



Climbing the Value Ladder

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Part I: Hardware Vendors in Workforce Management



The Challenges

As an independent hardware vendor (IHV) within the workforce management space, there are many challenges to remaining profitable and growing revenues. The workforce management market is fragmented, niche and diverse. There are many players and yet the market has not seen significant growth.

The need to work with software vendors and for them to invest in ensuring compatibility with your product creates additional barriers to market and brakes on growth. In addition, the emergence of players within the low cost economies leads to the erosion of price and pressure on profits.



Fig 1: IHV's dependant on ISV integration

Ultimately, price “*warfare*” will diminish all players and result in many leaving the market or going out of business completely. Traditionally vendors have used quality as a way of defending price; however, as players improve quality and reduce price points further, the argument loses weight. In effect, the data collection devices become a commodity to a point where spare units become a viable and affordable way to mitigate shortfalls on quality.

Indeed the quality and resilience of devices today has ensured longevity that is actually working against vendors in terms of end user refresh/renewal rates for hardware, which remain extremely low. This has stifled revenue and inevitably stunted research and development.

Many Data Collection Devices have not been re-architected for the modern Ethernet/IP age and instead had “*bolt on*” network cards replacing the RS232 PC connectivity. Despite improvements many remain within this mindset of being the passive SLAVE (or in the context of computing paradigm “A Server”) which cannot operate reliably with DHCP and therefore require a fixed IP address. They have yet to catch up with current IT enterprise paradigms and open standard protocols and the result is increased TCO and a barrier to SaaS/Hosted models.

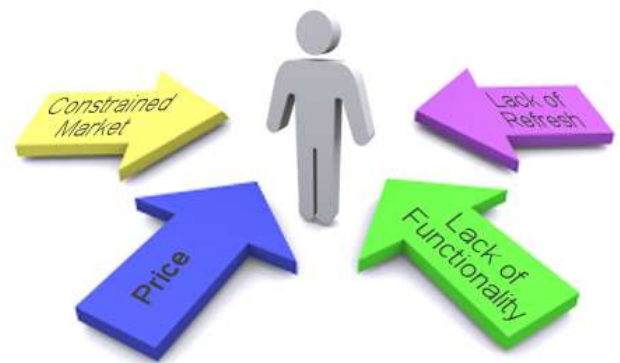


Fig 2: Pressures limiting growth

Technology Refresh

In a market without high growth, device refresh can be a lifeline to ensure continued investment in R&D. The dream of course, would be to have

a refresh rate in the realms to which Mobile and PC manufacturers realise. These vendors have achieved high refresh rates by innovating on top of agreed platform standards.

Innovation is the key to achieving differentiation and refresh sales and the barrier to this within workforce management is the lack of standards based integration.

This is why many devices are still primarily used only to clock in and out. Naturally, there are limits on how you can innovate around this simple task and certainly no reason for users to refresh.

Again, if the functional point remains simply clocking in/out then size of memory and the speed of the processor within the device become irrelevant and *price point will become the sole differentiator*.

The dilemma then is how to climb the value ladder and develop innovative hardware that will differentiate in the market, secure margins and create value that accelerates adoption and refresh.

Hardware vendors have tried to create value for ISV's through the inclusion of bespoke programming environments/languages, SDK's and tools etc, but this passive approach to creating end user value has failed because of the reluctance of software vendors to work with proprietary environments and utilise this functionality.

ISV Perspectives

To understand the reluctance of software vendors you need to change perspectives to that of the ISV. Within the workforce management space, different verticals and even geographies require data collection solutions that provide different:

Types: Biometric (Hand/finger/eye readers), Badges (HID/Barcode/Magstripe)

Attributes: Waterproof; humidity/temperature thresholds (for different environments)

Connectivity: LAN/WAN/WIFI/GPRS

Price Sensitive Variants: (for different geographies)

No single IHV can provide all permutations and address all needs required so an ISV must collaborate and integrate with a number of different IHV's.

Integration is always an issue and if done properly is never trivial. Testing is required not just of the device, but the interface and end-2-end solution. Often this can take weeks. Add to this that every IHV has its own API, function calls, SDK and sometimes, proprietary language and it is generally an uphill knowledge acquisition task.

This is despite the fact that often the data integration elements (most frequently clockings) are the same! No wonder ISVs only choose to work with a few IHVs and operate a "light touch" integration policy (often just clocking).

Of course, you could add a myriad of functionality and data flows that customers often desire - but to repeat this integration across all devices would be prohibitively expensive.

Therefore, an ISV either selects a single IHV to work with (and lock out the rest) and/or operates a "light touch" integration policy across the board.

A Unified Solution

The problems identified can only be resolved through implementing a unified solution involving both the ISV and the end user. Both stakeholders need to be part of the solution for it to yield positive and significant results.

The first is to deliver real and tangible benefits to the end user by providing additional "out of the box" functionality. End users want to drive much more functionality down to the devices, from absence booking/requests to the ability for

employees to view their holiday balances, rosters, clockings, premium hours etc.

The second is to ensure that ISVs integrate with this functionality. It is this **second** objective that many IHVs fail to achieve without help and will continue to do so in the absence of standards.

On its own, the creation of a single data standard does not make integration any easier, although the right architecture

and use of industry standard protocols does achieve this.

However, the proposition that an ISV only needs to do this ONCE and having achieved that level of integration can then work with any future hardware from the same or other compliant vendor does make a compelling business case.

As more vendors adopt the standards, the more compelling the savings become.

From an IHV perspective, the APIs can be a constant battle in terms of supporting many different platforms. Whilst the APIs "help" ISVs to integrate better by trying to abstract away the communications, often they can cause interop issues with different programming environments (Java/.Net), architectures (64 vs 32) and even operating system versions. The result can be at best restricting operating environments and at worst causing system failures through memory leaks/handle limits etc

Open Standards

The standards create a viable environment and opportunity for an IHV to innovate and differentiate. The devices then start to add value to the end user by delivering or capturing additional information and processes.

Whilst the standards define 'WHAT' information passes between hardware and software, it is down to an IHV to implement 'HOW' it is displayed, captured and managed within the hardware.

For example, whether the device implements all functionality or some, displays it graphically or via text, whether a month's view or a day's view, in colour or in monotone etc.

All of these differentiate the product, require different processing and memory capabilities, allow for different price points and act against price erosion.

The design and architecture of Workforce-XML provides further incentives by leveraging industry standard protocols (HTTP and SOAP) and XML payloads. This simplifies the programming using existing development environments and avoids the need to work with third party (IHV) APIs/DLLs. This reduces the development/support costs whilst reducing ongoing TCO. In addition the architecture of the solution (with the device rightly acting as client) becomes compliant with enterprise IT paradigms, permits the use of DHCP and makes solution delivery via SaaS or Hosting a viable solution.



Fig 4: Value Chain

The same device might implement (or be licensed for) clockings and be priced lower than one licensed to accept holiday/absence bookings, overtime/clocking/roster views etc. This provides a very real ROI and opportunity to monetise investments within workforce-xml. Even without additional monetisation, it should be apparent that the new multi-functional devices would provide a compelling reason for end users to refresh their hardware.



Fig 3: Standards aid growth

Monetisation

Since functionality is no longer just an attribute of the hardware but also of the software running inside the device, there is further opportunity to have different price points for the same device but running different functionality.

It is also clear that as standards develop more functionality can be delivered/updated/licensed to the devices and indeed drive further hardware refreshes as has occurred within the PC market for many years.

This is an exciting vision where all stakeholders (ISVs, IHVs and end users) benefit from increased value of the overall solution.

Of course, this is not a new idea, and many other markets have used standards to drive innovation, revenue and margin for many years. However, within workforce management, it is only just being realised through workforce-xml and does require a "step change" in approach and mindset from hardware (and software) vendors.

Culture Change

Traditionally hardware vendors have stayed away from end user functionality; preferring to do the minimum software required for ISVs to build on.

This has grown in an attempt to overcome the reluctance of ISVs to integrate at all or in depth. However, the effort has remained focused on tools, documentation, SDKs etc rather than delivering end user functionality.

This approach is understandable given that without standards it would be difficult to define the functionality in a way that would be applicable to their partner community.

However, the realisation of the vision will bring IHVs fully into the software mould. It means not just implementing the standards, but also developing the functionality that surfaces from those standards and which provides the unique differentiation and value add to the end user.

This will involve the IHV acquiring domain expertise and developing their own IP as well as adopting traditional software methodologies.

The step change will not necessarily be an easy one as a transition to applications is not without its challenges but will yield results if completed in tandem with standards and ISV partners.

The Road Ahead

The future of these devices will be standards based client devices based on Linux or Windows platforms, leveraging Java or .Net environments to create value add applications that use industry standard integration and integration technologies (HTTP/HTTPS/SOAP/XML/Web Services), which seamlessly work with pure play ISVs within the market.

In conclusion, a stark choice confronts hardware vendors; continue to face pressure on margins or innovate out of the price war through standards and end user device applications that deliver the integration value chain.

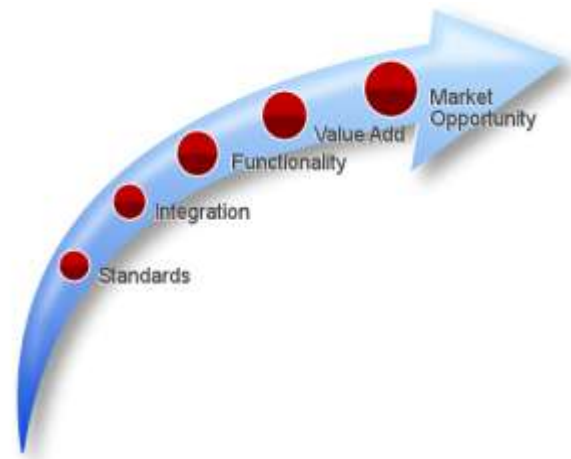


Fig 5: Standards leads to increased marketing opportunity

About the Author

Nick Whiteley has 12 years experience in Workforce Management Solutions and is currently Executive Chairman of Workforce-XML and Chief Technical Officer of a leading supplier of workforce management solutions.

About Workforce-XML

Workforce-XML represents a consortium of organisations looking to create open industry standards between data collection devices and workforce management software, with the aim of increasing choice for end-users whilst at the same time reducing total costs of ownership. For more information visit www.workforce-xml.org