

Deploying wearables

Making today's innovations part of tomorrow's daily use



DigiSEq
SECURE DIGITAL TECHNOLOGIES

Deploying wearables

Wearables with Secure Elements

Wearable technology is an area of rapid growth. It encompasses a wide range of devices from disposable items for festivals to high value fashion accessories. Devices to monitor physical activity have been leading the market to date. Wearables are increasingly being used for a wide range of applications including access control, ticketing, transit, loyalty, fitness monitoring and identification.



Imagine, for example, you wanted to attend a crowded event.

Being able to leave valuables, such as payments cards, at home and use a wearable to pay for transport, to gain access to the event and to pay for refreshments, would be both convenient and low risk. Not only are wearables less likely to be lost or stolen than a wallet, by loading them with the money and tickets needed for the specific event, the risk and inconvenience of loss is much reduced. Wearables also lower the risks associated with using mobile phones in crowded environments, where they may be a target of theft. In such environments, it may be preferable to keep a mobile phone securely in a zipped pocket using the wearable for purchases, tickets and so on. Aside from the security benefit of wearables, event organisers are interested in the potential to collect data, monitor usage and promote value added services.

DigiSEq

Imagine you wanted to go for a run, a swim or a cycle ride. Being able to wear your 'money' in the same device being used to monitor your health would be far more convenient.

Enabling wearables to be used for payments is a particular challenge. The payments market is a complex ecosystem, which it is difficult to enter. Provisioning payments products is often costly, time-consuming and requires specialist expertise and knowledge. For example, the payments industry has exacting security requirements. Typically this will involve embedding a "secure element" (a smart card device) into the wearable into which sensitive payment data and payment logic is provisioned. This provisioning process is complex and specialised and may require commercial relationships with particular industry players. Furthermore, to meet card scheme and regulatory requirements it will be necessary to involve a licensed financial institution.

Introducing DigiSEq

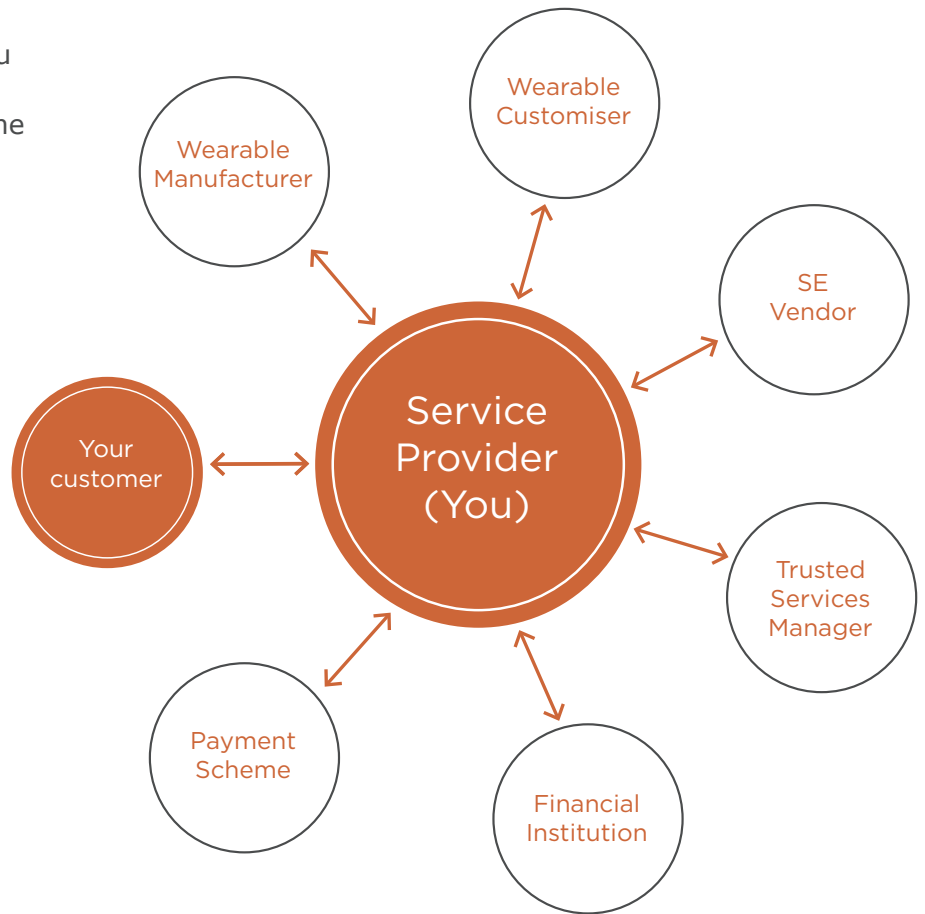
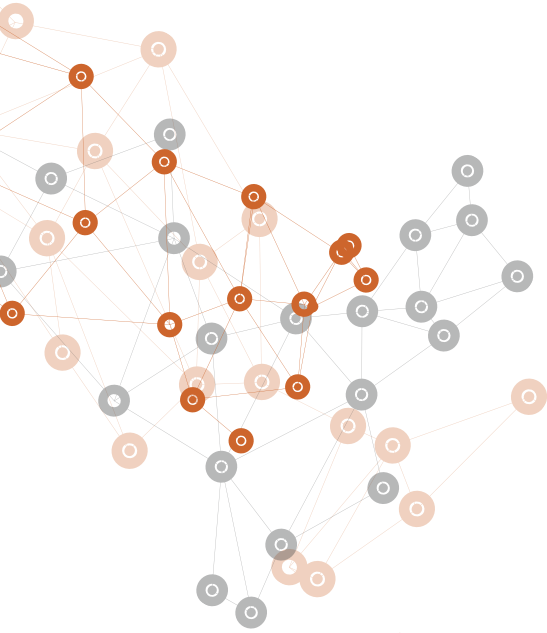
DigiSEq has been formed by a group of seasoned payments professionals to address this complexity. They provide technology and services that will enable organisations with no background in payments or smart card provisioning to leverage wearable technology quickly and at low cost. DigiSEq's services can be applied to any application that could be provisioned to the secure element in a wearable including payment, identity, access control and ticketing. DigiSEq's services have also been designed from the ground up to be both flexible and scalable, supporting multiple wearable deployment approaches.

This paper outlines the steps involved in deploying a wearable for payment and then shows how the DigiSEq service removes the complexity of deployment allowing all types of wearable to be provisioned with a high degree of flexibility, in all environments, for both large and small-scale rollouts and at very low cost.

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Deploying wearable technology for payments today

Currently to deploy wearable technology for payments today you will need to work with numerous organisations as well as manage the end-to-end process.



For example, you may need to:

- Determine which payment scheme to support. Aside from determining which best suits your needs, the schemes impose a strict set of rules including accreditation of all products used across their networks.
- Register with a financial institution recognised by the chosen payment scheme, who will sponsor the product including access to a BIN, the index for card payment numbers.
- Select a scheme approved payments application and secure element to provision it to. This potentially could be sourced from the secure element vendor or from a payment technology provider, depending on the restrictions of the secure element vendor and / or Trusted Services Manager.
- Select a Trusted Services Manager (or bureau). The selection depends on who is actually going to provide the payment application and generate the personalisation data (which could be the financial institution or their supplier).
- Liaise with the wearable manufacturer and wearable customiser (who will physically embed the secure element into the wearable) to determine the end-to-end provisioning and fulfilment process.
- Determine how the registration and enrolment of end-users will be performed, in particular working with the financial institution to ensure "Know Your Customer" (KYC) requirements are met.

The above steps are only illustrative. There are many options and variations, for example depending on whether devices are to be provisioned in bulk or remotely. The current processes for deploying wearables build on the processes established to deployed payment cards. These are typically bulk processes which are tailored to the specific needs of the payment card issuer, where the upfront cost and complexity is absorbed by the scale of deployment. If a bank for example has a million customers then it will spend significant time and effort to set up the deployment process to meet its specific needs.

The way forward with DigiSEq

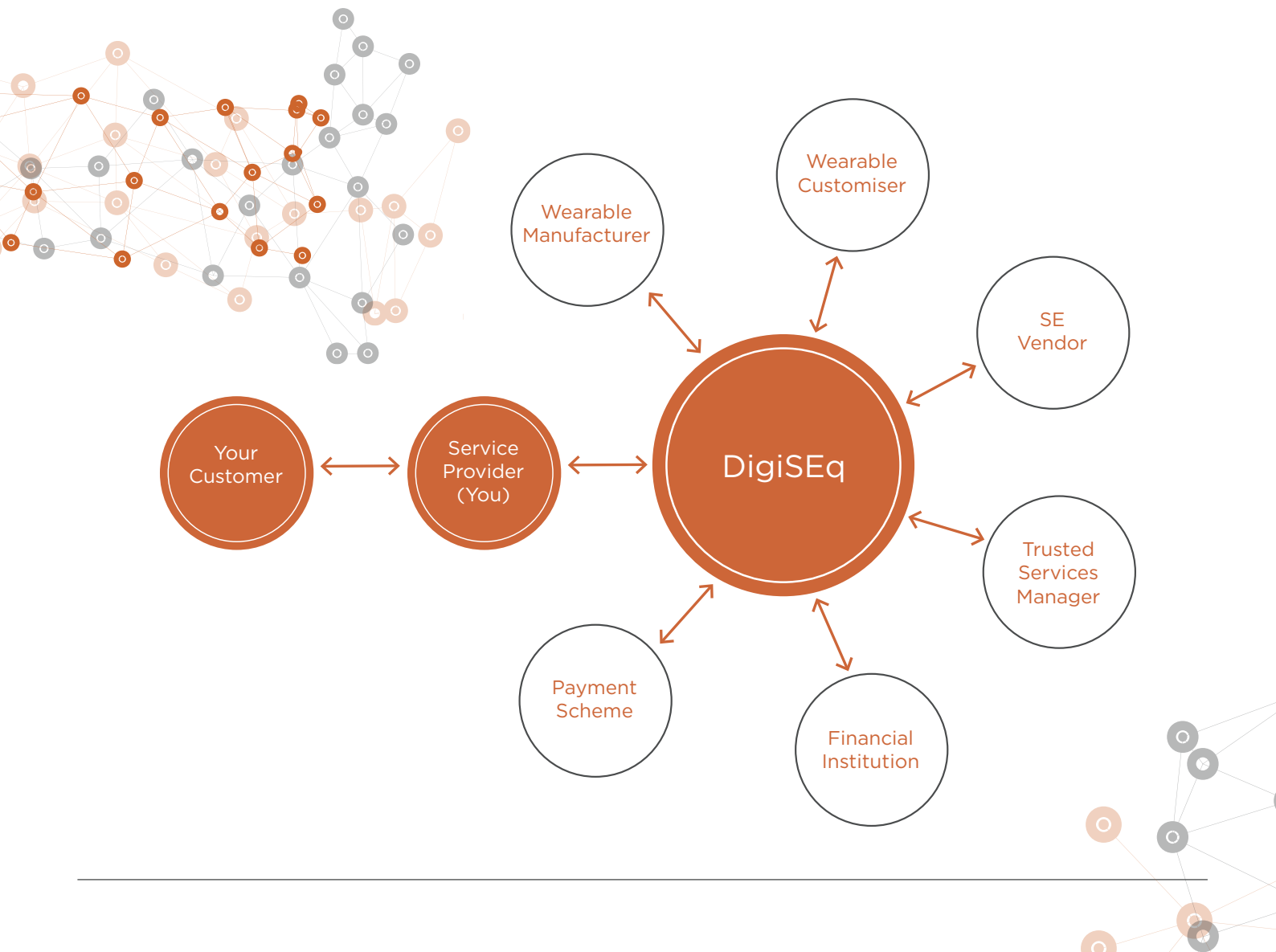
For wearables to achieve their potential there is a real need for a far more flexible approach to provisioning than is currently possible. For disposable wearables, provisioning should be low cost reflecting the nature of such products. For high end wearables, which will be kept for a much longer period of time it should be possible to provision (and delete) applications dynamically over the internet, to provide complete flexibility. This is very similar to the provisioning that is needed for mobile phones.

Dynamic, flexible and remote provisioning is possible – the technology to do this has already been developed for provisioning of secure payment applications to mobile devices. This technology is mature, secure and recognised by the payments industry. DigiSEq have extended this approach for the wearables market in a way that removes the complexity and cost from the provisioning process.

In particular:

- DigiSEq has many years experience working at the heart of the payments industry and can easily navigate around the various players;
- DigiSEq brings relationships with key partners in the payments industry which can be used to accelerate the needs of a particular project. Equally DigiSEq can work with other partners as necessary to deliver the required provisioning services.
- DigiSEq is payments network certified.

DigiSEq provides a one-stop-shop for wearable providers removing the need to approach and negotiate with the multiple parties needed to make payments possible.



Your deployment choices

DigiSEq will guide you through the choices that you need to make when embarking on a wearables campaign. **These fall into four areas:**

- **Type of wearable**, including considering the purpose, cost, longevity.
- **Type of payment**, including wearable-specific accounts as well as the ability to link to the user's regular bank account or payment card.
- **Non-payment applications**, for example if the wearable is also to be used for access control, loyalty, tickets etc.
- **Method for deployment**, considering whether the wearables should be personalised centrally in bulk or individually at a remote personalisation location or indeed via the end-user's personal device.

Choose the type of wearable

Wearable technology can be included within high cost fashion accessories or in low cost disposable wristbands, or anything in between. Generally, the higher cost devices could include increased customisation, post-issuance maintenance, longevity etc.

Type	Typical usage	Customisation	Cost	Typical fulfilment
Festival/event	Access, payments – disposable on end of life	Low or none. Limited data personalised on fulfilment as required e.g. prepaid card amount.	Low	On purchase. Card associated with customer through online registration.
Lifestyle	Health monitor, payments – kept on	Some additional data may be personalised customising Apps to customer.	Medium	On purchase. Card linked to customer on purchase.
Fashion	Accessory, payments	High potential for customisation. All data required to maximise service offering from Apps to customer.	High	In a store using retailer procedure and personalising to customer to extent required.

Additionally, supporting services can be offered in the form of mobile applications which interface with the wearable via the NFC, BLE or USB interfaces from phones or tablets. Services can include a range of features such as wearable status (e.g. prepaid balance), maintenance (e.g. prepaid top-up) and management (e.g. App provisioning/personalisation). Applications can be made available through online services for wearable retailers (to support order fulfilment) and to customers, as required.



Payment application options

The various payment options available to you may seem confusing. There are many choices and the payments industry is changing so the options will change over time. DigiSEq can advise on the best option according to the required customer usage.

DigiSEq has partnerships with key organisations to provide "off-the-shelf" services to those organisations who wish to simply use a "white-labelled" service. If, on the other hand, you already have a sponsoring financial institution or a relationship with other parties involved, DigiSEq will work with them to meet your specific needs.

The focus of this document is on the deployment of wearables that will work with the open payments schemes such as the international card payment schemes. These will provide the widest acceptance of wearable payments, which can use precisely the same technology and payment standards as contactless payment cards. DigiSEq can equally support the provisioning of proprietary payment applications for closed schemes.

The type of payment account that is most appropriate to deploy to the wearable will depend on the acceptance environment and can include:

- Existing accounts represented as a "token" in the wearable.
- Proxy accounts which are funded directly from standard card accounts or bank accounts.
- Standard prepaid accounts.
- Prepaid account with balance held in Issuer, which is suited to online usage.

A unique benefit of the DigiSEq service is the ability to mix and match applications, payment and non-payment, from different sources. This is possible due to DigiSEq acting as a single point of control, leveraging direct relationships they have with the providers of different application types.

Non-payment application options

Provisioning non-payment applications follows the same technical process as payment applications, although some processes may vary (e.g. certification may not be required). DigiSEq offers services for provisioning non-payment applications and can guide you accordingly.

Any suitable application from any service supplier can be accommodated. A key feature is the high degree of traceability and security, which is especially important for certain applications such as health information and identification. It is important that any data can be trusted which means that secure services, such as those provided by DigiSEq, are required.

Where DigiSEq provisioned wearables can be used

Events

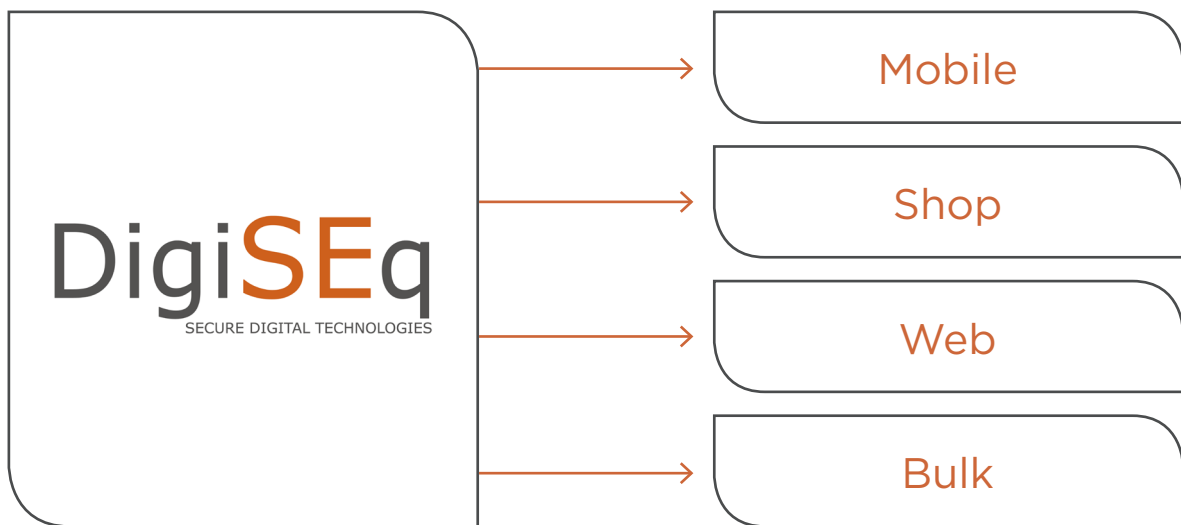
- One-off festivals or use across multiple events
- Access control, payment
- Remote loading
- Mailed to ticket holder or collected at venue entrance
- Low and Medium cost devices

Lifestyle

- Owned device
- Leave valuables at home when going to Gym
- Purchased from retailer
- Higher cost devices



Method of deployment



The DigiSEq service is completely flexible. It has been designed to operate at any scale, being able to support provisioning in the following types of environment:

- **Mobile:** The wearable is personalised via the consumers own mobile phone.
- **Shop:** The wearable will be purchased as a packaged good. It can be personalised wirelessly (via NFC) at the point of sale without needing to remove the product from its package.
- **Web:** The wearable will be purchased as a packaged good but from an online store. It can be personalised wirelessly (via NFC) in the fulfilment centre of the online store.
- **Bulk personalisation:** This will typically be performed during manufacture.

The potential of wearables

DigiSEq has designed its service specifically to address the emerging needs of wearable technology. This makes them unique in the market place and positions them to be able to help you deploy wearables with greater ease, lower cost and more quickly.

Wearable technology devices allow you to engage with consumers in new ways, to provide convenient, attractive and secure means to deliver services including payments, ticketing, access control etc in physical environments where carrying cards, cash or phones is not optimal.

DigiSEq are dedicated to making the provisioning of wearables as simple as possible, building on their considerable in-house expertise in the design of card and mobile payments provisioning platforms.



About DigiSEq

‘The Payments Device Enabler’

DigiSEq Ltd is a UK based innovative FinTech company created in 2014 to provide Financial Services and Wearable companies with a solution that allows any Programme Owner or Manager, Issuer or NFC wearable manufacturer to enable payments on their products. DigiSEq’s founders recognised the market need for a solution that is both efficient and secure and designed to provide cost effective provisioning on any scale.

DigiSEq offers provisioning to any RFID device and as such enable a wide range of contactless products which are innovative, useful and convenient. In addition, the combination of the technology and secure processes used by DigiSEq Ltd enables the delivery of accessible wearables for a spectrum of wider uses. In addition to payments, DigiSEq can support the delivery of multiple applications such as Access control or Transit and all at a fraction of the cost of existing solutions. The company’s mission is to make today’s innovations part of tomorrow’s daily use.



Web: www.digiseq.com
Email: info@digiseq.com
Phone: +44 (0) 1895 637732

About Consult Hyperion

“Thought leaders in digital money and digital identity”

This paper was written by Consult Hyperion on behalf of DigiSEq

Consult Hyperion is an independent strategic and technical consultancy, based in the UK and US, specialising in secure electronic transactions. We help organisations around the world exploit new technology for secure electronic payments and identity transaction services from mobile payments and “chip and PIN” to contactless ticketing and smart identity cards. Our aim is to assist customers in reaching their goals in a timely and cost-effective way.

We support the deployment of practical solutions using the most appropriate technologies and have globally recognised expertise at every step in the electronic transaction value chain, from authentication, access and networks, to transactional systems and applications.



Web: www.chyp.com
Email: sales@chyp.com
Phone: +44 (0) 1483 301793

