
CALCULATING THE ROI OF CLOUD COMMUNICATIONS

A short guide to
understanding the
benefits of Cloud APIs



Cloud communications platforms have fundamentally altered the landscape of the voice and messaging market. For application developers, a new generation of development platforms, coupled with a host of new deployment options, have led to wider choice and lower costs.

Developers who were once tied to vendor-specific APIs and hardware now have greater freedom to deploy across a range of different providers. Development times have been cut from months to days, and hardware investment costs have been eliminated.

The cloud platform, defined by low setup costs, pay-per-use models, and on-demand scalability, promises a host of benefits to developers. Conversely, for existing developers working on hardware-based deployments, risk remains.

This paper examines some of the key benefits of moving application development into the cloud and discusses how field-proven technology can help to mitigate some of the risks of that transition.

The price of elasticity

Instant scalability and the importance of capacity on demand

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Instead of purchasing a fixed resource and paying to ensure that capacity is always available just in case demand peaks, the cloud developer simply pays for the capacity required at any particular point in time.

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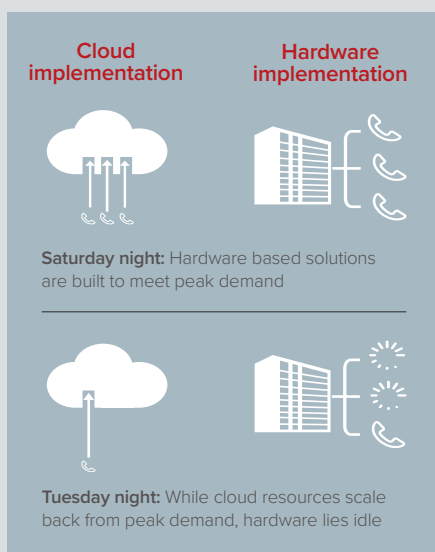


Figure 1: Demand variations in a typical televoting application

Flexing to meet demand

Perhaps the most obvious benefit of true cloud communications platforms is the instant scalability they provide. Furthermore, the scalability offered by the cloud is elastic in nature. So, as demand for a service increases, capacity can be added instantly but, when demand for a service falls, capacity can also be reduced – instantly and without any lost capital from redundant hardware, software licensing, and so on. It’s this constant flexing to meet current demand that defines the cloud solution.

Coping with low demand

However, with a hardware-based solution, that peak capacity, and all the processing resources it requires, is likely to sit idle for the remainder of the week – an underused investment. The fixed nature of hardware solutions means that the solution provider essentially pays up-front for capacity that might only be used every now and again – which equates to a huge hardware and processing overhead. Cloud communications solutions are, in contrast, inherently elastic.

Coping with peak demand

Hardware-based solutions require the provider to develop for a peak demand scenario – that is, to build maximum capacity into their deployment, even if that maximum capacity is rarely, or never, reached. For example, a vendor providing televoting solutions must ensure that their applications can cope with peak demand on Saturday evening - see Figure 1.

OPEX demand-based solutions

Instead of purchasing a fixed resource and paying to ensure that capacity is always available just in case demand peaks, the cloud developer simply pays for the capacity required at any particular point in time. If that demand grows then the capacity can scale instantly by simply adding more resources. Crucially (and this is where ‘elasticity’ comes in), if that demand falls, then capacity falls too. It’s a simple pay-as-you-go OPEX approach, which means that the developer/ solution provider need only ever pay for the capacity and resources that are actually consumed.

Agile development

Reducing risk, development expense and time to market

An environment to encourage creativity

Cloud communications platforms minimise the investment required to build out new applications. Instead of staking a huge hardware and development overhead on a new idea, application developers can develop and test concepts free of charge without making large investments in hardware or development resources. It's a low cost, low risk environment that encourages agility and creativity.

Cloud communications platforms typically allow developers to 'develop for free'. There's no development hardware and no tool kit to buy, just a simple API and a library of example code to minimise development time. Moreover, once a new application is built, cloud deployment means that developers can test out new products and services instantly and with minimal investment. If an application succeeds and gains traction with users then resources and capacity can simply be added on a pay-as-you-go basis.

A lighter application development environment

In addition, cloud-based platforms typically offer a much lighter, more use friendly, programming environment than traditional hardware alternatives. Cloud APIs are extensively supported with FAQs, toolkits and code snippets, and should be familiar to any developer with experience of XML and RESTful APIs.

This means that the skills required to develop an application are much less specialised and that development time is significantly reduced to just a few days for a simple voice and messaging application. It's this agility to innovate on the fly that further defines cloud communications platforms and unlocks significant ROI potential.

Project tasks	Cloud Development	Hardware Development ¹
Telephony application development	n	n ³
User access & interfaces etc.	-	a
Diagnostics, logging & reporting	-	b
Resource management	-	c
Storage & file caching	-	d
Business logic development	x	x
Server platform productisation	-	z
Total development time	n+x	n³+x+z+(a+b+c+d)

Project tasks: Cloud development vs. traditional hardware development

1 - Two orders of magnitude greater than if using high-level languages (10dys ~> 10 wks ~> 10months)

Return on Investment Calculator

Calculating and comparing the costs of cloud vs. traditional development

The component elements

Dev\$ = Development costs

Prodn\$ = Production costs

MI = Margin Index

Unit\$ = Unit selling price

ROI Units = Unit sale volume required to recoup initial investment

Units/yr = Forecast unit sales per year

ROI period = Time taken to sell ROI units and recoup investment

The ROI Theory

This formula may not be an industry accepted standard, but it's tried and tested and reflects our extensive experience of working with board developers.

$$\frac{(\text{Dev\$} + \text{Prodn\$}) * \text{MI}}{\text{Unit\$}} = \text{ROI Units}$$

$$\frac{\text{ROI Units}}{\text{Unit/yr}} = \text{ROI period}$$

MI = Margin Index

%	k
30	1.43
40	1.67
50	2.00
60	2.50

ROI example — traditional, low-level APIs

This shows a typical ROI story using figures for a 'boards in a server' approach. The figures are representative of our experience and should be a reasonable guide for most applications.

$$\frac{(76725 + 150000) * 1.67}{1000} = 378$$

$$\frac{378}{200} = \text{ROI in } 1.89 \text{ yrs}$$

Development Costs

Coder per yr	80,000 GBP
Days available	236
Cost per day	339 GBP
Low-level API	225 days
MI	40% / 1.67

ROI example — cloud based, high-level APIs

This shows a typical ROI story using figures for a cloud based development process. The development process is significantly shorter, drastically reducing the ROI period.

$$\frac{(3390 + 50000) * 2.50}{1000} = 134$$

$$\frac{134}{200} = \text{ROI in } 0.67 \text{ yrs}$$

Development Costs

Coder per yr	80,000 GBP
Days available	236
Cost per day	339 GBP
High-level API	10 days
MI	60% / 2.50

Development simplicity

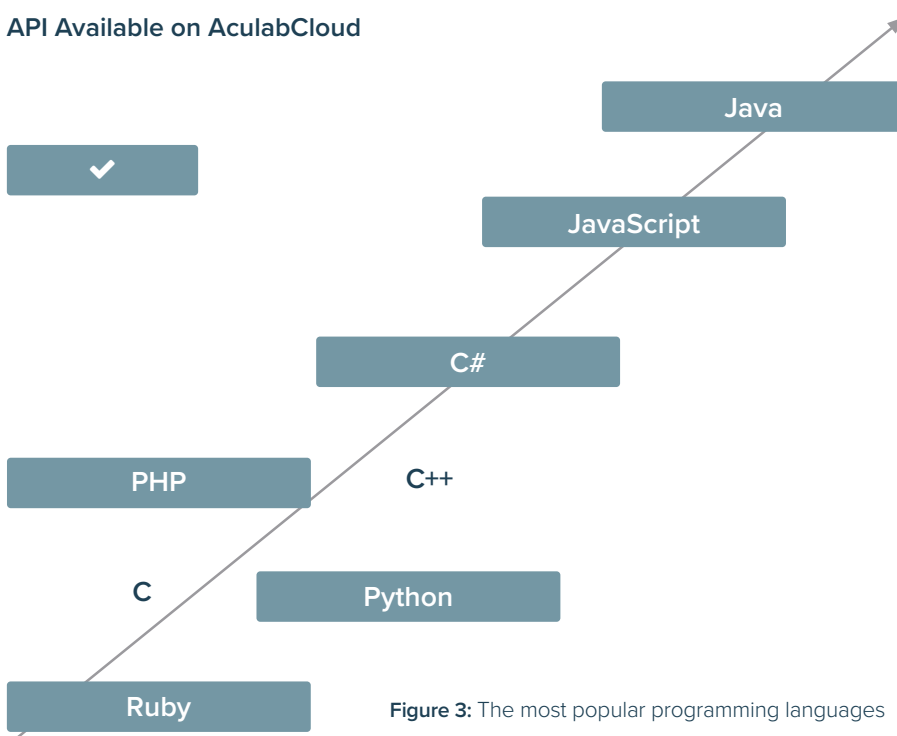
Less heavy lifting and reduced vendor lock-in

A lighter skill set

Hardware-based solutions require developers to have detailed knowledge of low-level programming languages and telecom environments and protocols. Hardware application development therefore requires a very specific and increasingly scarce skillset – in-depth familiarity with a range of telecoms protocols, as well as significant expertise in C type coding languages.

Moreover, the nature of hardware-based programming means that in choosing to deploy a hardware-based solution, a developer effectively commits to the API and libraries of a specific hardware provider. An application that has been developed on one vendor's hardware cannot easily be ported to that of another, which means that it's effectively 'locked' into deployment with a specific vendor – a situation that clearly disadvantages the developer in numerous ways.

API Available on AculabCloud



Reduced reliance on vendor specific APIs

Crucially for the developer, cloud-based applications are essentially portable between one cloud platform and another. With much of the application's 'heavy lifting' abstracted to the cloud, the development effort required to create an application is significantly smaller than would be required to extend or move a CPE- or hardware-based application to a different platform.

This, coupled to the extensive development toolkits and libraries available, offers developers more freedom to choose between deployment platforms, and to migrate quickly should the business case demand it.

The Advantages of high-level languages



Simplicity

C# and the Microsoft.NET environment mean that the code is practically written for you.



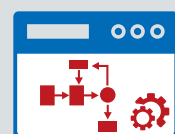
Time

There is a two orders of magnitude difference in coding an application in C versus Python, Java, C# etc.



Less Code

Coding in high-level languages means less code to maintain and faster, simpler debugging



Value add

More time can be spent on coding real, added value functionality instead of low-level routines

Aculab Cloud

Three decades of innovation — in the cloud

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...how do you know that a cloud platform can deliver the same level of reliability and performance that you've come to expect from a hardware deployment, and that it will be around for decades?

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Leverage the heritage of Aculab when you move to the cloud

Moving your application development environment to a cloud infrastructure is a big step. Despite the clear benefits of cloud migration, it's natural for developers of hardware-based solutions to be concerned about the risks of moving their technology IP — and the years of investment and knowledge that has gone into creating it — to a new cloud development platform. Most of the big names in cloud communications are relatively new entrants to the communications market; some are working with open source technologies and, as the market consolidates, it is likely that many will not be in business in just a few years' time. So how do you know that a cloud platform can deliver the same level of reliability and performance that you've come to expect from a hardware deployment, and that it will be around for decades?

Three decades of innovation — the next chapter

Aculab Cloud deploys Aculab's industry benchmark technology and has been built organically out of more than 35 years' worth of experience in the communications enablement market. Put simply, it's the result of more than three decades of experience and innovation.

Aculab Cloud developers can be assured that the technology that powers Aculab Cloud has been used to enable tens of thousands of mission-critical applications across the world. Aculab Cloud features robust, field-proven protocols that have been developed and honed in conjunction with thousands of developers and deployed across hundreds of networks.

It's the only cloud communications platform that delivers the expertise, experience and reliability that you get from working with a proven communications enabler.

About Aculab

Aculab provides deployment proven telephony products to the global communications market

Whether you need telephony resources on a board, on a host server processor or from a cloud-based platform, Aculab ensures that you have the choice. We are an innovative, market leading company that places product quality and support right at the top of our agenda. With over 35 years of experience in helping to drive our customers' success, our technology is used to deliver multimodal voice, data and fax solutions for use within IP, PSTN and mobile networks – with performance levels that are second to none.

For more information

To learn more about Aculab Cloud and Aculab's extensive telephony solutions visit:

www.aculab.com

Contact us

Phone

+44 (0) 1908 273800 (UK)

+1 (781) 352 3550 (USA)

Email

info@aculab.com

sales@aculab.com

support@aculab.com

Social

 [@aculab](https://twitter.com/aculab)

 [aculab](https://www.linkedin.com/company/aculab)