UProperty Inc.

Requirement Specification
&
Stakeholder Analysis Document

Project	**UProperty's new portal**
Version	**23**
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TASK 1
Requirement Specification

1. Identifying Project Requirements

BUSINESS CONTEXT

Understanding the client's business context and project initiatives is the initial step towards interpreting requirements more thoroughly and accurately.

Company background

UProperty, Inc., an Australian real estate startup, envisions transforming the industry and Victoria's property landscape using cutting-edge AI technology and innovative strategies. The company is dedicated to revolutionising the established practices of buying, selling, and managing properties.

Project objectives

To achieve this vision, UProperty's leadership has initiated this project to develop an advanced online real estate portal to offer users exceptional services and challenge industry norms.

Intended product values

The intended product will address the fundamental needs and satisfy advanced demands related to efficiency, transparency, and user engagement throughout the buying process. Additionally, it will be designed to support the customer base's rapid growth and evolving needs.

1.1. Functional Requirements

ID	Functional Requirement
F-1	The portal shall secure new user registration F-1.1. the portal shall verify the user's email. F-1.2. the portal shall encrypt the user password.
F-2	Property owners shall be able to list their properties where: F-2.1. the listing shall have detailed text descriptions. F-2.2. the listing shall include relevant and appropriate images. F-2.3. the listing shall connect to location maps to show the approximate location.
F-3	Users shall be able to search for properties on the portal F-3.1. users shall be able to search based on location and postcode. F-3.2. users shall be able to search based on price range. F-3.3. users shall be able to search based on the type of property. F-3.4. users shall be able to search based on the property amenities.

F-4	Users shall be able to schedule property viewings on the portal F-4.1. users shall be able to schedule property inspections and appointments directly with real estate agents and property owners. F-4.2. users shall be able to save appointments to their external calendar systems.
F-5	Users shall be able to receive personalised property alerts F-5.1. users shall be able to set specific search criteria. F-5.2. users shall be able to save specific search criteria. F-5.3. users shall be able to receive notifications when matching results become available.
F-6	The portal shall deploy AI algorithms to deliver personalised property recommendations F-6.1. algorithms shall analyse user preferences. F-6.2. algorithms shall analyse user search history on the portal. F-6.3. algorithms shall analyse user behaviour patterns.
F-7	The system shall deploy Natural Language Processing (NLP) to enhance search results and personalised recommendations F-7.1. NLP shall analyse property text descriptions. F-7.2. NLP shall extract key features, sentiments and attributes from these text descriptions.
F-8	The portal should deploy image recognition technology to enhance visual representation and aid users in making well-informed decisions. F-8.1. the portal shall identify key features in property images. F-8.2. the portal shall emphasise these features.
F-9	The portal shall deploy AI-powered algorithms to automate property valuation processes F-9.1. the automation shall give instant property estimates to users.
F-10	The portal should employ predictive analytics models to predict market trends F-10.1. the models should be able to analyse property prices. F-10.2. the models should give insights into property demand and supply dynamics to users.
F-11	The portal should deploy Virtual Reality (VR) technology to offer immersive 3D property tours to users.
F-12	The portal should deploy AI algorithms to provide personalised financial analysis tools for users F-12.1. the portal should estimate mortgage affordability. F-12.2. the portal should calculate property taxes. F-12.3. The portal should estimate the Return on Investment (ROI) for buyers.

1.2. Non-Functional Requirements

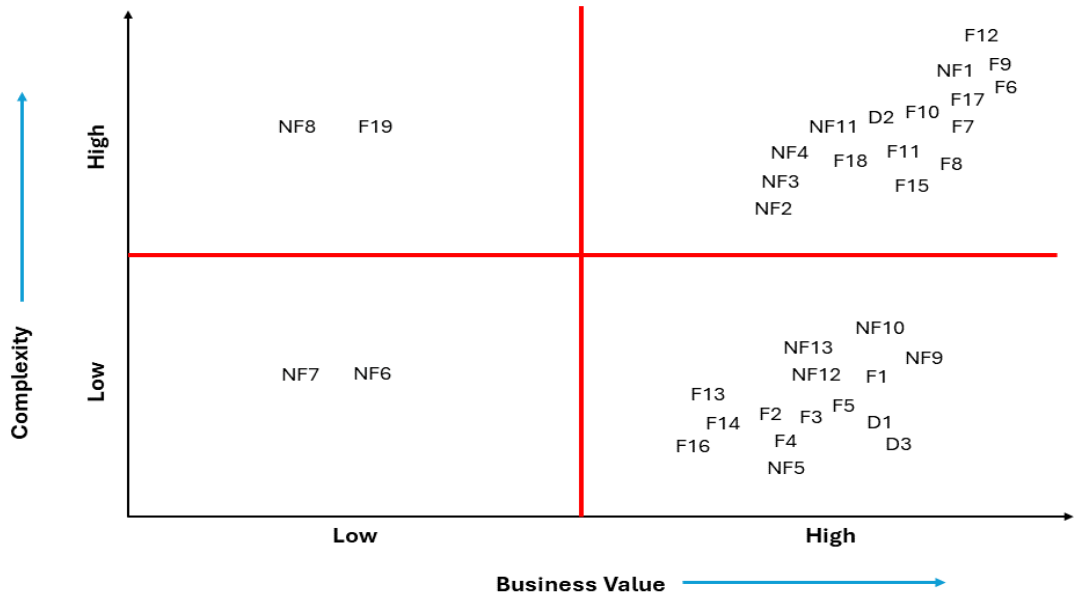
ID	Non-Functional Requirement
NF-1	The system shall use Google Cloud to accommodate a surge in user demand.
NF-2	The portal should offer seamless user interaction with streamlined processes and optimised workflows for property searches, listings, and transactions.
NF-3	The portal should offer a responsive experience to users NF-3.1. the portal should offer swift response times NF-3.2. the portal should offer smooth navigation across various devices and platforms.
NF-4	The system should have a modular architecture to integrate new features and functionalities flexibly.
NF-5	The portal should have the corporate green colour theme across all its pages and elements.
NF-6	Users should be able to sign up easily using their Google or Yahoo accounts. Assumption: The portal shall have email and mobile number sign-up options on its site. Registration by linking with Google or Yahoo accounts is optional and only exists to enhance convenience and usability for users. Hence, this requirement is non-functional.
NF-7	The portal should integrate with social media platforms including Facebook, Twitter and Instagram. Assumption: Linking to social media platforms is a common marketing practice on many websites to increase convenience for users when sharing information. However, the integration can be considered as optional. Hence, this requirement is non-functional.
NF-8	The portal should support multiple languages. Assumption: The portal uses Australian English as the main language. While having multiple languages on the portal is beneficial to users' usability and engagement, it is optional as we assume that users already have other translation tools integrated in their browsers. Hence, this is a non-functional requirement.
NF-9	All web pages shall be transferred using SSL to enhance the portal's security.
NF-10	The portal shall utilise the J2EE enterprise framework for technology development.
NF-11	The system shall implement stringent measures to address cybersecurity risks effectively. Assumption: Stringent cybersecurity practices apply to the system as a whole; hence they are non-functional.

NF-12	The portal should have a simple, intuitive interface and user experience.
NF-13	The portal should have a visually appealing and consistent interface.

1.3. Domain Requirements

ID	Domain Requirement
D-1	The portal shall adhere to Victorian real estate laws regarding property disclosures and contractual agreements.
D-2	The portal shall connect to Consumer Affairs Victoria's latest property sales data through their API. Assumption: Since property sales data is public information and is a common practice to access the latest data in the real estate industry, this requirement is under domain.
D-3	The portal shall adhere to all legal obligations concerning data privacy in Australia.

2. Prioritisation Matrix



2.1. Functional Requirements

ID	Prioritisation Matrix	Justification
F-1	Low complexity - High business value	With the user registration feature as a base, email verification and password encryption are common in modern security practices without many technical challenges. Furthermore, with consultation from the head of the Australian Cyber Security Center, UProperty can simply implement this requirement. By implementing this, UProperty will enhance its data security regarding user registration, thereby increasing customer trust and confidence in the portal.
F-2	Low complexity - High business value	Listing properties is a fundamental function of real estate portals, with established practices from market leaders. With basic listing criteria, this requirement also has minimal technical hurdles. This requirement provides UProperty with essential business operations standardised listing procedures and well-defined listing attributes.
F-3	Low complexity - High business value	Searching for properties with specific criteria is a fundamental feature with less technical sophistication. Moreover, partnering with REA Group could help UProperty learn from the market leader about this requirement.

		This requirement equips UProperty with core business functionality that fulfills users' basic needs.
F-4	Low complexity - High business value	Appointment scheduling and integration into calendar systems are standard industry practices, which represent low technical complexity. Moreover, assuming that appointments will be marked on calendars on external platforms, this requirement will simply involve handling the interface. This requirement will enhance customer experience and efficiency in managing appointments, increasing UProperty's user preference and growth.
F-5	Low complexity - High business value	This functionality can be easily implemented using setting panels. Moreover, saving search criteria only involves storing users' criteria in a database and displaying an interface 'Save' button. Matching user preferences in the database with the listings and sending notifications would also be manageable with mechanisms such as email and push notifications. This requirement will enhance user engagement on the portal, potentially driving sales and retention as users see that they can get real-time personalized alerts without re-entering their specific search every single time.
F-6	High complexity - High business value	Although having a team of experts and a senior AI consultant, this requirement will still be challenging for UProperty due to the rapidly evolving nature of AI technology and the necessary resources required to get AI to learn existing data and deliver accurate recommendations. Moreover, the complexity is compounded by choosing AI algorithms and integrating them with current systems. However, should this requirement be implemented, UProperty could gain a strong competitive advantage, and distinguish itself in the market.

F-7	High complexity - High business value	NLP is an emerging and fast-changing technology with high complexity to implement. Thus, it demands specialised expertise and considerable time to train NLP models on the data for precise search results. This requirement would grant UProperty a distinguishing capability in the market. and reinforce the company's strategic vision.
F-8	High complexity - High business value	Utilizing image recognition technology entails complex components, including a large database for images, advanced algorithms, and different computational resources. Moreover, property owners may need to provide high-resolution image quality, which could be burdensome. This requirement will provide a significant differentiation advantage for UProperty.
F-9	High complexity - High business value	As mentioned, the rapid evolution of AI and extensive resources and data needed for training can make this requirement complex and challenging. Additionally, significant resources may be required to merge data from different databases and integrate with existing workflows to achieve desired outcomes and processes. Automating processes will enable UProperty to streamline its operations, improve resource allocation and scalability and facilitate users in their decision-making process.
F-10	High complexity - High business value	Deploying predictive analytics models demands considerable expertise and resources, involving the integration of data systems, real-time updates, and continuous analysis and evaluation. This will empower UProperty to stay ahead of market trends, providing updated industry insights for users making investment decisions. This will then lead to customer satisfaction and sales conversion.

2.2. Non-Functional Requirements

ID	Prioritisation Matrix	Justification
NF-1	High complexity - High business value	Assuming that UProperty is now transitioning the existing on-premise infrastructure to cloud computing is challenging. This requires a whole architecture redesign, complex data migration, and integration with legacy systems. However, this requirement provides significant long-term scalability to accommodate evolving user needs and facilitate business expansion.
NF-2	High complexity - High business value	This requirement entails effective coordination between different resources, such as front-end and back-end development and testing, which can be complex and take plenty of time. Additionally, process optimisation includes deep analysis, technology involvement and ongoing assessment. Implementing this will elevate user engagement with the portal, which could lead to good word-of-mouth for UProperty, a reduction in bounce rate, and a strengthening of its market position.
NF-3	High complexity - High business value	Optimising the coding to provide efficient time requires proficient knowledge and extensive time for testing. Moreover, accommodating different screen sizes and compatibility needs will make this complex. However, this requirement will enhance the portal's responsiveness, thereby increasing user engagement and reducing its bounce rate. Additionally, it will create a consistent user experience and improve interaction on the portal.
NF-4	High complexity - High business value	Assuming that the legacy systems possess significant interdependence, this transition requires handling complex integration, testing, and validation. Executing this requirement will provide considerable room for innovation, swift adaptability to user trends and scalability.
NF-5	Low complexity - High business value	By determining a clear color scheme, the implementation becomes simple, consisting of widespread application of the chosen color code. This requirement guarantees uniformity and consistency in brand identity, which is valuable for a startup.

NF-6	Low complexity - Low business value	This requirement requires minimal effort and resources since Google and Yahoo registration methods are widely used. The process will occur on external platforms. Thus, UProperty's portal simply needs to integrate the sign-in button into its interface. While this would offer users a convenient signup option, it may not provide significant added value since the portal already has its own signup method.
NF-7	Low complexity - Low business value	Social media integration has become a common strategy in today's digital landscape to promote user engagement across platforms. Numerous established use cases already exist, which would facilitate the integration process for UProperty. Such integration holds the potential to extend the portal's reach significantly and foster user engagement.
NF-8	High complexity - Low business value	Assuming UProperty will synchronise with other translation tools, this includes complex, custom development work for integration and regular maintenance to ensure accurate translations. While it enhances accessibility and inclusivity, its business value may not be significant, as users could already have preferred translation tools installed on their devices.
NF-9	Low complexity - High business value	SSL is a reliable and established protocol. With the current expert team, UProperty will likely execute this easily. This will offer the company robust data security, essential to safeguard brand reputation and user trust.
NF-10	Low complexity - High business value	J2EE is an established and widely accepted framework across many business cases. Additionally, with the current expertise, this requirement has become less complex for UProperty. This will provide the company with a flexible IT infrastructure and robust security features.

2.3. Domain Requirements

ID	Prioritisation Matrix	Justification
D-1	Low complexity - High business value	This requirement is straightforward since the laws are well-established with explicit guidelines. Additionally, the partnership with REA Group could facilitate the adoption of the practices as the Group is a pioneer in the market and likely to have compliance with Victorian laws. This requirement will assist UProperty in achieving legal compliance, strengthening customer trust, and enhancing its market reputation.
D-2	High complexity - High business value	Despite Consumer Affairs Australia's assistance and reliable API protocols, this requirement will require significant efforts in data mapping, meeting system requirements, and testing integration. This will help UProperty stay current with the market, promptly respond to market changes, and provide users with updated information.
D-3	Low complexity - High business value	This requirement is low-complex since regulations are well-established and UProperty will receive expert guidance from the Australian Cyber Security Center. This will help UProperty meet legal standards, thereby increasing customer trust and its reputation.

3. Requirement Prioritization

Considering the Intended Product Values as above in part 1, with the aim of bringing the best value to stakeholders within an approved budget of $5 million and schedule (31st Dec 2026), as well as a commitment to project quality of an advanced property portal, the following ten requirements are prioritised. The sequence of requirements is not important as we assume all 10 requirements are equally important.

No.	ID	Requirement	Justification
1	F-2	Property owners shall be able to list their properties where: F-2.1. the listing shall have detailed text descriptions, F-2.2. the listing shall include relevant and appropriate images, F-2.3. the listing shall connect to location maps to show approximate location.	In order to enhance the user experience in searching property, this practical function will efficiently and visually provide details of properties that the owners want to promote to buyers. Listing properties is also a core function in real estate portals; hence, it is necessary to include F-2.
2	F-3	Users shall be able to search for properties on the portal F-3.1. users shall be able to search based on location and postcode, F-3.2. users shall be able to search based on price range, F-3.3. users shall be able to search based on the type of property, F-3.4. users shall be able to search based on the property amenities.	In terms of efficiency and user engagement during the searching properties step, this core function provides buyers with detailed information about properties, such as price range and location, that will allow them to easily make property comparisons later.
3	F-13	The portal shall have an in-platform messaging feature that allows users to message directly property owners and agents	Since clear communication between users and real estate agents is a vital characteristic of the portal, this messaging feature will efficiently allow smooth communication throughout the selling and buying processes, avoiding misunderstandings and enhancing the accuracy and transparency of information among users.
4	F-6	The portal shall deploy AI algorithms to deliver personalised property recommendations F-6.1. algorithms shall analyse user preferences, F-6.2. algorithms shall analyse user search history on the portal, F-6.3. algorithms shall analyse user behaviour patterns.	This advanced function will enhance user engagement when the advanced analysis algorithms enable unique and relevant recommendations to users and significantly maximise the search journey, reducing search time. Furthermore, UProperty Inc. - has the capacity to implement this sophisticated function, as it has a dynamic team of 20 staff members and a robust focus on AI technology.

5	F-17	The portal shall integrate with the backend systems of realestate.com.au	The data exchange between UProperty Inc. and the realestate.com.au portal - is an essential function to strengthen the cooperation and integration with its strategy partnership – the REA Group, which in returns will be a long-term benefit to the company, especially at calling for investments that allow the company to improve its online housing portal and enhance customer services.
6	NF-1	The system shall use Google Cloud to accommodate a surge in user demand.	The portal will integrate a large database from multiple sources and run in back-end advanced AI algorithms and software to optimize the property selling and buying process, thus high scalability and security are important requirements. Moreover, the Cloud platform is the information technology trend in the market. Therefore, this function is not just to enable the future expansion and growth of the company but also to deliver good project quality to stakeholders.
7	NF-3	The portal should offer a responsive experience to users NF-3.1. the portal should offer swift response times, and NF-3.2. the portal should offer smooth navigation across various devices and platforms	Quicker response times and connected devices will give the portal a competitive advantage and enhance its efficiency and user engagement.
8	NF-5	The portal should have the corporate green colour theme across all its pages and elements.	As a start-up company, UProperty Inc. is a new company in the real estate market. Hence, the consistency of brand colour used throughout the portal will enhance the company's recognition in the market. This function can be easily delivered to stakeholders within the scheduled time and budget.

9	D-1	The portal shall adhere to Victorian real estate laws regarding property disclosures and contractual agreements.	Real estate buying process should comply with local law enforcement to enhance the security and transparency of the process, building trust with users.
10	D-3	The portal shall adhere to all legal obligations concerning data privacy in Australia.	Since the portal will interact with multiple stakeholders' data - users, partnering financial institutions, etc. - it is essential that UProperty implement cybersecurity practices to protect these data. Furthermore, the company also needs to protect its AI algorithms' intellectual property assets (in multiple functional requirements) to maintain a competitive advantage. Due to the limited project budget and time, data privacy compliance will be the first step in the long-term cybersecurity practices that UProperty can implement in the future.

TASK 2
Stakeholder Analysis

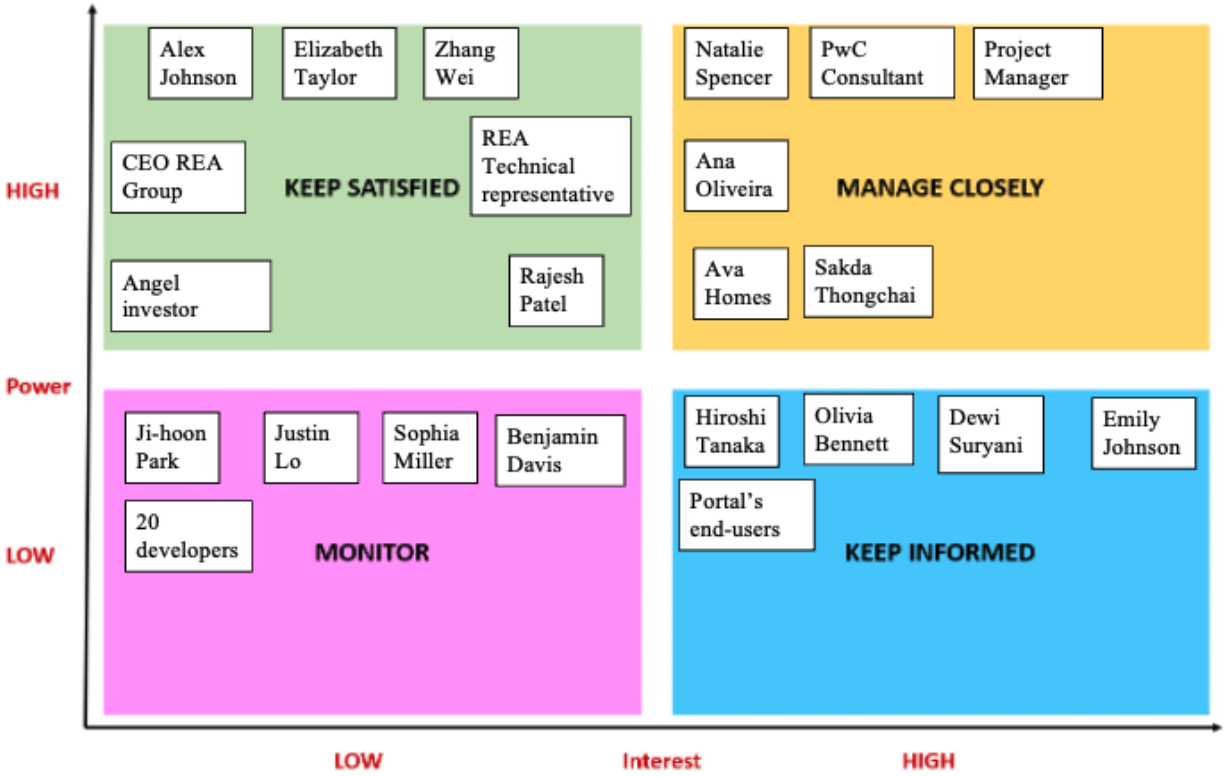
4. Stakeholders and their Roles

No.	Stakeholder Name	Role	Inclusion on the Project Steering Committee
1	Alex Johnson	CEO of UProperty Inc.	**Yes**. Considering Alex's leadership role at UProperty, his responsibility to oversee the development of the portal, and his rapport with external stakeholders e.g., Zhang Wei, the CEO of PwC Australia, he should be considered for the PSC.
2	Elizabeth Taylor	COO of UProperty Inc.	**No**. While Elizabeth has high authority at UProperty, her role is less directly related to the development of the portal as she is likely to focus more on the company's operation. Hence, she should not be considered for the PSC to oversee the project.
3	Natalie Spencer	CTO of UProperty Inc.	**Yes**. Natalie was entrusted with leading and managing the project, hence she should be part of the PSC.
4	Zhang Wei	CEO of PwC Australia	**Yes**. Zhang is the CEO of PwC Australia, the consultancy firm that advises UProperty on cloud solutions and the underlying IT infrastructure for the portal. Therefore, Zhang's role is important in the project as he has both decision-making power as well as representing the consultancy. Hence, he should be part of the PSC.
5	PwC Consultant	PwC Australia	**No.** Assuming that PwC will assign their personnel to be the cloud and IT subject matter experts, who will be involved in the project. This consultant will not be in the PSC as he/she has lower decision-making power than Zhang.

6	Hiroshi Tanaka	Senior marketing officer at realestate.com.au	**No.** Hiroshi advises on user experiences for the portal and is unlikely to hold a major role throughout the later phases of the project lifecycle, hence he is not in the PSC.
7	CEO REA Group	REA Group	**No.** As realestate.com.au is a strategic partner with UProperty and is likely to have invested in the company, the start-up can frequently update the project progression with a REA Group personnel, though this person will unlikely stay in the PSC.
8	REA Technical representative	Realestate.com.au/ REA Group	**Yes**. A technical representative from realestate.com.au will join the PSC to help integrate the backend systems of the portal with realestate.com.au and oversee the project, as REA Group is a strategic partner of UProperty. Ideally, this role is the Chief Technology Officer with technical knowledge and decision-making power.
9	Rajesh Patel	Head of Australian Security Centre	**No** While Rajesh has an important role in consulting cyber security practices, he is unlikely to directly manage the project throughout its life cycle, but rather acts as an advisor/subject matter expert in cybersecurity. Hence he should not be considered for the PSC.
10	Ji-hoon Park	IT specialist from Consumer Affairs Victoria	**No.** Ji-hoon holds a minor role since he mainly advises Natalie on connecting the portal with API from Consumer Affairs Victoria, hence he should not be in the PSC.
11	Project Manager	Project Manager at Quick Solutions	**Yes.** As the PM employed by Quick Solutions, the contractor of Project UProperty is responsible for managing and leading the project, and the PM should be included in the PSC.

5. Power Interest Grid

5.1. Power Interest Grid Representation



5.2 Rationale for Assigning the stakeholders to the grid

No.	Stakeholder Name	Role	Power Interest Quadrant / Justification
1	Alex Johnson	CEO of UProperty Inc.	**Keep Satisfied** CEO has the ultimate decision-making authority within an organization. His support is crucial to securing resources and removing potential roadblocks to the project. Although highly influential, the CEO may not be actively involved in day-to-day details of the initial phases because he is busy with other tasks.
2	Elizabeth Taylor	COO of UProperty Inc.	**Keep Satisfied** The COO has a significant influence on the organisation. Her alignment and support are critical for project success. Similar to the CEO, the COO's focus may be on broader strategic goals rather than the details of initial project planning.

3	Natalie Spencer	CTO of UProperty Inc.	**Manage Closely** The CTO has a significant role in making decisions regarding technology choices and implementations, making her influence on the project's direction significant. She also plays a key role in defining requirements and ensuring the project aligns with the organization's technological goals.
4	Zhang Wei	CEO of PwC Australia	**Keep Satisfied** As the CEO of the consulting firm, he has significant authority over resource allocation and strategic direction. Given his focus on the consulting firm's broader operations, the CEO may have limited involvement in the day-to-day details of the initial project stage.
5	PwC Consultant	PwC Australia	**Manage Closely** The external consultant directly influences the project's execution, particularly in implementing the cloud solution and establishing the IT infrastructure. The external consultant will work closely with the project team to ensure the chosen solutions meet requirements and align with broader goals in the initial stage.
6	Hiroshi Tanaka	Senior marketing officer at realestate.com.au	**Keep Informed** The senior marketing officer's insights into user experience and market trends significantly influence. While his expertise is invaluable, his primary focus is on evaluating user experiences with major property portals in the market rather than the nitty-gritty details of the initial planning stages.

7	CEO REA Group	REA Group	**Keep Satisfied** The REA Group CEO, a strategic partner of UProperty with a strong reputation in the property market, influences resource allocation for the realestate.com.au integration project during the planning stage. However, due to their focus on REA Group's broader operations, the CEO may not be involved in the project's daily details.
8	REA Technical representative	Realestate.com.au/ REA Group	**Keep Satisfied** The REA technical representative possesses in-depth knowledge of their systems and integration capabilities. Their expertise will influence the project's technical feasibility and design choices. While their knowledge is crucial during the planning and requirements stage, their primary focus may shift towards implementation details during the development phases.
9	Rajesh Patel	Head of Australian Security Centre	**Keep Satisfied** The security consultant's recommendations for security protocols are highly influential and shaped the project's security architecture and compliance requirements during initial planning. His primary involvement will likely focus on the stage of executing for detailed security requirements and design advice.
10	Ji-hoon Park	IT specialist from Consumer Affairs Victoria	**Monitor** The IT specialist's role is primarily advisory, focused on the API integration process for property sales data. His influence on the project and decision-making is likely limited. Due to his specific focus on data integration, their overall involvement in the project's initial stage may be minimal.
11	Project Manager	Project Manager at Quick Solutions	**Manage Closely** The project manager has decision-making authority over resource allocation, task scheduling, and steering the project's direction.