Software2

Building a business case for AppsAnywhere

Overview:

This is Software2's guide business case for AppsAnywhere, specifically written for universities and colleges.

The aim is to enable Higher Education organizations to use this as a template for your own internal selection process in choosing AppsAnywhere.

The guide is based on our experiences and opinions, as outlined further in the disclaimer.

For more information about Software2 please visit **software2.com**

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Introduction and executive summary

AppsAnywhere enables universities, colleges and schools to **deliver the "any app, any device, anywhere, anytime" vision**. By offering a single place for all software to be managed by IT and accessed by students/staff, AppsAnywhere delivers any application to any device on-demand, on or off campus.

AppsAnywhere has a key integration with a "Gartner Cool" application virtualization technology, called Cloudpaging (developed by Numecent in California), offering greater flexibility to higher education than other application virtualization products on the market (such as App-V and ThinApp).

It has already been implemented and used extensively at some of the world's largest universities and school systems with significant results – to date more than 2 million users in over 20 countries.

Key benefits include:

- Improving the student experience (shortlisted for a TechWorld award)
- Reduction in license expenditure by on average 10%
- Improvement in student surveys, and student recruitment/retention
- Reducing image size by on average 75%
- Reducing packaging time by on average 50%
- Enabling more effective BYOD
- Reallocation/repurposing of lab space
- Ability to offer technology to all student devices including assisted learners
- Improvement in student log on times by a factor of ten times
- Improvement in IT perception and student/staff feedback
- Increased control of application delivery for IT
- Consistent point of access for all software for end-users, on any device

Tip:

In general, 5 key benefits or reasons is enough, depending on your university/college

Return on investment

Based on analysis and feedback from over 200 universities already using AppsAnywhere, Return on Investment (ROI), on average, should be between 6 and 9 months. Return on investment for the project starts from day one and impacts a number of areas both in terms of efficiency for the IT team, but more importantly in improving student life and learning across campus. By implementing AppsAnywhere, your valuable IT team are also freed up to focus on more strategic projects that benefit the entire university.

The main areas we will generate improvements in include;

- **Reduction in packaging time by 50%**

    o This equates to an annual time/cost efficiency of $120,000 p/a based on a team of 6 packagers earning $40,000 p/a

- **Reduction in image size by 75%**

    o Average time/cost efficiency is 75% reduction administrative time for image maintenance and delivery to labs as well as patch and update management
    o This equates to an annual time/cost efficiency of $120,000 p/a based on a team of 6 packagers earning $40,000 p/a

- **Improvement in student experience**

    o On average our customers retain 5% more students with effective application delivery
    o Number of Students x $ value per annum x 0.05 = annual saving/improvement
    o Our customers can also attract more students by offering a more flexible way to work, giving them the choice of when and where they study, rather than being tied to set campus labs

- **Reduction in software license costs by, on average, 10%**

    o Software budget annual x 0.1 = annual saving/improvement

- **Increased efficiency at critical times.**

    o Rebuild times after exams were previously taking at least two hours, for some computer rooms across faculties it was taking from 4-6 hours per PC and some overnight builds that ran for hours.
    o This has been reduced by over 80% - now, during exam periods, the student computer room can be converted in much less time than before and the build is reliable.

- **Improvement in Environmental Quality.** Universities can reduce their carbon footprint thanks to the below benefits:

    o Reduction in CD handouts for BYOD
    o Reduction in server requirements
    o Reduction in image size hardware requirements

Software2's AppsAnywhere provides a mechanism for universities and colleges to deliver, manage and virtualize applications (software) to a client (staff or student) machine from a centrally-administered server.

Higher Education customers at Software2 have reduced the cost of application delivery, while improving service levels, simplifying management, and improving reliability and user experience.

With AppsAnywhere, our end users (staff and students) can access and work on their applications (software) as if they were installed locally. There are no performance issues and no complicated proprietary web interfaces they need to navigate. Once activated, their applications work in the same way as if they were physically installed.

Applications are delivered to end-user machines across the networks on-demand, meaning students can access applications anywhere, whether at home or on the move. However, applications still remain centrally-controlled and licenses can be revoked at any time.

Recently, following Staff Survey results and the increasing importance of 'Student Experience' results, it was realized that proactive management of the software estate and proven ways of delivering software to students and staff would contribute positively to both of these.

Description:

This will be a high-level summary of what's being proposed, why it's important at this time and the anticipated benefits. It's important to explain why the project is needed by the institution, linking its goals to that of the university/research institute's strategy.

Checklist for executive summary:

- Make sure the language is clear and that the reasons for the project and its outcome are well-articulated.

- Only include information that's contained in the body of the business case

- It should be concise. Local guidance on maximum length is advised

- It should be intelligible as a standalone document. Busy people often rely upon the executive summary to inform them, and they don't always absorb the whole document!

Benefits

The main benefits of AppsAnywhere include:

- **Faster software installation and more reliable PCs**
  Reimaging of University PCs is currently taking at least 6-8 hours. This is mainly down to the size of the image(s) and the amount and size of the software applications available on the PCs. Using AppsAnywhere's integration with Cloudpaging application virtualization, PCs could be re-imaged in much less time than before, with a more reliable build.

- **Better and faster PC performance / running of applications**
  PC performance is improved as software packages do not have to be installed on the PC image. Software would be deployed on-demand, which means that PCs would be running quite lean, compared to the huge number of current applications that are currently sitting on the PC. Traditionally, the more applications you install locally, the more bloated the registry and system folder will get. This makes the computer slower and increases the risk of failures. Application virtualization leaves the registry and the system folder untouched. Moreover, the application still behaves as if it was locally installed, and there's generally no compromise on performance, so users can make full use of 3D graphics, HD content, high-CPU performance and any other local resources. Advanced configurable virtualization means the user experience remains the same without any conflicts with the end machine.

- **Improved speed and flexibility of software deployment.**
  Currently the image is agreed for each academic year, making it difficult to deploy new software or version upgrades etc. ad-hoc during the academic year. AppsAnywhere would allow new software/versions to be easily deployed throughout the academic year, ensuring a more flexible response to teaching /academic needs.

- **Improved software license purchasing decision process.**
  By using AppsAnywhere's reporting tools, it's possible to see what software application has been used by the university and/or school/department. Application usage is metered within the system on a 'per user per second' basis, so a wealth of data is available for analysis. This data is then fed into S2 Dashboard, the graphical reporting suite where management dashboards are created with up-to-the-minute application usage information.

- **Enhanced student experience;**
  Improved student experience – potentially any Windows application to any managed machine. In addition, software applications could be found in a consistent way, across the whole University, with a customizable (can be branded) 'app store'.

- **Full license management leading to the maximization of software resources**
  Administrators can keep track of exactly how many licenses are being used at any given time and redistribute them where necessary. By maintaining a central pool of licenses and allowing users to take from the pool wherever they are, as and when they need them, resources can be maximized, and vast amounts of money saved.

- **Secure remote access to applications / support for the University's BYOD strategy**
  Applications are delivered to end user machines across their networks, meaning users could eventually access applications anywhere, whether at home or on the move. However, applications still remain centrally-controlled and can be revoked at any time. A self-service portal could therefore make it easy for students to access the software they need on their own devices and laptops.

- **AppsAnywhere Analytics**
  AppsAnywhere Analytics displays usage data on data points such as launches per delivery method, concurrent license usage of delivery methods or software titles, and more. Universities have been able to use the data to identify unnecessary expenditure and save money, build business cases for IT projects such as enabling 'bring your own device' (BYOD) and creating open-access learning areas ('virtual' labs).

- **Software2 Packaging Service**
  A multi-level, subscription-based packaging service with a menu of pre-packaged software titles to choose from, including notoriously tricky suites such as Adobe Creative Cloud and AutoDesk. The complexity of packaging means it is a specialist and time-consuming task; with apps pre-packaged, more time is freed up for IT to provide support and work toward key IT goals. The pressure of packaging before the beginning of semester is alleviated and last-minute changes to software, as well as mid-semester additions/alterations are much more viable.

Benefits for students and staff

- All applications will be available from any computer room so students will no longer be frustrated when specific rooms with specialist applications are booked for teaching.
- Students will also be able to run applications at a computer room local to their accommodation rather than having to travel to a specific room.
- Subject to license restrictions students and staff will be able to run applications on their own Windows based computers from anywhere using the same interface they will be presented within computer rooms.
- Due to smaller image size faster repair of PCs will be possible increasing the availability of computers.
- Newer versions of specialist software can be delivered quickly as they will no longer require a lengthy deployment of a large image. This will also help staff when they make requests to deploy software to specific rooms as the time required can be reduced.
- Software packages can be shared between the International Campuses helping to bring parity of desktop provision to all students.
- As all Windows software can be delivered by AppsAnywhere, this would mean that any support calls logged against an application can be fixed centrally without the need to visit the machine, resulting in quicker fix times and higher availability.
- All applications are available from a single location, a web-based portal that offers a consistent access experience on any device, in any location, at any time. Students and staff know exactly where to go to get the software they need.

Benefits for support

- Reduced overhead on central support teams having to create, deploy and maintain large specialist application specific images.
- Faster reimage times due to reduction in image size and complexity.
- Simplified packaging of applications allowing local IT Support teams to turn around local requests faster than a central team.
- Ability to share packages between international campuses so they can be packaged once and used and all locations, eventually this could lead to offshoring our application packaging or spreading the work equally as required.
- Ability to share packages between institutions through the Software2 Community.
- Enhanced problem resolution across Windows desktop estate due to everyone using the same image.

Benefits for the University

- Enhanced reporting capabilities and management information allowing us to see detailed application usage on all University applications, license consolidation and re-allocation. Using a one-stop shop for all software makes it easier to pool licenses together and allocate them more efficiently.

Description:

This section will detail the expected financial and non-financial benefits of the project.

In the Keeping Research Data Safe (Phase 2) final report a benefits taxonomy has been produced that can inform your approach to developing this part of the business case.

Checklist for benefits appraisal:

- Keep focused on the problem, need or opportunity addressed by your project.
- Are any of the benefits quantifiable? For example, reducing risk, or saving costs over time?

Include any intangible benefits and illustrate how they improve the effectiveness of research and teaching.

Project description

Project team

You can propose your internal team(s) who will be working on this project in this section. You should remember at this point how the proposed project team compares with what is required from an equivalent 'VDI solution'. From a server and IT resource perspective, the implementation and ongoing management of AppsAnywhere requires fewer IT specialists and complex hardware than any desktop virtualization solution.

Project objectives and success criteria

The aim of the project is to improve the student experience by enabling easier and faster access to software. Students want software that just works. They want it to work on their device and they want to be able to access it anytime – both on and off campus.

1. Improve our Student Survey results by 10%
2. To provide an easier way for staff and students to access software applications
3. To support BYOD more effectively by providing software applications to any device
4. To provide any Windows application to any device, anywhere, any time.
5. To reduce packaging time by 50%
6. To reduce image size and associated costs by 75%
7. To reduce time to teach by 2 minutes per classroom
8. To enable assistive learners to access the software they need, when and where they need it
9. To provide software applications to students on and off campus.
10. Uses fewer resources than a separate virtual machine.
11. Run applications that are not written correctly, for example applications that try to store user data in a read-only system-owned location.
12. Run incompatible applications side-by-side, at the same time and with minimal regression testing against one another.
13. Reduce system integration and administration costs by maintaining a common software baseline across multiple diverse computers in the university.
14. Implement the security principle of least privilege by removing the requirement for end-users to have Administrator privileges in order to run poorly written applications.
15. Simplify operating system migrations.
16. Improve security, by isolating applications from the operating system
17. To reduce license expenditure by 10%
18. To reduce our carbon footprint by 50 tons per annum (removal of CD's, servers etc.)
19. Increase application up time by 25%

Description:

This will include a brief description of the objectives of the project and its scope. That is what is and what is not included. List the key stakeholders together with their relationship to the project.

Checklist for project description section:

- Describe clearly the purpose and scope of the project.
- State what will change as a result of the project.
- Describe how success will be identified and measured

Strategic fit and requirement

The team agreed that the following requirements are crucial for a modern software management and delivery infrastructure:

- Quick turnaround of packaging an application

  (no more missed SLAs, less frustration for staff in particular)

- Simple console for ad-hoc deployment of apps

  (it must be easy enough for a Front-Line Support team member to do)

- Ability to add set list of applications to unattended PC install

  (in keeping with fully automating the building of generic Windows workstations)

- Web-based self-service kiosk for users

  (Has the potential to reduce support request ticket numbers)

- Delivery of software to unsupported workstations

  (for example, Staff members working from home, or student laptops)

- Offline access

  (laptop users must be able to use software when away from campus with no connection)

- Support for legacy applications on newer OS

  (we can move smoothly to Windows XX without repackaging all the compatible software again)

- Security

  (applications must be managed, so we can adhere to licensing)

- Easy to update/patch applications

  (software kept up to date smoothly and with minimum distraction to the user)

Are you using or considering alternative application virtualization products such as Microsoft App-V?

The University currently uses Microsoft App-V to deliver applications to users virtually over the University network. Whilst proving to be very useful in the first instance, the shortcomings of the product result in large management overheads and a less than expected student experience. App-V currently delivers approximately 60-70% of University applications to Staff and Students, though the remaining 30-40% of the applications cannot be delivered.

The main flaws with the App-V product are:

1) The inability to target computers for deployment (users only)
   a) Software that is only licensed for computers only has to be deployed via SCCM so that computers can be targeted.
2) Cannot deliver drivers or services
   a) Software is either deployed via SCCM or included in custom images to circumvent this.
3) Inability to natively offer off-site access
4) Insufficient reporting on usage of applications

The above limitations result in a large amount of support time being invested into filling in the gaps left by the product. The fact that all applications cannot be delivered using this mechanism result in other technologies and mechanisms being adopted which have proved to be significantly time-consuming and difficult to manage for this purpose.

End-users have also expressed frustrations in not having the freedom to use the applications that they require in different areas of the University and on their own devices. Room bookings and timetabling schedules sometimes result in students not being able to access their desired software at all until rooms become available which could significantly hinder their ability to complete coursework and meet deadlines.

Due to the management overhead and the less than desired student experience which App-V provides it is felt necessary to investigate other products to deliver applications virtually.

Description:

Make this case of how the project aligns with the overall strategic plans of the University/Research Institute, and how it may impact the strategic plans for the Department/Unit.

Checklist for strategic alignment:

- Be clear that the project has been conceived take due note to local strategies.
- Explanation of how the project impacts on the institution's strategic goals.
- If possible, state where there is support for this project and why it should be supported.
- Use tools such as those provided by AIDA and KRDS to inform your arguments.

Options and alternatives

A very wide range of alternative systems / software is available, and these are compared extensively in the following matrix: https://www.whatmatrix.com/comparison/Application-Virtualization

The team agreed the following requirements are crucial to modern software management and delivery infrastructure:

- Quick turnaround of packaging an application
- Simple console for ad-hoc deployment of applications
- Ability to set list of applications for unintended install
- Web-based self-service kiosk for users to reduce helpdesk requests
- Delivery of software to users with own devices
- Offline access for laptop users
- Security – managed applications to adhere to licensing
- Easy to update/patch applications

The main contenders were identified as:

- VMware ThinApp and Citrix XenApp
- Microsoft App-V
- Software2 AppsAnywhere – selected

A number of other Universities have already reviewed these products extensively, and the AppsAnywhere system compares well with all the main competitors. The AppsAnywhere system was reviewed in more detail, against the team's main requirements:

Requirements	AppsAnywhere
Quick turnaround of packaging an application	Yes
Simple console for ad-hoc deployment of apps	Yes
Ability to set list of applications for install	Yes
Web-based self-service kiosk for users to reduce helpdesk requests	Yes
Delivery of software to users with own devices	Yes
Offline access for laptop users	Yes
Security – managed applications to adhere to licensing	Yes
Easy to update/patch applications	Yes

In addition to fully meeting the requirements, it appears the system has the following advantages over other alternative solutions / systems:

- **A very high application virtualization success rate.**

  Independent review has affirmed the AppsAnywhere system is able to virtualize a very high percentage of applications (using a Windows OS) - theoretically a 100% success rate.

- **A highly collaborative and supportive existing university user base.**

  Current subscribers share 'recipes' and regularly meet at hosted events to discuss issues and solutions with each other and the supplier.

- **A distributor/vendor that is highly reactive to user's needs and requests.**

  Software 2, the worldwide distributor, is currently exclusively geared to an academic customer, and so is fully aware of sector issues and the unique demanding environment; 100s of software applications; 1,000s of Devices; 10,000s of users. Current University users of the AppsAnywhere system have confirmed that their requests and suggestions often form the basis of version upgrades.

- **Modest backend requirements.**

  In stark contrast to many other virtualization technologies, the AppsAnywhere system has very modest infrastructure requirements. The Microsoft architecture and all servers can be either physical or virtual, and each server will easily cater for over 2,000 concurrent users. The database is MS SQL, and this will happily sit with other databases or in an existing cluster.

- **Very competitively priced.**

  The system is very competitively priced compared, and a fraction of the cost of other desktop virtualization technologies such as VDI.

There are a variety of products available all offering application streaming solutions, though the University needs to look at a product that is best tailored for the current needs and requirements. Below is a table highlighting the current requirements weighted in terms of essential, desirable and for the future:

Requirement	Essential (3)	Desirable (2)	Future (1)
All Windows applications to be available across all campuses and streamed efficiently	✓		
Off-site access to applications (license permitting)		✓	
Cross-platform support		✓	
System easy to administer	✓		
AD integration to allow computer and user targeting	✓		
Reporting facility to monitor and report on application usage	✓		
Ability to share packages between institutions, communities and internationally		✓	
Tablet/Mobile device support			✓

In the short term the priority is having a solution which offers all of the University's Windows applications across campuses to both users and machines. This is so Students are able to use the applications they need where they want and when they want. Tablet/Mobile device is less of a priority as there are only a handful of academic applications which would be usable on a tablet/mobile device, this should however be considered as in future this number may increase with the number of these devices increasing also.

Outside of the technical and business requirements for the product the University also needs to make sure that the product has value for money and is not too expensive. A total cost of ownership has been put together for current application virtualization practices and side effects of the limitations and this will be analyzed when looking at the costs for a new product to work out an expected return of investment.

Suitable products available for comparison are AppsAnywhere, Citrix XenApp, Spoon.Net and VMware ThinApp. These are the only products that look capable of delivering some, if not all of the University requirements. These products are compared to the University requirements in the matrix below:

Requirement	AppsAnywhere	Citrix XenApp	Spoon.Net / Turbo	ThinApp
All Windows applications to be available across all campuses and streamed efficiently	✓- claim to deliver 100% of Windows applications	X – does not offer integration to local OS meaning drivers and services will be unavailable	X – Only a handful of applications currently on Spoon.Net	X – does not offer integration to local OS meaning drivers and services will be unavailable
Off-site access to applications (license permitting)	✓- Offers application launchers that allows off-site access to applications	✓ - Citrix receiver client allows access off-site	✓- Totally web-based	✓- Client offers off-site access to applications
Cross-platform support	✓- AppsAnywhere is available for all major platforms	✓- Citrix receiver available on most platforms	X – totally web-based though only offers client for Windows currently	X – Only available with VMware view
System easy to administer	✓ - Basic packaging interface linked to AD groups, similar to that adopted by App-V (though easier)	X – Unknown so would require staff training	X – Spoon.Net is unique and therefore unlike anything used before so would require a large amount of training	X – Unknown so would require staff training
AD integration to allow computer and user targeting	✓	✓	X	✓
Reporting facility to monitor and report on application usage	✓	✓	X	✓
Ability to share packages between institutions, communities and internationally	✓	X	✓	X
Tablet\Mobile device support	✓	✓	✓	✓

Description:

Demonstrate that you have actively considered a number of options other than the preferred option of your project. These should be described together with why they have been discounted. One of the options should be consideration of doing nothing and its consequences.

Checklist for Options Appraisal:

- Outline the range of options and the likely results of each.
  (three or four options should be sufficient)
- Explain why you have selected the proposed actions.
- Very briefly, as this has been described elsewhere, point to how the proposed solution aligns with appropriate University/Research Institute strategies and policies.

Consultancy/training costs

X day(s) consultancy services covering:

- Day Installation
- Implementation
- Training
- Deployment options
- Review
- Project Management

Systems cost

It's not anticipated that the systems backend infrastructure requirement would require any additional expenditure.

Description:

In the context of the business case proposal, the request for budget usually relates to funds to enable the completion of a full business case, then approval is given to go to the next stage. State if there is internal resource capability and capacity to complete a full business case. If not, state the budget required to complete the business case. Specify the timescales for developing a full business case.

The likelihood is that this section should also provide the best estimate of the overall project costs over the duration if a full business case were to be approved. This at this stage is often presented in a range rather than as a specific cost. The KRDS User Guide (see *www.beagrie.com/krds.php*) has detailed advice and tools for activity-based costing and cost-benefit analysis.

Local guidance regarding the presentation of costs should be obtained, e.g. consult local departmental finance officers.

Checklist for Cost Analysis:

- Check if there are local guidelines regarding the presentation of costs. Ask your departmental finance officer if assistance is available.
- What are the anticipated resources required Financial, Human, Equipment?
- Will support be required from Estates & Facilities, Computer Services and other areas? If so have you discussed the proposal in detail with them?
- Will external bodies / suppliers be involved?

Reference sites

A range of reference sites are available in the following countries/regions:

- USA
- Canada
- UK
- South Africa
- Denmark
- Norway
- Belgium
- Spain

Supporting the following improvements;

- Improvement in student experience and student satisfaction
- Improvement in university ranking
- Improvement in ability to attract/retain students
- Reduction license/server costs
- Improvement in BYOD capability
- Virtualizing 100% apps
- Reduction in packing time
- Reduction in image size