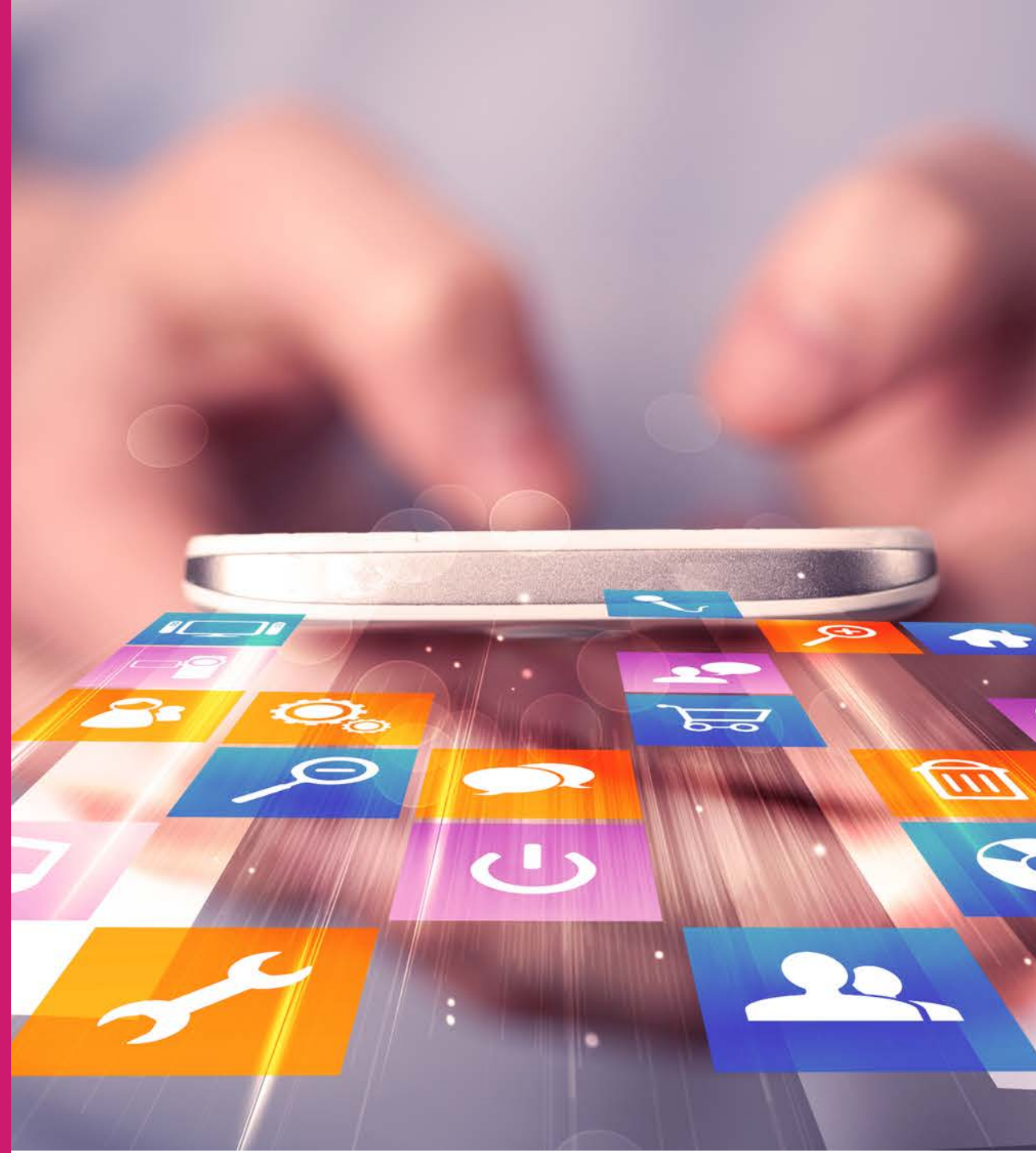# Mobile Application Delivery Guide

Steps for successful execution and great ROI

solnet

Are you considering mobile application development?

Do you want to deliver a delightful customer experience while achieving your business goals and unlocking insights?

Your digital roadmap most likely includes a mobile application strategy that seeks to truly engage customers and deliver key outcomes for other stakeholders (employees and shareholders) while achieving a good return on investment (ROI). With strategy in hand, it's time to execute and deliver a successful mobile application.

Today's customers are sophisticated and expect a sleek, engaging digital experience. They want their interactions to seamlessly address their needs, making it easy to tick off another item on their "to do" list.

In this guide, we'll look at the journey to delivering a delightful, engaging customer experience, from start to finish. We'll also focus on minimising risk along the way.

Common pitfalls:

- Focusing too heavily on the User Interface (UI) at the cost of addressing the fundamental business functions the mobile application is supposed to achieve, compromising the overall User Experience (UX)

- Failing to appreciate and implement the full end-to-end business processes required to deliver a seamless, rich experience that addresses both customer needs and business needs

- Lack of insight into the full scope and complexity of integrations, and the constraints of inflexible, fragile, legacy systems

- Lost opportunities as the result of skills deficits within the organisation, or in choosing the wrong delivery partners and/or platform

- Not managing delivery roadblocks properly

- Inadequate focus on testing and quality assurance which would have uncovered problems early

- Under-investment in both the initial product and in ongoing enhancements

- Underestimating the role of data, analytics, and success metrics

Steps to create a delightful, engaging & successful mobile application

1. Discover

Uncover requirements and associated end-to-end business processes

2. Define

Define the technical landscape — current state and future state

3. Set measures

Determine what success looks like by establishing the right metrics

4. Accelerate

Agree a suitable delivery model that enables agile delivery

Understanding stakeholder requirements & business processes

There are three key considerations

1) **Define who you intend to reach with your mobile application**

The more clarity you can create here the better. Who are your customers? What are their needs? What are their habits? How old are they? Where do they live? What problem will the mobile application solve for them? What value can you create today, and in the longer term?

Paint a detailed picture of each type of customer you wish to reach – this ensures you know who they are, and what they want.

Form a team who will lead the charge

Start by forming an internal 'task force'. These individuals should have the expertise, customer insights, organisational knowledge, and bandwidth to focus on uncovering stakeholder requirements.

Likely suspects:

❑ Programme manager

❑ Product owner, or the person in charge of the product/channel strategy

❑ Sales and marketing functions

❑ Customer experience experts

❑ Business analyst(s) - they will be your guiding light for documenting and updating processes

❑ Technology experts at various levels

Understanding continued

2) What are the business outcomes you wish to achieve?

What are the main services/products you intend to offer; and what do you require of your systems, staff, and customers so that these outcomes are realised?

3) What is the current business processes and what is needed to support the mobile application?

Knowing the current state of your business processes is the first step to redesigning and optimising them to support a mobile experience that can deliver maximum value. For example, there may be places where automation can be applied to an existing business process so that your customers gain an instant approval or result. These automations can shave days or even weeks off an existing process, while greatly enhancing customer engagement.

Ask questions to uncover requirements & underlying business processes, including:

❑ What is the purpose of the mobile application and who are the end users?

❑ How will the mobile application work? What's the general process flow of the mobile application?

❑ How does the mobile application process fit into the existing business processes? Do any touchpoints include manual processing? What will be the experience of other stakeholders (staff)?

❑ Can manual processes be automated to support the mobile application's process flow?

❑ Where will the data necessary to support this mobile application come from?

❑ What type of notifications or contextual actions must the mobile application be able to carry out?

❑ What level of security is required? Will there be sensitive data exchanged/stored that needs to be protected?

❑ What platforms will the mobile application need to run on? iOS or Android? Both? What about others?

❑ Will the mobile application need to be submitted to online application stores for download?

❑ Will the mobile application need to maintain full functionality if there's no internet access?

❑ How much load will the mobile application need to be able to handle?

❑ How will users be onboarded? ... Social registration? Self-registration? Will a password be required?

❑ What reporting and analytics are needed? Usage rate, behavioural data, device type, etc.?

solnet

Your success starts with the right data

Think early. Establish what data is needed to fuel a great experience, and great ROI

The right data provides the foundation on which to build a rich mobile experience. Without it, features and functionality can be superficial, leaving customers frustrated and unhappy.

The key is understanding, from the start, what data you need to consume and create to address stakeholder needs. What data must be surfaced to support a great experience while achieving your business objective(s)? What data might you need to collect to learn more about your customers?

Collecting user data, complemented by appropriate user analytics, also informs whether you're on the right track. Make sure you gather data that allows you to create personalised experiences for your users, as well as demonstrate wins, and justify ongoing improvement.

Do you know what your customers are doing?

Your mobile application is a key tool in the race to understand your customer. What do they like? When do they use the application? What motivates them to take action?

Initial development costs

Industry benchmarks, and our experience, place initial costs for high-quality enterprise mobile applications at a starting investment of $100,000. Sophisticated applications cost up to $1M+.

Understanding cost of ownership

An enterprise mobile application needs continuous care and investment.

Plan to support your mobile application's complete lifecycle by including maintenance costs in your budget. We advise at least 20% of initial development cost be invested in application maintenance and incremental enhancements each year.

So, if your organisation spends $100,000 on mobile application development, the annual cost of upkeep will be around $20,000+.

What sorts of things need ongoing attention?

- Maintaining, updating, and bug fixing the mobile application, and the underlying (e.g. back-end) systems/technologies
- Making regular functional updates and enhancements
- Adjusting brand visuals and content
- Security patches

Good interface design is only skin deep

A great UI is vital, but it cannot cover for poorly conceived business processes or improperly implemented technology

While interface design holds the power to make the UI attractive, many enterprise organisations are finding that slick design is only the tip of the iceberg.

Developing rich features makes it necessary to surface the right data, in the right format, at the right time. To get an experience working well, the mobile application (the 'front end') usually needs to integrate with the 'back end' so customers can engage with data, and/or functionality delivered from other systems.

Systems and data must work seamlessly behind the scenes, and it's easy to underestimate the level of back-end modernisation, enhancement, and integration, necessary. Maintaining security and privacy while updating existing technology and infrastructure, adds further complexity.
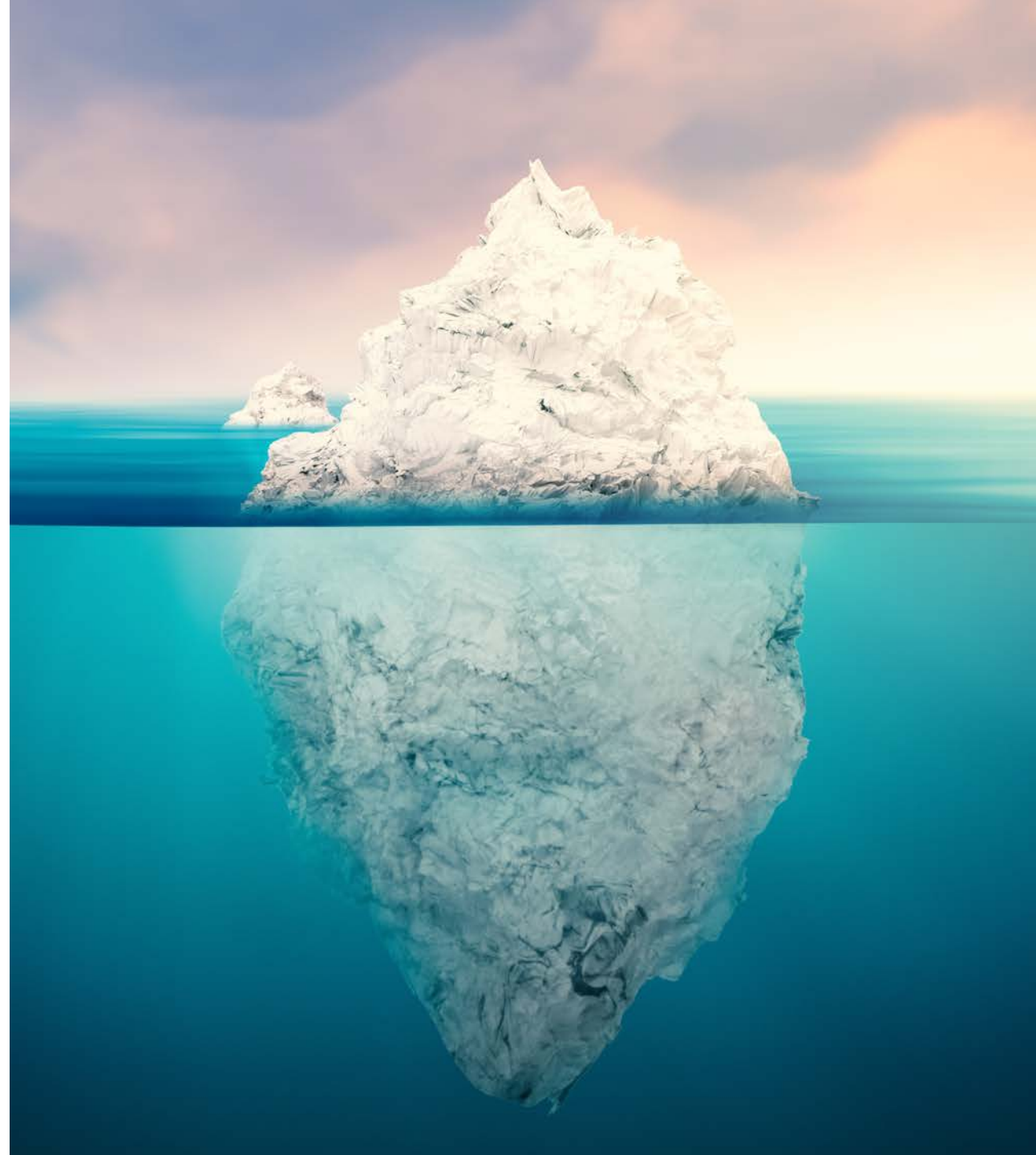
Plan to connect with essential systems & data

Integrations can stall mobile application development if you don't plan early

Data will usually need to be surfaced from various systems in the organisation, and this work requires serious planning. We've seen projects delayed by months, incurring additional costs (tens of thousands), due to integrations-related oversights.

The illustration to the right shows a situation that is all too common with mobile application delivery. To prevent unwanted surprises, before development begins, identify which systems must be integrated to support your mobile experience and business objectives.

A high-level plan will make it clear what needs to be done, and when. It will also help identify who is best suited to take on the work (specialists may be required to manage more complex situations).
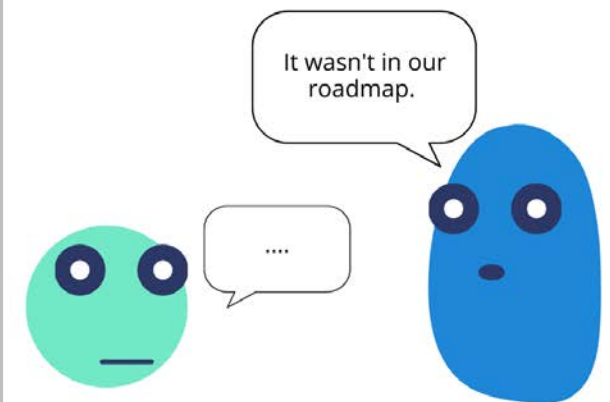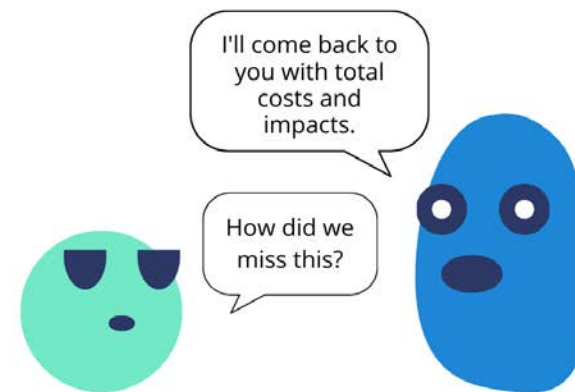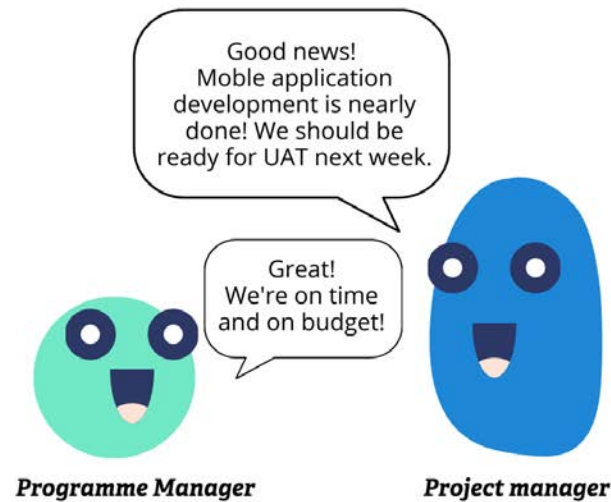
Questions to unearth integration needs

❑ What are the integration points needed to support the end-to-end processes for your mobile application?

❑ Is all the data that is required to address the needs of all stakeholders available?

❑ Is there any data that needs to be sourced from external parties?

❑ Are there any costs or restrictions on the external data?

❑ Is there existing documentation, and an understanding of what information is necessary to call external service?

❑ Can you support the required security protocols necessary to interact with internal and external systems to retrieve data?

❑ How will you protect sensitive data? Does the data need to be encrypted, e.g. in the case of passwords?

❑ Do you have all the data in an optimal format that can be readily consumed?

❑ Are your interfaces fast enough, and can they scale to support your mobile application?

solnet

In brands we trust; security is vital

Cybercriminals are aggressively targeting mobile applications

Security is more than a consideration; it is a key design, implementation, and maintenance consideration. It's a never-ending journey. The security journey for a mobile application includes:

• baking security into the design
• peer review and pre-release testing
• keeping developers up-to-date on secure coding practices
• keeping all technical components of the solution up to date, and
• testing security throughout a mobile application's lifecycle.

A security breach can be devastating for your brand and for your customers. With such high stakes, especially with respect to personally identifiable information, it takes expertise and a clear plan to protect data. Seek out security specialists early on.
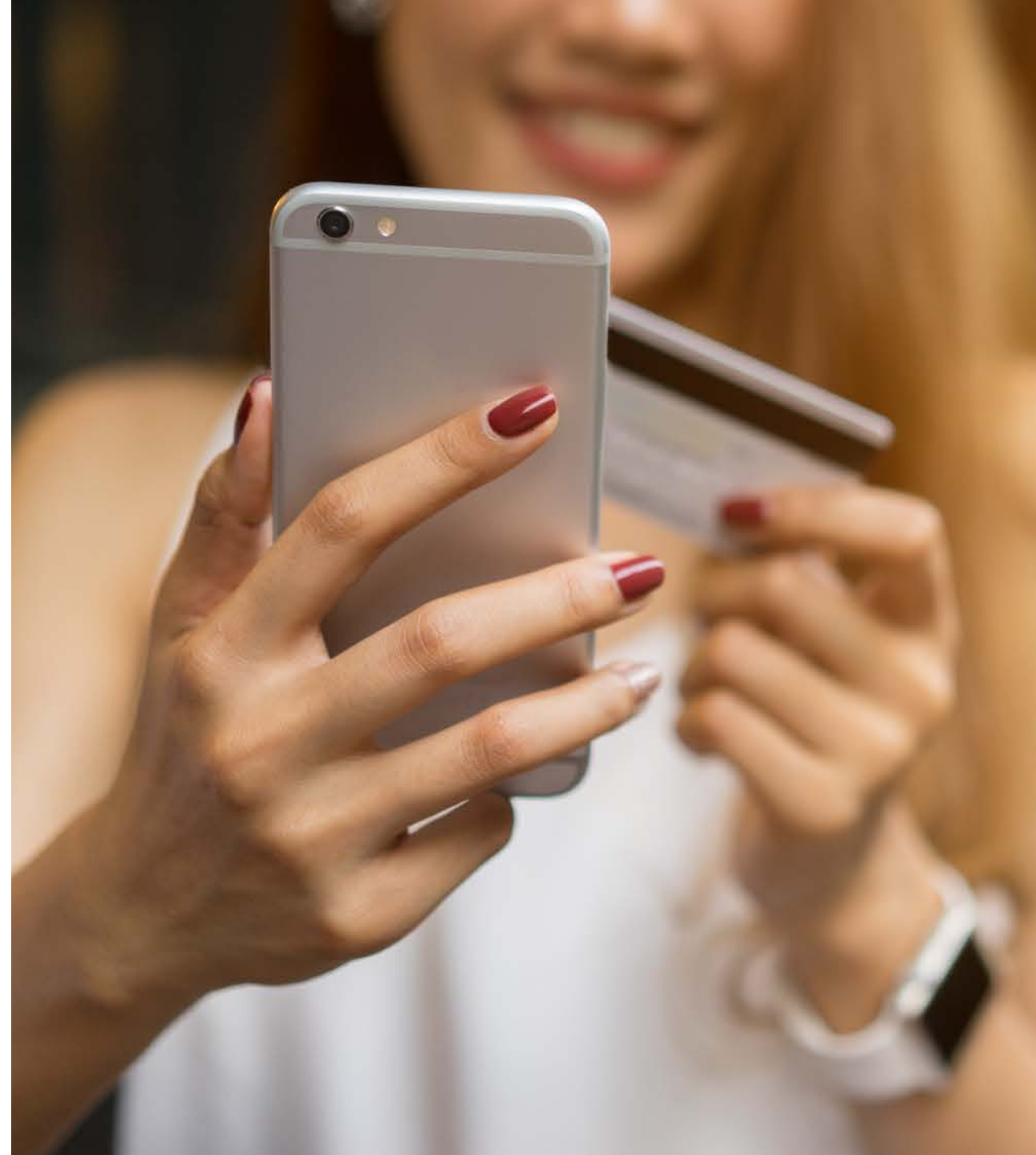
Quality Assurance (QA):

When you've invested hundreds of thousands into an enterprise mobile application, the right levels of QA testing are essential

Don't just test what's in the 'spec'.

While your mobile application may meet functional requirements, it may be perceived as poor in the eyes of a customer, simply because it doesn't work as they expect. Uncover problems with:

1) blind testing. This is a quick and easy way to test how intuitive the mobile application is. Ask a workmate, who has no idea how the mobile application is supposed to work, to try it and provide feedback.

2) pilot testing. Hit the real world at a small scale by inviting customers to trial the mobile application. This is a great way to understand how your target audience feels about the experience.

"People who have a negative brand experience on mobile are 62% less likely to purchase from that brand in the future".

(Know Your User – UX Statistics and Insights; www.toptal.com)

Customer success measures

- ✓ How many customers are actually using your mobile application?
- ✓ How many customers are no longer using your mobile application? How long did it take them to abandon its use?
- ✓ What are the ratings and reviews in the application stores?
- ✓ What in-application feedback are you getting?

Business success measures

- ✓ How many times has your mobile application been installed?
- ✓ How much do you need to spend to get a returning customer?
- ✓ What's the total revenue you've earned from a customer before they stop using your mobile application?

Application success measures

- ✓ How often does your mobile application close unexpectedly?
- ✓ How fast does your mobile application load and run?
- ✓ How long does it take your mobile application to request/receive data?

How will you know when you're winning?

Define success metrics; in our experience, the best measures combine several viewpoints

Use data to gain insights into customer success, business success, and application success.

1) Customer success. Are your customers getting what they want, when they want, and how they want? Are they happy to keep using the application and will they recommend it to others? Or do they dislike it?

2) Business success. What is the ROI? Is it worth investing more?

3) Application success. Is your mobile application functioning properly from a technical and business process standpoint?

To the left, are questions you can ask to establish key success metrics.

Time to market

It's not enough to have great ideas; speed matters

Your organisation needs to bring ideas to market fast. Why?

- First movers' advantage. Get there before your competitors to reap the rewards or realise internal value early.

- Demand for your product or service may be right now or in the near future. You may not be able to predict how demand will change in the future, but you can be ready to meet it.

Two key factors influence speed to market with mobile applications:

1) The development approach. Each approach carries its own unique pros and cons that impact delivery speed and total costs.

2) Ways of working (or delivery model). How people work together and apply knowledge can lend speed, or slow progress.

Choose your development architecture

The approach to development/deployment has lasting impacts on success

Evaluating business objectives with your team will help make it clear which development approach is right for you. Factors to consider include:

- development speed
- maintainability
- offline capabilities
- flexibility/extendibility;
- and security.

You'll need to choose your technical approach to building the mobile application:

- Native – usually iOS (Apple), or Android (most non-Apple devices including Samsung),
- Cross-Platform Native,
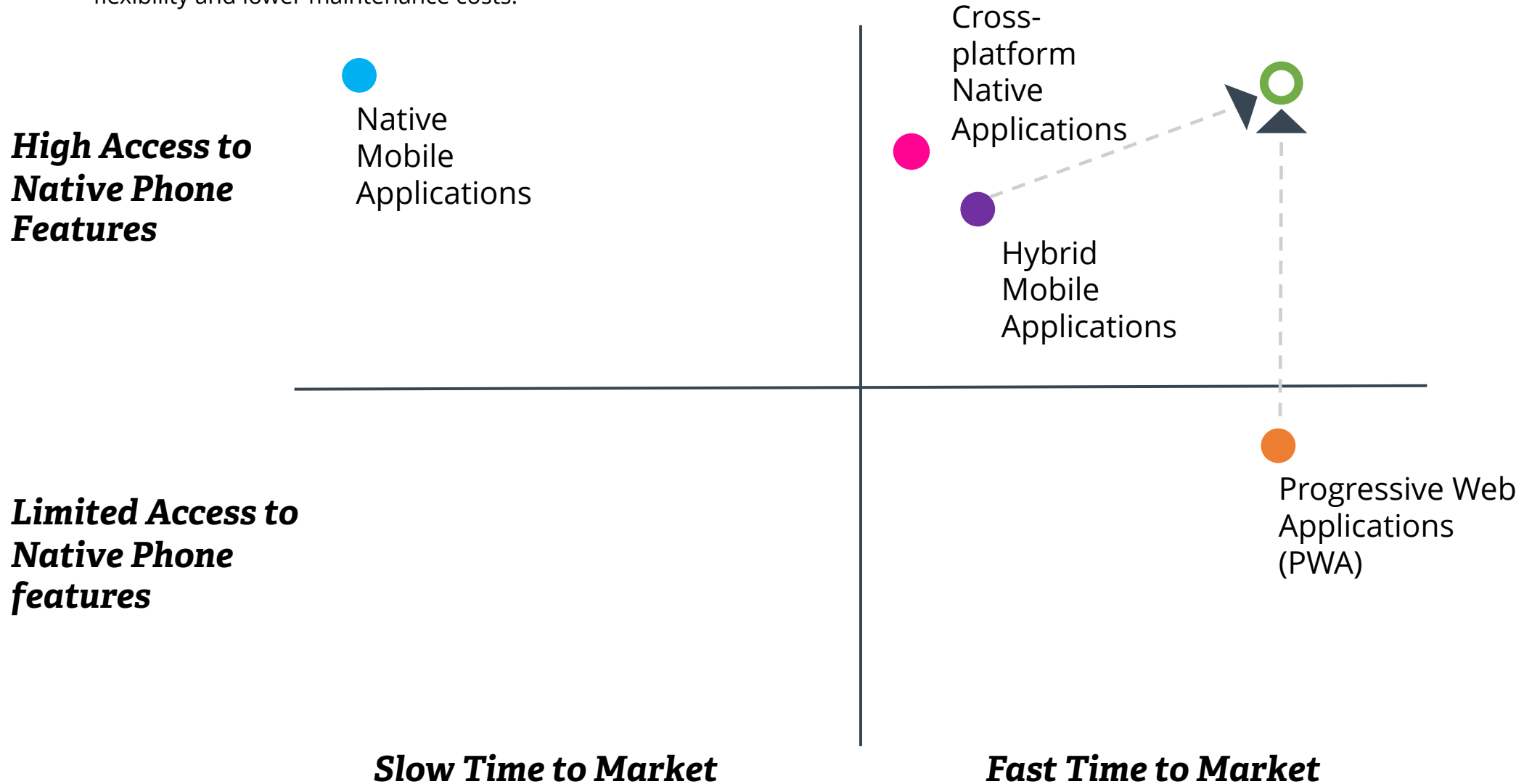- Hybrid; or
- Progressive Web App (PWA)

Pros and cons of each approach

Approaches	Native	Cross-Platform Native	Hybrid	PWA
Pros	• Access to all native device features allows for a rich customer experience with high-speed performance	• Single code base with some platform specific customisation • Can create a native-like experience e.g. use of native UI elements • Less specialised skills required than (pure) native	• Fast to deploy • Single code base • Access to all common native device features (via plug-ins and libraries) • Can leverage traditional web development capabilities allowing developers to easily transition into hybrid application development	• Fastest to deploy • Single code base • Can leverage existing front-end/traditional web developer capabilities • Can be embedded into existing native mobile applications
Cons	• Requires (different) specialised skills for each platform • Multiple code bases to maintain requiring more resources • Higher development costs and maintenance	• Dependent on libraries to access device features such as camera, bluetooth, location, microphone, etc.	• Dependent on plug-ins to access latest device features such as camera, bluetooth, location, microphone, etc. • May need to support multiple versions of some elements of the mobile application	• Limited access to native device features. For example, no push notifications in iOS (yet) • Capabilities dependent on the browser in use

Impacts of technology on speed & cost

Hybrid mobile applications, and PWAs, are highly sought after for their core business benefits; shortening time to market, and reduced upfront and ongoing costs. PWAs (the most modern approach) are rapidly evolving to gain the same level of functionality as Native, while offering flexibility and lower maintenance costs.

High Access to Native Phone Features

Limited Access to Native Phone features

Native Mobile Applications

Cross-platform Native Applications

Hybrid Mobile Applications

Progressive Web Applications (PWA)

Slow Time to Market

Fast Time to Market

Ways of working (delivery models)

DIY

Why this might be chosen:

Lower cost per person per hour of effort; building internal capability.

Considerations:

- It takes time and effort to build and maintain an internal capability
- Skill gaps and competing priorities can slow progress
- There may not be enough bandwith on hand to fulfill project needs and/or ongoing support and maintenance demands, while also delivering business as usual
- It is difficult to scale up (and down) quickly

Digital agency

Why this might be chosen:

Beautiful front-end design with UI-focused approach.

Considerations:

- The UI is only a part of the solution. Serious integration work and appreciation for supporting business processes may be overlooked
- Agency staff may lack business analysis skill
- Scope of process mapping may be limited
- Necessary data may remain trapped in systems, blocking features

Digital delivery partner

Why this might be chosen:

A broadly-skilled delivery partner can mitigate risks, accelerate outcomes and provide end-to-end services.

Considerations:

- It looks expensive on a dollar-per-hour basis
- A specialist provider should demonstrate the right skills and culture to accelerate delivery and provide ongoing support services
- A delivery partner should have the capacity to share knowledge, coach, and upskill internal team members, while spotting risks and helping to mitigate them

Develop your mobile application at speed with a trusted digital partner

Together, we've got this! Solnet can:

quickly uncover end-to-end business processes and redesign them to support a new digital experience

establish the right success metrics and acquire the right data to help you evaluate, learn, and improve

help you scale and deliver quickly while avoiding pitfalls and mitigating risk

augment teams with complimentary skills; Solnet can help you get things done, with immedaite results, while coaching individuals and teams

create a delightful and successful customer experience
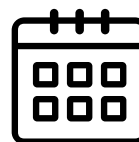
solnet

What's it like to work with us?

You lead the way

We're here to put our experience and know-how to work for you, and provide guidance as needed. We are focused on collaboration and shared success.

We help you accelerate your business response

Aotearoa is our home, and we've been supporting enterprise organisations for more than 15 years. We deliver advice, and solutions that work locally.

We care

We team with you to achieve mutual success in a digital world.

Meet some of our team!

John Hartmann
Hybrid Development Expert

John is a hybrid mobile application champion for Solnet. He loves working with clients to help them implement successful and robust mobile solutions.

John has over 30 years' experience in software delivery, and he embraces new technologies and is always expanding his knowledge base.

He is passionate about software quality and enjoys sharing his experience with other team members to improve project outcomes.

Sufiyaan Mitha
Digital Product Owner

Sufiyaan has a passion for bridging the gap between business and technology. He understands how to implement and deliver a full end-to-end solution.

Having worked for various clients in different roles across many industries, Sufiyaan has strong technical capabilities as a full stack developer.

Problem solving spins his wheels. Sufiyaan can visualise complex processes and break them down into 'easy to understand' pieces.

Ken Wong
PWA Expert

Ken is a technical lead and solution architect who specialises in web and mobile front-end deliverables. He loves the portability of PWA.

Ken has over 20 years' IT experience and has led many teams to success using Agile practices.

He has worked with clients from various industries and is proficient in all aspects of the delivery lifecycle, from system architecture and design, through to implementation, integration, enhancements and support.

Jeán Van Wyk
React Native Expert

Jeán has the eye of a UI designer and is also a mobile application developer. He lives to build native mobile applications using React Native.

He has been designing and developing software over 24 years', principally using Java and JavaScript, but also other languages.

He is experienced with mobile (hybrid) development, front-end development, integration, API development, and back-end database design and development.

Please contact us

If you would like to talk about mobile application delivery and how we can help you achieve success, contact:

Jane Hwang

Email: jane.hwang@solnet.co.nz
Mobile: 021 435 374

www.solnet.co.nz