to the final decision. Their level of influence varies based on their role and the dynamics of the purchasing process.

The End User is the primary driver of the process. They initiate the journey by recognising their need for a solution, such as saving time in property searches or making more confident decisions. The End User actively evaluates the QoL metric's value, engages with the demo, reads customer reviews, and compares it with other options.

The Champion, often overlapping with the End User or occasionally a real estate agent, plays an advocacy role. They emphasise the value of the QoL metric, persuading other stakeholders in the DMU to consider its adoption. For example, a real estate agent Champion might highlight how the tool enhances decision-making and justifies the investment.

Influencers, such as family members, friends, or professionals like financial advisors, provide guidance and opinions during the decision process. They may validate the End User's choice or raise concerns about the tool's cost or necessity. For instance, a partner might support the purchase if they see its potential to save time, or an advisor might question its value against the price.

Veto Power Holders typically have the authority to block the purchase if they perceive risks or misalignment with priorities. In a consumer setting, this could be a spouse

who controls household finances or strongly opposes the expense. In a B2B context, it might be a compliance officer or manager who needs to approve the acquisition.

The End User drives the process and has the most significant influence by experiencing the tool's value directly. Champions advocate for its adoption, Influencers shape perceptions and provide validation, and Veto Power Holders act as potential blockers. Recognising the involvement and influence of each actor allows for a more targeted and effective strategy to convert potential customers into paying customers.

4.14 Total addressable market size for follow-on markets calculation

Expanding the QoL metric to encompass all U.S. cities with populations exceeding 100,000 significantly broadens its market potential. As of 2024, there are 336 such cities in the United States (Wikipedia, n.d.).

While specific data for each city varies, the National Association of REALTORS® reported that existing-home sales in the United States reached a seasonally adjusted annual rate of 4.15 million in November 2024 (National Association of REALTORS®, 2025). Assuming cities with populations over 100,000 account for a significant portion of these transactions, average estimate is about 10,000 home sales per city annually. Total number of potential users is around 3.36 million yearly.

As of pricing framework and distribution in tired options, these parameters used the same as in section 3.6.2 "Pricing framework".

Table 4: breakdown of the TAM calculation for the QoL metric across the US (source – self-developed)

	Tier	Price per User ($)	Share of Users (%)	Number of Users (millions)	Revenue (millions $)
	Basic	300	65	2.184	655.2
	Mid	450	20	0.84	378.0
	Premium	599	10	0.336	201.264
Total				3.36	1234.464

This detailed breakdown shows how the TAM was derived, considering the tiered pricing structure and distribution of potential users across the different tiers. Total TAM for the entire US market is around $1.23 billion per year.

The selection of the follow-on market aligns with established principles for attracting venture capital and building a substantial business. According to Bill Aulet in *Disciplined Entrepreneurship* (2013, p. 160), a combined total addressable market (TAM) of the beachhead market and up to ten follow-on markets should exceed $1 billion to meet the expectations of investors and support significant business growth.

4.15 Designing a business model

The B2C e-business model has evolved with the growth of internet technology, enabling companies to sell products and services directly to consumers online. Various B2C models exist, including portals, e-tailers, content providers, and virtual communities. The success of these models depends on factors such as consumer trust, competition, and logistical infrastructure. Technological advancements like AI and blockchain can enhance customer experience and data management. The B2C landscape has expanded to include traditional retail, subscription models, pay-what-you-want, and cloud computing services. E-business models generally involve roles and relationships among customers, allies, and suppliers, with flows of products, services, information, and money. According to Alexander Osterwalder business model canvas is as follows.

<table>
<tr><td rowspan="2">Key Partners</td><td>Key Activities</td><td rowspan="2">Value Propositions</td><td>Customer Relationships</td><td rowspan="2">Customer Segments</td></tr>
<tr><td>Key Resources</td><td>Channels</td></tr>
<tr><td colspan="2">Cost Structure</td><td colspan="3">Revenue Streams</td></tr>
</table>

Figure 5: Business Model Canvas (source – Osterwalder & Pigneur, 2010).

4.15.1 Business model concept

The QoL metric operates on a B2C SaaS model, delivering value directly to end users through an online platform that simplifies and enhances the home-buying process. The business model focuses on leveraging advanced technology, tiered pricing, and strategic partnerships to create a scalable, customer-centric solution.

4.15.2 Key partners

Key partnerships play a critical role in the success of the QoL metric by enhancing its functionality, credibility, and market reach. Real estate listing platforms, such as Zillow or Redfin, are essential partners as they provide live property data through APIs. This integration ensures that the QoL metric offers accurate and up-to-date information, a cornerstone of its value proposition.

Collaborations with real estate agents and agencies are also vital. Agents can use the tool to complement their expertise, helping their clients make data-driven decisions while streamlining their own workflow. This creates a win-win dynamic, where agents advocate for the QoL metric as a valuable tool for buyers.

Partnerships with data providers that specialise in geospatial analytics, neighbourhood insights, and market trends further enrich the platform's capabilities. These sources enhance the depth and precision of the comparative scoring model, making it even more appealing to users.

Finally, working with local influencers or industry professionals in real estate markets, such as brokers or financial advisors, helps build credibility and spread awareness among target audiences. These relationships ensure the QoL metric remains trusted and relevant in an evolving market.

4.15.3 Value propositions

The QoL metric delivers clear, measurable value to its users by addressing two key pain points in the home-buying process: the overwhelming complexity of property searches and the uncertainty in decision-making. Its core value lies in time savings, allowing users to reduce search efforts by up to 80% through advanced filtering and personalised property rankings. Instead of sifting through endless listings, users can focus on a shortlist of the most relevant options tailored to their preferences.

Another major value proposition is improved decision confidence. The QoL metric uses data-driven insights to rank properties based on price-to-value ratio,

neighbourhood features, and long-term investment potential. This approach eliminates guesswork, empowering users to make smarter choices backed by clear comparisons and analytics.

The tool also provides customisation and flexibility, adapting to individual priorities like budget, location, or specific amenities. For investors, features like historical market trends and appreciation forecasts add a layer of depth that traditional platforms lack.

Overall, the QoL metric transforms property searching from a stressful and time-consuming task into a streamlined, informed, and confidence-boosting experience. By delivering tangible results that align with users' needs, it positions itself as an indispensable tool for homebuyers and investors alike.

4.15.4 Customer segments

The QoL metric targets diverse customer segments, each with unique needs that the tool is designed to address.

First-Time Homebuyers are a key segment, often feeling overwhelmed by the property search process. They value the tool's ability to simplify decision-making and highlight the best options based on their budget and preferences, giving them the confidence to make one of the biggest financial decisions of their lives.

Relocating Professionals make up another important group. These buyers, like Alex, are typically busy with career demands and need to find a property quickly and efficiently. The QoL metric's time-saving features and focus on personalised recommendations are critical for this audience, helping them navigate unfamiliar markets with ease.

Real Estate Investors represent a high-value segment, seeking properties that maximise returns over time. For them, the QoL metric's comparative scoring model, long-term market trends, and property appreciation forecasts are invaluable tools for making informed investment decisions.

High net-worth buyers looking for premium properties also benefit from the QoL metric. They often seek personalised, high-quality experiences and appreciate the tool's advanced analytics and ability to highlight properties that align with their lifestyle and priorities.

By catering to these segments with tailored features and clear value propositions, the QoL metric appeals to a wide range of homebuyers and investors, making it a versatile solution in the real estate market.

4.15.5 Cost structure

The QoL metric's cost structure revolves around maintaining and enhancing its technology platform, acquiring customers, and supporting users effectively. The largest portion of costs comes from technology development and maintenance. This includes expenses for building and optimising machine learning algorithms, integrating real-time data sources, and maintaining cloud-based infrastructure to ensure scalability and high performance.

Marketing and customer acquisition are significant cost components, covering digital advertising campaigns, partnerships with real estate platforms, and influencer collaborations. These efforts are essential for building awareness and attracting users, particularly during the launch and market expansion phases.

Customer support and user experience enhancement also represent ongoing costs. Providing responsive support, detailed onboarding materials, and updates to the platform ensures user satisfaction and retention, which are critical for the subscription-based revenue model.

Other costs include data partnerships, which require licensing agreements with providers of property, geospatial, and market trend data. Additionally, there are operational expenses, such as salaries for technical and marketing teams, administrative overhead, and compliance with data protection regulations.

The cost structure is designed to support a lean and scalable model, with upfront investments in technology and marketing balanced by recurring revenue from subscriptions. As the business grows and achieves economies of scale, these costs can be optimised to improve profitability while maintaining a high-quality user experience.

4.15.6 Revenue streams

The QoL metric generates revenue primarily through a tiered subscription model, designed to cater to different user needs and budgets while maximising earnings. Users can choose from three plans: Basic, Mid-Tier, and Premium, with prices ranging from $300 to $599 annually. This tiered approach allows the platform to appeal to a broad audience, from casual homebuyers needing essential features to investors seeking in-depth analytics and personalised insights.

Another potential revenue stream comes from partnerships with real estate platforms and agencies. These partnerships could involve licensing the QoL metric as an

integrated tool within their services, creating a B2B revenue opportunity while expanding the product's reach.

The platform could also explore affiliate partnerships, earning commissions for referrals to related services like mortgage providers, insurance companies, or relocation specialists. Additionally, optional add-ons or upgrades, such as one-time reports or enhanced data sets, could serve as supplementary revenue sources.

As the user base grows, data-driven insights might offer opportunities for monetisation. Aggregated, anonymised market data could be valuable to industry stakeholders, such as developers or financial institutions, creating a new revenue stream without compromising user privacy.

This multi-faceted revenue structure ensures consistent income, scalability, and flexibility to adapt to evolving market demands while focusing on the core subscription model.

4.15.7 Key activities

The QoL metric's core activities revolve around ensuring its technology, data, and customer experience remain top-notch. At the heart of its operations is technology development, which includes refining machine learning algorithms, enhancing the comparative scoring model, and ensuring seamless platform performance across devices. This constant optimisation guarantees users get accurate, relevant, and personalised property insights.

Data acquisition and management is another critical activity. Partnerships with real estate platforms and data providers ensure a steady stream of live property data, geospatial information, and market trends. Processing and integrating this data in real-time is essential for maintaining the platform's reliability and value.

Marketing and customer acquisition are key to expanding the user base. This involves digital campaigns, influencer collaborations, and partnerships with real estate agents to build awareness and trust in the QoL metric. Ensuring a strong online presence and engaging content helps capture the interest of potential users.

Customer support and retention play a vital role in maintaining user satisfaction. Providing responsive assistance, onboarding resources, and regular updates ensures users stay engaged and see the ongoing value of the tool.

Finally, market expansion is a critical activity. After establishing a presence in Austin, replicating the model in other cities, tailoring strategies to local markets, and scaling

operations efficiently will drive long-term growth. These activities collectively enable the QoL metric to deliver its value proposition and scale sustainably.

4.15.8 Key resources

The QoL metric relies on several essential resources to deliver its value proposition effectively. Foremost is the technology platform, which includes the machine learning algorithms, comparative scoring model, and cloud-based infrastructure. This platform is the backbone of the product, enabling real-time analysis, seamless user interactions, and scalability.

Data partnerships are another critical resource. Agreements with real estate platforms, geospatial data providers, and market analytics firms ensure the QoL metric has access to accurate and up-to-date property information. The quality and reliability of this data are fundamental to the tool's performance.

The team is an indispensable resource, comprising software developers, data scientists, and user experience designers who ensure the platform's functionality and refinement. Marketing professionals and customer support teams are also vital for driving user acquisition, engagement, and satisfaction.

Brand reputation serves as an intangible but powerful resource. Trust, built through consistent performance, transparency, and positive customer experiences, attracts new users and fosters loyalty among existing ones.

Finally, financial resources are crucial to sustaining operations, funding marketing campaigns, expanding into new markets, and continuously innovating the platform. Together, these resources form the foundation that enables the QoL metric to deliver its value and grow successfully.

4.15.9 Customer relationships

Building strong and lasting customer relationships is essential for the success of the QoL metric. The foundation of these relationships lies in creating a seamless and supportive user experience. From the moment a customer discovers the platform, they are guided through an intuitive onboarding process that clearly explains the tool's value and functionality. This ensures a smooth start and builds trust early on.

Personalisation is a key element of the relationship. By tailoring property recommendations to individual preferences, the QoL metric demonstrates its ability to adapt to each user's unique needs, fostering a sense of relevance and connection.

Regular updates and insights, such as email notifications about market trends or new listings that match their criteria, keep users engaged and informed.

Proactive customer support strengthens relationships further. A responsive support team is readily available to address questions or concerns, ensuring users feel valued and supported throughout their journey. For premium users, dedicated assistance adds an extra layer of service, reinforcing their investment in the platform.

The platform also cultivates loyalty through continuous improvement. By actively seeking user feedback and incorporating it into updates, the QoL metric demonstrates a commitment to meeting customer needs and staying ahead of market expectations. Positive customer experiences are amplified through reviews and word-of-mouth, encouraging new users to join.

In essence, the QoL metric builds relationships based on trust, personalisation, and consistent value delivery, ensuring users feel confident and supported every step of the way.

4.15.10 Channels

The QoL metric reaches its customers through a mix of digital platforms and strategic partnerships, ensuring broad visibility and easy access. The primary channel is its web-based application, optimised for both desktop and mobile users. This channel allows customers to explore features, purchase subscriptions, and access the tool seamlessly from anywhere, offering maximum convenience.

Digital marketing is a critical channel for driving awareness and engagement. Targeted ads on search engines, real estate platforms, and social media reach potential users at key moments in their home-buying journey. Educational content, such as blog posts, demo videos, and testimonials, serves to build trust and demonstrate the QoL metric's value.

Partnerships with real estate platforms and agents create another vital channel. Integrating the QoL metric into established platforms or having agents advocate for the tool enhances credibility and provides direct access to a relevant audience. These partnerships also facilitate a smoother user experience by linking property data directly to the tool.

Referral programs and word-of-mouth serve as organic channels. Satisfied users sharing their experiences with friends, family, or colleagues amplify the product's

reach. Additionally, reviews and endorsements from industry influencers or reputable real estate blogs further establish the QoL metric as a trusted solution.

By combining direct online access, digital marketing, strategic partnerships, and organic advocacy, the QoL metric ensures it can effectively connect with its target audience and scale efficiently.

4.16 Pricing framework

The refined pricing framework for the QoL metric aims to maximise adoption while allowing for flexibility over time. It features tiered options, incentives for early adopters and repeated users, and a strategy aligned with customer needs and market trends. Pricing will be adjusted based on user adoption, feedback, and behaviour observed during the initial rollout.

4.16.1 Tiered pricing structure

The pricing strategy will retain a three-tiered structure to cater to different customer segments.

Basic package, priced at $350, this tier provides essential features, such as standard property comparisons and basic neighbourhood insights. It is designed to attract first-time users and those with simpler needs.

Standard package, priced at $500, this mid-tier option includes all Basic features plus enhanced data analysis, personalised recommendations, and additional filters for refining property searches. It targets serious buyers who want more advanced tools without the full Premium package.

Premium package, priced at $699, this tier offers the most comprehensive set of features, including advanced analytics, long-term property investment insights, and priority customer support. This package is aimed at investors and power users seeking maximum value.

4.16.2 Early adopter incentives

To encourage initial adoption and build momentum, a one-time early adopter discount of 30% will be offered across all tiers during the first three months after launch. This brings the pricing temporarily to:

- Basic: $245

- Standard: $350

- Premium: $490

This limited-time discount creates urgency and rewards early customers for being first movers, fostering goodwill and generating valuable feedback.

4.16.3 User discount repetition

Recognising that the QoL metric is typically used once per property purchase, a 50% discount will be introduced for users who utilise the product at least twice within a calendar year. This incentive encourages repeat use among investors, frequent movers, or those assisting others in the home-buying process, such as real estate enthusiasts or family advisors.

For example, a user purchasing the Premium package at $699 for their first property would pay only $349.50 for the second use within the same year. This approach not only rewards loyalty but also fosters goodwill, positioning the QoL metric as a trusted tool for multiple transactions. It opens the door for increased adoption among high-frequency users, enhancing both customer retention and overall revenue potential.

By offering this discount, the QoL metric balances its one-time-use nature with a compelling reason for repeat engagement, expanding its appeal to a broader audience while maintaining profitability.

4.16.4 Dynamic pricing flexibility

Dynamic pricing flexibility ensures the QoL metric adapts to market dynamics while preserving its perceived value. Following the principle, "It is always easier to drop the price than to raise it" the initial pricing is set high to reflect the product's advanced technology and unique benefits (Aulet, 2013, p. 179). Early adopters, often willing to invest in premium solutions, help establish this baseline value, reinforcing the product's reputation as a high-quality tool.

Temporary discounts, like the 30% early adopter offer, lower the entry barrier without undermining the base price. These incentives attract initial users, create momentum, and provide valuable feedback during the rollout phase. For frequent buyers—such as investors or individuals assisting in multiple property purchases—a 50% discount on the second purchase within a calendar year rewards loyalty and encourages repeat use, expanding the tool's appeal beyond one-time transactions.

Strategic discounts during peak home-buying seasons or in response to competition further enhance the pricing model. By focusing on temporary reductions rather than

permanent price cuts, the QoL metric maintains flexibility while avoiding the challenges of raising prices later. This approach balances customer satisfaction, perceived value, and long-term profitability, ensuring the product remains competitive and adaptable in a dynamic market.

4.16.5 User-centric adjustments

User-centric adjustments ensure the QoL metric evolves based on real customer feedback and changing needs, creating a more personalised and relevant experience. Regular surveys and feedback loops collect insights from users about their preferences, challenges, and the features they value most. This data helps refine the platform, prioritise feature updates, and enhance usability.

Adjustments also extend to pricing flexibility, such as tailoring promotional offers or introducing discounts for frequent users based on observed behaviour. For example, the 50% discount for repeat buyers within a calendar year directly addresses the needs of investors or active property buyers, encouraging loyalty and engagement.

The platform's analytics track user interactions to identify pain points or underutilised features. These insights inform updates, like simplifying navigation, enhancing search filters, or adding requested tools. By staying responsive to user input, the QoL metric not only improves satisfaction but also builds trust, ensuring long-term customer retention and advocacy. This iterative approach keeps the product aligned with its users' evolving needs and strengthens its competitive edge.

4.17 Lifetime value (LTV) of an acquired customer calculation

The Lifetime Value (LTV) represents the net present value of a customer's profitability over a five-year period. Beyond five years, the compounded cost of capital for a startup diminishes the value of customer contributions, making the five-year horizon a practical calculation limit. LTV is calculated in dollars per customer and is based on the prices customers pay, the gross margin for each revenue stream, and the next product purchase rate (Aulet, 2013, p. 179).

$$\text{Present Value} = \text{Profit} / (1 + \text{Cost of Capital Rate})$$

The calculation begins with determining profits for the initial purchase in Year 0 and for subsequent years using the next product purchase rate. Profits are then discounted to account for the cost of capital, reflecting the investment recovery required by investors. The formula for present value discounts profits beyond Year 0

to reflect the time value of money. Summing the discounted profits across all years provides the LTV, offering a clear measure of customer value adjusted for investment costs (Aulet, 2013, p. 179).

4.17.1 One Time Revenue Stream

The average one-time revenue per customer for the QoL metric is calculated based on the pricing of the tiered options and their distribution. With 65% of users choosing the Basic package at $350, 25% opting for the Standard package at $500, and 10% selecting the Premium package at $699, the weighted average revenue per customer is $422.40.

4.17.2 Recurring Revenue Stream

For recurring revenue from frequent users, such as real estate agents who receive a 50% discount on subsequent purchases, the revenue from the discounted second purchase would be $211.20 per user.

4.17.3 Gross Margin

The gross margin for the QoL metric's revenue streams is as follows:

For the one-time revenue stream of $422.40, the platform fees amount to $126.72 (30% of revenue), with infrastructure costs at $2 and support costs at $5, leading to total costs of $133.72. Net revenue is $288.68 and a gross margin equals to 68.34%.

For the recurring revenue stream of $211.20, the platform fees are $63.36 (30% of revenue), with infrastructure and support costs remaining constant at $2 and $5, respectively leading to total costs of $70.36. Net revenue is $140.84 and a gross margin equals to 66.69%.

4.17.4 Recurring Revenue Stream and Retention Rate

For the QoL metric, designed primarily for one-time use per property purchase, recurring revenue opportunities are limited. However, frequent users, such as real estate agents or investors, provide potential recurring revenue streams due to their repeated property purchases. These individuals are expected to have a high retention rate, estimated at around 95%, reflecting their consistent need for tools that enhance their decision-making process.

Commutative Retention Rate is calculated using formula:

commutative retention rate = r ^ t, where r = retention rate and t = number of years after year one (Aulet, 2013, p. 181).

4.17.5 Life of Product

For the QoL metric, the life of the product corresponds to the duration of a single property purchase process, as the tool is designed to assist customers specifically during this phase. Typically, this process lasts one to three months on average, depending on the complexity of the buyer's search and the market conditions.

After the property purchase is completed, the need for the QoL metric generally ends, as the product's primary value is tied to the decision-making and comparison stages of buying a home. For frequent buyers, such as investors or agents, the life of the product may extend over multiple transactions within a calendar year, though each use remains tied to a distinct purchase process. This short but impactful product lifecycle emphasises the importance of delivering maximum value during the time it is actively used.

4.17.6 Next Product Purchase Rate

The next product purchase rate for the QoL metric equals 0% for individual homebuyers, as most individuals only purchase a home once every 8-15 years. Homeowners in the United States typically remain in their homes for about 13 years before moving. This duration can vary based on factors such as location, housing market conditions, and individual circumstances. For instance, in rapidly growing metro areas like Austin, Texas, homeowners may stay for around 8 years, while in more established markets like New York City, the tenure can extend to 15 years. These variations are influenced by factors including housing supply, affordability, and personal preferences (Evangelou, Nadia, 2020).

Frequent users, such as real estate agents or investors, due to their repeated property transactions, present a significant source of recurring revenue. Next product purchase rate aligns with their frequent users' retention rate, is estimated at 95%, reflecting their consistent need for tools that streamline decision-making and enhance efficiency.

4.17.7 Cost of capital rate for the business

For a new entrepreneurial venture like the QoL metric, with limited track record and high perceived risk, the cost of capital typically ranges between 35% and 75% per year, reflecting the risk investors take in funding a startup (Sahlman, 2003). This high

rate accounts for the uncertainties surrounding market adoption, revenue generation, and operational scalability.

Assuming a 40% cost of capital rate, this reflects the annual return investors expect for funding the QoL metric venture. This rate accounts for the risks associated with a new business, including uncertain market adoption and competitive pressures. It sets a benchmark for evaluating the venture's profitability; for the business to be viable, its growth and returns must exceed this rate, ensuring value for investors and justifying their commitment to the project.

4.17.8 Lifetime Value

For individual homebuyers LTV profit equals to net revenue which is $288.68.

For frequent users to calculate LTV following key inputs are used:

Recurring revenue: $211.20

Gross margin: 66.69%

Retention rate: 95%

Life of the product: up to 3 months (assuming the product will be bought 4 times within a year and first time at full price)

Next product purchase rate: 95%

Cost of capital rate: 40%

Table 5: LTV calculation (source – self-developed)

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Profit	$1056.0	$844.80	$844.80	$844.80	$844.80	$844.80
Gross Margin	66.69%	66.69%	66.69%	66.69%	66.69%	66.69%
Commutative Retention Rate	95.0%	95.0%	90.25%	85.74%	81.45%	77.38%
Profit	$669.03	$535.23	$508.47	$483.06	$458.89	$435.84
Cost of Capital Rate	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Net Present Value Factor	100.0%	60.0%	36.0%	21.6%	12.96%	7.78%
Present Value	$669.03	$321.14	$192.68	$115.61	$69.37	$41.64

Net Present Value of Profits (LTV)		$1409.44

LTV for individual homebuyers is calculated to be $288.68, reflecting the one-time nature of their engagement with the product. In contrast, the LTV for frequent homebuyers, such as real estate agents or investors, is significantly higher at $1,409.44, due to their repeated use of the tool and high retention rate.

4.18 Mapping of the sales process to acquire a customer

4.18.1 Short-term sales strategy

The short-term sales strategy for the QoL metric focuses on creating awareness, educating potential customers, facilitating the purchase process, and ensuring seamless transactions.

Awareness of the problem or opportunity

Target customers become aware of their problem—inefficient property searches and decision-making—when they experience frustration with existing platforms or uncertainty in choosing a property. For frequent buyers, the problem is recognised in the form of inefficiencies and time lost across multiple transactions. Digital marketing campaigns, blog content, and targeted ads on real estate platforms will highlight these pain points to make them explicit.

Learning about the solution

Customers will discover the QoL metric through partnerships with real estate platforms, digital advertising, and influencer endorsements. Demonstration videos and case studies will show how the tool addresses their problems, providing real-world examples of time savings and improved decision-making. Leveraging SEO (Mukhtar, Mahmood & Kareem, 2021) and paid search targeting terms like “comparative real estate analytics tool” ensures high visibility to prospective users.

Education process

Once customers are aware of the QoL metric, the focus shifts to educating them about its value. A dedicated landing page with clear explanations, customer reviews, and a demo video will guide users through the product’s benefits and features. For frequent buyers, tailored email campaigns will emphasise the long-term efficiency and cost

savings the product offers. The messaging will focus on quantified value, such as time saved and better decision confidence.

Making the sale

The sales process will be frictionless, relying on a self-service model where customers can easily select and purchase a tiered package directly through the platform. Limited-time discounts, such as the early adopter or frequent user incentives, will create urgency and encourage purchases.

Collecting the money

Payments will be processed through secure, integrated payment gateways such as Stripe or PayPal. The system will support multiple payment methods, including credit cards and digital wallets, ensuring convenience and reliability for customers. Automated invoicing and confirmation emails will complete the transaction process, reinforcing professionalism and trust.

4.18.2 Medium-term sales strategy

The medium-term sales strategy for the QoL metric shifts focus from creating demand to optimising order fulfilment and expanding through organic growth channels. With a strong foundation of word-of-mouth referrals and established distribution partnerships, the strategy prioritises frequent users due to their significantly higher Lifetime Value (LTV).

Focus on frequent users

With an LTV nearly five times higher than individual homebuyers, frequent users like real estate agents and investors become the primary focus. Marketing efforts will target these users through personalised outreach, professional networks, and real estate industry events. Tailored messaging will emphasise the tool's ability to streamline multiple transactions, save time, and enhance decision-making, making it indispensable for their workflows.

Leverage word-of-mouth

Satisfied customers will drive organic growth through word-of-mouth referrals. This strategy includes incentivising referrals with discounts or rewards for frequent users who introduce new customers. Highlighting success stories and customer testimonials across marketing channels will amplify this effect, reinforcing the QoL metric's credibility and effectiveness.

Optimise distribution channels

Partnerships with major real estate platforms such as Zillow or Redfin will play a key role in scaling. These platforms will integrate the QoL metric into their ecosystems, providing seamless access to users during their property search. For frequent users, exclusive partnerships with professional real estate networks or associations will further strengthen reach and adoption.

Enhance order fulfilment

The focus will shift to ensuring a flawless customer experience, from discovery to purchase. The platform will be optimised for quick and intuitive onboarding, enabling users to access their purchased tools without delays. For frequent users, a subscription-like experience with tailored dashboards and streamlined access will enhance usability and retention.

Strengthen customer support for frequent users

Providing priority customer support for frequent users will ensure loyalty and satisfaction. Dedicated account managers or support channels will address their needs quickly, making the QoL metric a trusted tool they rely on for every transaction.

By emphasising organic growth, frequent user engagement, and optimised fulfilment, this strategy capitalises on the foundation established in the short term while positioning the QoL metric as an indispensable tool for high-value customers.

4.18.3 Long-term sales strategy

The long-term sales strategy for the QoL metric priorities order fulfilment and operational excellence, capitalising on the momentum built in earlier phases. With minimal demand creation, the focus shifts to sustaining high customer satisfaction, scaling operations, and maximising retention, particularly among high-value frequent users.

Streamlined order fulfilment

Investments in robust infrastructure and automated systems will ensure seamless order processing. A user-friendly platform will enable customers to purchase and access the QoL metric with minimal effort. Enhancing integration with real estate platforms will allow users to interact with the tool directly during their property search, creating a frictionless experience.

Retention-driven growth

Retention will be the primary growth lever. Frequent users, with their higher LTV, will receive tailored loyalty programs, priority support, and personalised solutions to keep them engaged. Features such as advanced analytics or custom dashboards will evolve to meet the specific needs of these repeat customers. For individual users, streamlined processes and a strong emphasis on post-purchase support will ensure a lasting impression, encouraging referrals.

Leverage Word-of-Mouth and Referrals

Word-of-mouth will drive new business organically, supported by exceptional customer experiences. Referral incentives will be maintained, focusing on frequent users as brand ambassadors. Positive customer reviews and case studies will continue to validate the product's value in the market, further reducing the need for active demand creation.

Operational scalability

Operational excellence will underpin long-term success. This includes scaling cloud infrastructure, optimising customer support workflows, and enhancing data integration partnerships. By automating key processes and maintaining a lean, efficient operation, the QoL metric can handle increasing customer demand without compromising service quality.

Focus on core markets

Geographic expansion will slow, focusing instead on consolidating and maximising revenue from existing core markets. In mature markets, deepening partnerships with real estate platforms and agents will create an embedded presence, ensuring continued relevance and adoption.

Minimal demand creation

Marketing activities will shift to maintenance mode, relying on organic traffic, partnerships, and word-of-mouth. Limited campaigns will target niche opportunities, such as high-growth markets or emerging customer segments, to supplement ongoing sales.

By focusing on fulfilling customer orders, enhancing operational efficiency, and sustaining high retention rates, this strategy ensures stable, predictable growth while maintaining profitability in a mature phase of the business lifecycle.

4.19 Cost of customer acquisition (CoCA) calculation

The Cost of Customer Acquisition (COCA) represents the total sales and marketing expenses required to acquire a single average customer in a steady-state environment (Aulet, 2024). It includes all costs associated with attracting potential customers, even if they do not end up purchasing the product. Importantly, COCA excludes fixed production costs and other non-sales-related expenses, such as research and development, finance, and administration.

4.19.1 Time interval assumptions for CoCA

The time intervals for CoCA assumptions are based on distinct growth phases. In the short term, defined as less than a year, the focus is on building awareness and driving early adoption, requiring higher marketing investments. The medium term, spanning one to three years, shifts toward scaling operations, optimising channels, and benefiting from word-of-mouth and partnerships, reducing acquisition costs. In the long term, beyond three years, the emphasis moves to retention and organic growth, with acquisition costs dropping further as the brand becomes established.

4.19.2 Total marketing and sales expenses

The marketing and sales expenses outlined in the table below will serve as inputs for estimating the Cost of Customer Acquisition (CoCA).

Table 6: marketing and sales expenses (source – self-developed)

	Short Term	Medium Term	Long Term
Sales Expenses	Sales & BA Team Salary $200k/yr Local sales and business analyst specialist in Austin to partner with local real estate listing platforms with the aim to integrate QoL metric into their services	Sales & BA Team Salary $600k/yr Regional sales and business analysis teams across US to partner with major real estate listing platforms with the aim to integrate QoL metric into their services	Sales & BA Team Salary $1-3m/yr Regional sales and business analysis teams across US to deepen partnership with major real estate listing platforms with the aim to adjust/enhance QoL metric integration into their services

Marketing Expenses	Social Media Ads $50k/yr Influencer Marketing $25k/yr	Influencer Marketing $300k/yr Social Media Ads $ 150k/yr	Influencer Marketing/Real Estate Professional Social Media marketing $600k - 1m/yr

4.19.3 Estimation of CoCA

The Cost of Customer Acquisition (CoCA) estimates have been converted into ranges based on the defined time periods for short, medium, and long term. In the short term, CoCA is estimated at $55, reflecting the higher initial costs associated with marketing and customer acquisition during the early phase. For the medium term, spanning 1 to 3 years, the CoCA is expected to decrease to a range of $26 to $13, as acquisition becomes more efficient through scaling and organic growth. In the long term, beyond 3 years, the CoCA is projected to stabilise in a steady-state range of $9 to $6, driven by a mature market presence and minimal marketing expenditures. These estimates provide a realistic basis for financial planning and business strategy development and are displayed in Table 7 below.

Table 7: estimation of CoCA (source – self-developed)

	Year 1	Year 2	Year 3	Year 4	Year 5
New customers forecasted	5000	40000	120000	300000	600000
All sales expenses for period	$200k	$600k	$1m	$2m	$3m
All marketing expenses for period	$75k	$450k	$600k	$800k	$1m
Total marketing and sales expenses for period	$275k	$1,050k	$1.6m	$2.8m	$4m
CoCA for the period	55 US$	$26.25	$13.3	$9.3	$6.7

4.19.4 LTV vs CoCA over time

The graph (Figure 6) comparing LTV and CoCA over time highlights the evolving profitability dynamics of the QoL metric for individual homebuyers and frequent users. In the short term, the LTV for individual homebuyers is $288, and for frequent users,

it is $669, with a CoCA of $55. This results in an LTV/CoCA ratio of 5.2:1 for individual homebuyers and 12.2:1 for frequent users, reflecting strong returns despite higher acquisition costs.

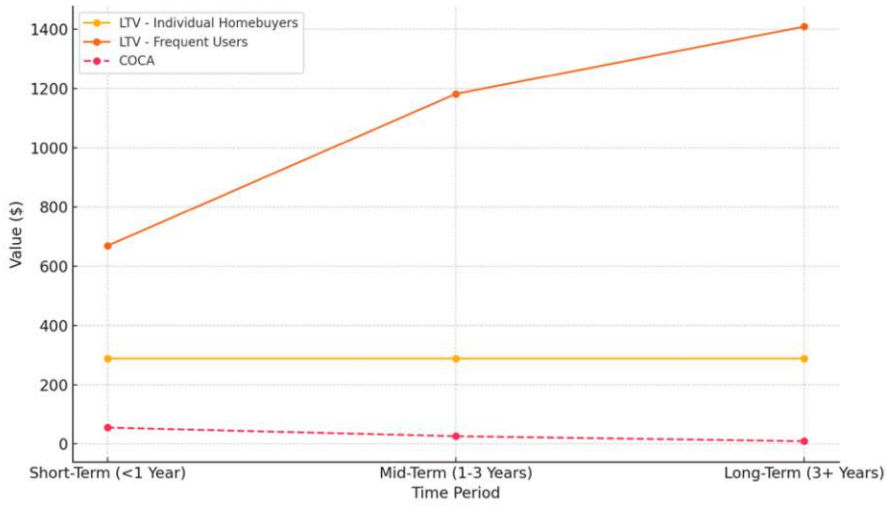

Figure 6: LTV vs CoCA over time (source – self-developed)

In the mid-term (1–3 years), the LTV for frequent users rises to $1,182 as repeat usage increases, while the CoCA reduces to $26, which is conservative estimate. This yields an LTV/CoCA ratio of 11.1:1 for individual homebuyers and 45.5:1 for frequent users, indicating significant efficiency gains in customer acquisition.

In the long term (3+ years), frequent users' LTV reaches its peak at $1,409, and CoCA decreases further to $9, which is conservative estimate. The LTV/CoCA ratio for individual homebuyers improves to 32:1, while for frequent users, it reaches an outstanding 156.6:1, showcasing the dominance of frequent users as the most profitable segment.

The QoL metric relies on a highly complex comparative scoring algorithm, which places the company's R&D expenses above those of an average software-as-a-service (SaaS) business. Developing and maintaining advanced machine learning models, integrating real-time data sources, and refining natural language processing capabilities require significant investment in research and engineering talent. This is closer to the R&D intensity of companies in highly specialised technology sectors, although not as high as in biotechnology.

Given the elevated R&D requirements, the company's high LTV-to-CoCA ratio is essential to ensure profitability and sustainability. The strong profitability margins, especially for frequent users, provide confidence that the revenue generated will

cover not only direct operational costs but also the substantial R&D expenses needed to keep the algorithm competitive and innovative.

While this scenario increases risk, it also justifies the focus on creating a premium product with a substantial value proposition. The high LTV-to-CoCA ratio, supported by efficient acquisition strategies and a scalable business model, ensures sufficient profit margins to sustain the necessary R&D investments while maintaining competitive pricing and business growth.

4.20 Identify key assumptions

4.20.1 Value Perception Assumption

The most critical assumption is the Value Perception Assumption, which posits that customers will perceive the QoL metric as delivering significant value compared to existing alternatives, such as real estate agents or traditional listing platforms. This assumption underpins the entire value proposition of the business, as the QoL metric is designed to address inefficiencies in the property search process and provide a data-driven approach to decision-making.

If this assumption holds true, customers will be willing to pay the proposed price for the product, justifying the high R&D and marketing expenses. However, if customers fail to see this value—due to a lack of awareness, scepticism about its effectiveness, or preference for established alternatives—the business model could face significant challenges. This assumption directly impacts customer acquisition, retention, and overall market adoption, making it the top priority for validation.

4.20.2 Distribution model assumption

The second critical assumption is the Distribution Model Assumption, which assumes that real estate listing companies will be willing to integrate the QoL metric into their platforms. These partnerships are essential for reaching a wide customer base, as the current business strategy depends entirely on leveraging existing listing platforms as distribution channels.

If listing companies refuse integration—due to concerns about competition, lack of perceived value, or technical hurdles—there is currently no viable alternative in the short or mid-term. The only fallback option would be developing an in-house real estate listing platform, which is not feasible in the near term due to high costs,

resource requirements, and the time needed to establish credibility in a competitive market.

This assumption is vital to the business's immediate scalability and success. A failure to secure these partnerships would pose a significant risk to the distribution model and overall viability of the product.

4.20.3 Product feasibility assumption

The third critical assumption is the Product Feasibility Assumption, which posits that end users, particularly homebuyers, will find the price point of 0.1% of the average property cost both reasonable and acceptable. This assumption underlies the pricing framework and directly impacts revenue generation and market adoption.

If the assumption holds, users will perceive the QoL metric as a valuable investment that justifies the cost, given its ability to save time, improve decision confidence, and reduce effort during the property search process. However, if customers view the price as excessive or fail to connect the cost with the tool’s value, it could lead to reduced adoption and limit market penetration.

This assumption is critical for validating the pricing strategy and ensuring that the perceived value aligns with what customers are willing to pay. Failure to confirm this feasibility could require significant adjustments to the pricing structure or value proposition to better meet customer expectations.

4.20.4 Team composition assumption

The fourth critical assumption is the Team Composition Assumption, which assumes that the business will be able to attract and retain the right teammates with the skills, experience, and dedication needed to execute the plan effectively. For a startup, having the right team is crucial, as missteps in team composition can derail even the most well-crafted business plan and lead to significant delays and wasted resources.

If the assumption holds, the business will secure a team capable of delivering on both the technical and operational aspects, such as developing the complex scoring algorithm, establishing partnerships, and executing the go-to-market strategy. Conversely, failing to assemble a strong team could result in inefficiencies, project delays, or poor execution, undermining the business’s ability to succeed in a competitive market.

This assumption is fundamental to the overall success of the venture, as the early team lays the foundation for the company's trajectory and ability to adapt to challenges and opportunities. Validating this assumption requires a clear strategy for identifying, recruiting, and retaining top talent.

4.20.5 Funding assumption

The fifth critical assumption is the Funding Assumption, which assumes that the business will successfully attract a minimum of $2 million in funding by the third quarter of Year 2. This funding is essential for scaling operations, completing algorithm development, enhancing the product's market readiness, and supporting marketing efforts.

If this assumption holds, the secured funding will provide the necessary capital to achieve growth objectives and cover operational costs, including R&D, marketing, and team expansion. However, failing to meet this target could severely hinder progress, forcing the business to downscale or delay critical milestones.

This assumption highlights the importance of crafting a compelling value proposition for investors, demonstrating market potential, and building confidence in the management team's ability to execute the business plan. Securing this funding is crucial for sustaining the venture through its growth phase and ensuring long-term success.

5 Conclusion

The thesis has demonstrated that the development and deployment of the Quality of Listing (QoL) metric as a business venture is both feasible and potentially profitable, provided key assumptions are met. Through a structured business plan, the research has outlined the strategic, operational, and financial pathways necessary to bring this innovative solution to market. The findings support the conclusion that the QoL metric addresses a critical pain point in the U.S. real estate market—information overload and inefficiency in property searches—while offering substantial value to both users and stakeholders.

The feasibility of the QoL metric venture is underpinned by several factors:

Market Demand: The QoL metric satisfies an unmet need for a data-driven, user-friendly property search tool, as validated by stakeholder interviews and market analysis. The target audience, comprising tech-savvy, high-income homebuyers in urban centres like Austin, Texas, demonstrates a strong alignment with the platform's value proposition.

Technological Viability: The development of the QoL metric, leveraging machine learning and geospatial analytics, is both technically achievable and scalable. Partnerships with academic institutions for algorithm development ensure access to cutting-edge expertise and resources.

Operational Strategy: A phased approach, beginning with pilot testing in Austin, reduces initial risk while building a foundation for nationwide scalability. The structured timeline for development, customer acquisition, and market expansion enhances the venture's operational feasibility.

Partnership Opportunities: Integration with established real estate platforms such as Zillow and Redfin is a cornerstone of the business model. These partnerships are expected to provide access to large user bases, enhance credibility, and streamline adoption.

The profitability of the QoL metric hinges on its ability to monetize a clear value proposition while maintaining efficient operations:

Revenue Model: A tiered pricing structure, combined with targeted marketing efforts, ensures broad accessibility and maximizes revenue potential. Financial projections estimate a total addressable market of $10 million annually in the initial deployment market, with significant room for growth as the platform scales.

Customer Retention: The platform's ability to save users up to 80% of their search time and improve decision confidence provides a strong incentive for repeat usage and customer loyalty. Additional revenue streams, such as premium features and strategic partnerships, further enhance profitability.

Cost Management: Operational efficiency is achieved through the use of scalable cloud infrastructure and data partnerships, ensuring that the cost of customer acquisition (CoCA) remains favourable relative to the platform's lifetime value (LTV) per user.

While the QoL metric venture shows promise, its success depends on meeting several critical assumptions:

Partnerships: Securing collaborations with leading real estate platforms is vital to gain market access and ensure seamless user integration.

Algorithm Accuracy: The platform's ability to deliver reliable, actionable insights is contingent upon continuous refinement of the QoL algorithm.

Customer Acquisition: Effective marketing strategies and early adopter engagement are necessary to build a loyal user base and establish credibility in the competitive market.

In conclusion, the QoL metric has the potential to transform the property search experience by addressing inefficiencies and empowering users with data-driven insights. By leveraging strategic partnerships, technological innovation, and targeted market penetration, the venture is positioned to achieve both feasibility and profitability. While challenges such as algorithm optimization and partnership negotiations require careful management, the foundation laid by this business plan provides a clear pathway to success. The QoL metric represents a compelling opportunity to bridge the gap between real estate technology and consumer needs, delivering sustained value to its stakeholders and reshaping the property search process.

Bibliography

Ali, W., Samarasinghe, D.A.S., Feng, Z., Wilkinson, S., and Rotimi, J.O.B. (2025): A Systematic Literature Review on Digital Transformation in Real Estate: Challenges and Opportunities. *Smart and Sustainable Built Environment*, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/SASBE-04-2024-0111 - retrieved on February 19, 2025.

ATTOM Data Solutions (2025): *Solutions Overview.* https://www.attomdata.com/solutions/ - retrieved on January 10, 2025.

Aulet, Bill (2013): *Disciplined Entrepreneurship.* Wiley, Hoboken, NJ, p. 141.

Aulet, Bill (2024): "Step 19: Calculate the Cost of Customer Acquisition (CoCA)." *Disciplined Entrepreneurship.* John Wiley & Sons, Inc.

Bortolini, Rafael Fazzi (2021): Lean Startup: A Comprehensive Historical Review. *Management Decision*, Vol. 59 No. 8, pp. 1765-1783.

Burke, Andrew, Fraser, Stuart, and Greene, Francis J. (2010): The Multiple Effects of Business Planning on New Venture Performance. *Journal of Management Studies*, Vol. 47 No. 3, pp. 391-415.

Census Reporter (n.d.): *Profile of Austin, TX.* https://censusreporter.org/profiles/16000US4805000-austin-tx/ - retrieved on January 10, 2025.

Chutiphongdech, T., and Vongsaroj, R. (2021): Industry Analysis by PESTEL-AHP: A Case Study of Thailand Public Airports. *NIDA Case Research Journal*, Vol. 13 No. 2, pp. 76-100. https://doi.org/10.2139/ssrn.4084702 - retrieved on February 15, 2025.

Chwolka, A., and Raith, M.G. (2011): The Value of Business Planning Before Start-up—A Decision-Theoretical Perspective. *Journal of Business Venturing*. https://doi.org/10.1016/j.jbusvent.2011.01.002 - retrieved on February 15, 2025.

CoreLogic (2024): *REAS Overview.* https://www.corelogic.com/wp-content/uploads/sites/4/2024/02/REAS-Overview.pdf - retrieved on January 7, 2024.

Delmar, F., and Shane, S. (2003): Does Business Planning Facilitate the Development of New Ventures? *Strategic Management Journal*, Vol. 24, pp. 1165-1185. https://doi.org/10.1002/smj.349 - retrieved on February 17, 2024.

Evangelou, Nadia (2020): *How Long Do Homeowners Stay in Their Homes?* National Association of REALTORS®. https://www.nar.realtor/blogs/economists-

outlook/how-long-do-homeowners-stay-in-their-homes - retrieved on January 9, 2025.

Glaeser, Edward L. (2013): A Nation of Gamblers: Real Estate Speculation and American History. *American Economic Review: Papers and Proceedings*, Vol. 103 No. 3, pp. 1-42.

IONAȘCU, Elena, and Anghel, Ion (2020): Improvement of the Real Estate Transparency Through Digitalisation. *Proceedings of the International Conference on Business Excellence*, pp. 371-384. https://doi.org/10.2478/picbe-2020-0036 - retrieved on February 19, 2025.

Julian E. Lange, Mollov, Aleksandar, Pearlmutter, Michael, Singh, Sunil, and Bygrave, William D. (2007): Pre-start-up Formal Business Plans and Post-start-up Performance: A Study of 116 New Ventures. *Venture Capital*, Vol. 9 No. 4, pp. 237-256. https://doi.org/10.1080/13691060701414840 - retrieved on February 19, 2025.

Kushchenko, O., and Mytrofanova, L. (2024): Analysis of the Principles of Sustainable Development in Strategic Business Planning. *Publishing House "Baltija Publishing"*. http://www.baltijapublishing.lv/omp/index.php/bp/catalog/download/541/14375/30180-1 - retrieved on February 20, 2025.

Liao, Jianwen Jon, and Gartner, William B. (2007): The Influence of Pre-Venture Planning on New Venture Creation. *Journal of Small Business Strategy*, Vol. 18 No. 2, pp. 1-22.

Manochehri, S., Amani, R., and Mamkhezri, J. (2025): Spatial Analysis of Speculation in the US Housing Market. *Future Business Journal*, Vol. 11, p. 17. https://doi.org/10.1186/s43093-025-00439-4 - retrieved on February 19, 2025.

Mukhtar, F., Mahmood, N., & Kareem, S. (2021): *Search Engine Optimization: A Review. Applied Computer Science,* 17(1), 70-80. https://ph.pollub.pl/index.php/acs/article/view/3098 - retrieved on January 9, 2025.

Naeem, N., Rana, I.A., and Nasir, A.R. (2023): Digital Real Estate: A Review of the Technologies and Tools Transforming the Industry and Society. *Smart Construction and Sustainable Cities*, Vol. 1, p. 15. https://doi.org/10.1007/s44268-023-00016-0 - retrieved on February 15, 2025.

National Association of REALTORS® (2025): *Summary of November 2024 Existing Home Sales Statistics.* https://www.nar.realtor/sites/default/files/2024-12/ehs-11-2024-summary-2024-12-19.pdf - retrieved on January 13, 2025.

Norada Real Estate Investments (n.d.): *Austin Real Estate Market.* https://www.noradarealestate.com/blog/austin-real-estate-market/ - retrieved on January 10, 2025.

Osterwalder, Alexander, and Pigneur, Yves (2010): *Business Model Generation.* John Wiley & Sons, Hoboken, NJ.

Owotemu, A. E., and Ibaru, A. (2025): Technological Transformation in Infrastructure & Real Estate: AI, Blockchain, Project Management & Policy Implications Across Leading Markets. *American Journal of Industrial and Business Management*, Vol. 15 No. 1, pp. 155-174. https://www.scirp.org/pdf/ajibm2025151_92123586.pdf - retrieved on February 18, 2025.

Rasheed, N., Shahzad, W., Khalfan, M., and Rotimi, J. (2022): Risk Identification, Assessment, and Allocation in PPP Projects: A Systematic Review. *Buildings*, Vol. 12 No. 8, p. 1109. https://doi.org/10.3390/buildings12081109 - retrieved on February 18, 2025.

Realeflow (2025): *Realeflow Platform.* https://realeflow.com/ - retrieved on January 14, 2025.

Realtor.com (n.d.): *Austin, TX Real Estate Overview.* https://www.realtor.com/realestateandhomes-search/Austin_TX/overview - retrieved on January 10, 2025.

RealTrends (n.d.): *New Data Shows Home Buyers Spend 124 Hours on Average to Find a Home.* https://www.realtrends.com/articles/new-data-shows-home-buyers-spend-124-hours-on-average-to-find-a-home/ - retrieved on January 11, 2025.

Sahlman, William A. (2003): *A Method for Valuing High-Risk, Long-Term Investments.* Harvard Business School Case 9-288-006, August 12, 2003.

Saiz, Albert, and Salazar Miranda, Arianna (2017): Real Trends: The Future of Real Estate in the United States. *MIT Center for Real Estate Research Paper No. 5*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3100934 - retrieved on February 15, 2025.

Saull, A., Baum, A., and Braesemann, F. (2020): Can Digital Technologies Speed Up Real Estate Transactions? *Journal of Property Investment & Finance*, Vol. 38 No. 4, pp. 349-361. https://doi.org/10.1108/JPIF-09-2019-0131 - retrieved on February 15, 2025.

Shiller, Robert J. (2005): Behavioral Economics and Institutional Innovation. *Southern Economic Journal*, Vol. 72 No. 2, pp. 269–283.

Statista (2024): *U.S. Existing Home Sales.* https://www.statista.com/statistics/226144/us-existing-home-sales/ - retrieved on January 3, 2025.

Thukral, A. (2024): Impact of Transformative Technologies on Indian Global Capability Centers: A Leadership Perspective. *Open Journal of Business and Management*, Vol. 13 No. 1, pp. 237-257. https://www.scirp.org/pdf/ojbm2025131_151534199.pdf - retrieved on February 23, 2025.

Ullah, Fahim, and Sepasgozar, M. E. Samad (2020): [*Key Factors Influencing Purchase or Rent Decisions in Smart Real Estate Investments: A System Dynamics Approach Using Online Forum Thread Data.*] Sustainability. https://www.mdpi.com/2071-1050/12/11/4382, Section 1.6 - retrieved on January 12, 2025.

Wei, Y.-l., Long, D., Li, Y.-k., and Cheng, X.-s. (2018): Is Business Planning Useful for the New Venture Emergence? Moderated by the Innovativeness of Products. *Chinese Management Studies*, Vol. 12 No. 4, pp. 847-870. https://doi.org/10.1108/CMS-10-2017-0315 - retrieved on February 23, 2025.

Wikipedia (n.d.): *List of United States Cities by Population.* https://en.wikipedia.org/wiki/List_of_United_States_cities_by_population - retrieved on January 13, 2025.

Wintner, S. (2010): *Formal Language Theory.* In *The Handbook of Computational Linguistics and Natural Language Processing* (eds A. Clark, C. Fox, and S. Lappin). https://doi.org/10.1002/9781444324044.ch1 - retrieved on January 12, 2025.

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