



Killer Apps 2012

Understanding Europe's application performance challenge

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Foreword

IT departments are witnessing change at a pace never seen before. Transformation is occurring as CIOs seek to access the benefits offered by unified communications, cloud computing, internet-based applications and consolidation, amongst many other strategic projects.

These initiatives are aimed at increasing an enterprise's business efficiency. While they simplify the way IT is delivered to users, they increase the complexity of corporate networking as applications and users rely on the continuous, reliable and consistent flow of data traffic.

Today many organisations are being held back from achieving the true value of their strategic IT programmes due to overloaded and poorly understood networks, which were not designed for the symmetric, data-heavy, internet-driven environments that proliferate today.

Application usage habits are changing rapidly too. Just a few years ago the extensive use of social media, video and unified communications applications was the exception. For many large enterprises it's now the norm. 'Killer Apps' are here and they have serious implications for the network.

The change outlined above can have a dramatic impact, not least on the critical applications that support core functions of the business. Application performance problems including slowness and non-responsiveness impact the user experience and overall productivity of the organisation.

In order to protect the business and the significant investments made in transformative applications such as unified communications and SaaS the network must be more intelligent, more responsive and more transparent. IT leaders need the ability to understand what's flowing over their networks and how those traffic patterns behave. They need the control levers to guarantee the performance of traffic flows that are really of relevance and importance to users. Networks must be 'application aware'.

Regular KPIs and metrics focused on the performance of applications mean that IT departments can be more pro-active, identifying issues before users begin the complaint process.

A structured approach to application management also helps IT leaders understand how much bandwidth they actually need, thus reducing cost and improving efficiency.

We hope you find the insights contained within this whitepaper valuable and can join us in encouraging global businesses to address the application performance management challenge.

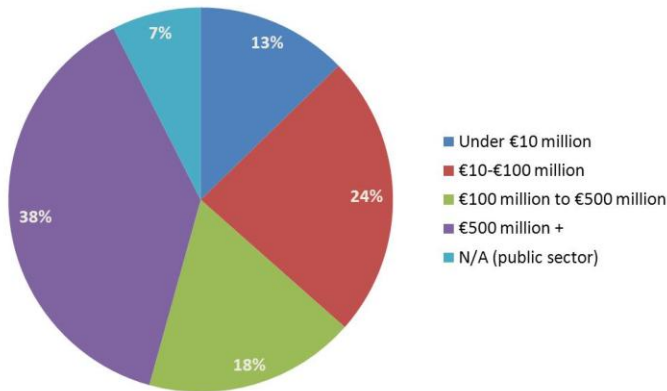
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Introduction

Corporate networks are becoming increasingly strained as companies consolidate IT operations, move to the cloud and adopt advanced bi-directional solutions like unified communications. There is a requirement for IT teams to ensure their corporate networks are ‘application-aware’ and able to support those applications which are essential to business performance in a cost-efficient way.

Please select your company's turnover rate



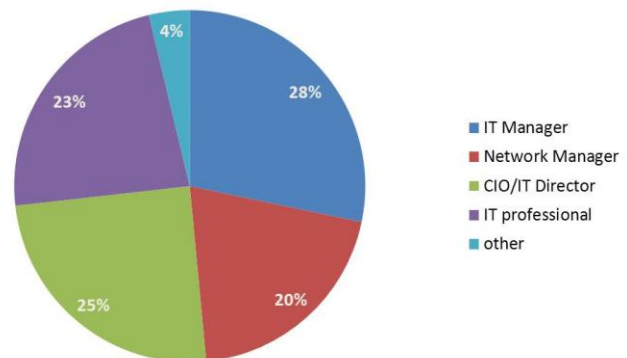
Killer Apps 2012 is a multi-national study that investigates how companies across Europe are managing this challenge.

The study includes a focus on which ‘killer applications’ are posing the greatest challenge today and which will do so in the future. *Killer Apps 2012* examines how companies are consuming applications

over the corporate network. It questions everything from networking budgets to bandwidth growth rates.

Killer Apps 2012 drew 551 unique responses from markets including the UK, France, Italy, Spain and the Benelux region. The study’s responses were collected during March – April 2012 with the majority of respondents drawn from large companies [40% of respondents are employed by companies with a turnover in excess of €500m and 20% by businesses with a turnover between €500m-€100m]. Respondent job titles include CIO, IT Manager, Network Manager and IT professional in roughly equal proportions.

Please select the job title that most closely matches your role



Application performance problems are on the rise across Europe

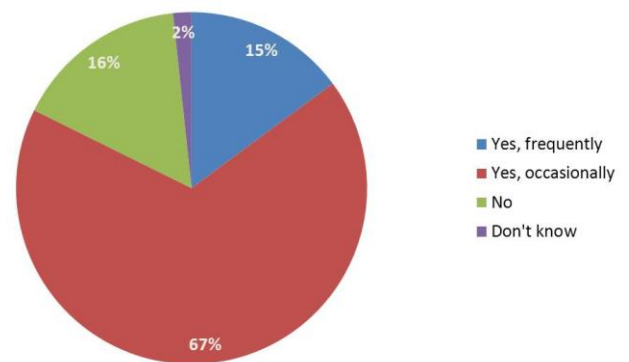
Applications are the lifeblood of modern businesses and their performance has an immediate impact on productivity and organisational efficiency. It is crucial for an effective, responsive IT department to understand how applications are used across the business.

Killer Apps 2012 revealed that companies across Europe are struggling with application performance. Of those surveyed, 82% of respondents said their business applications have struggled in the past 12 months.

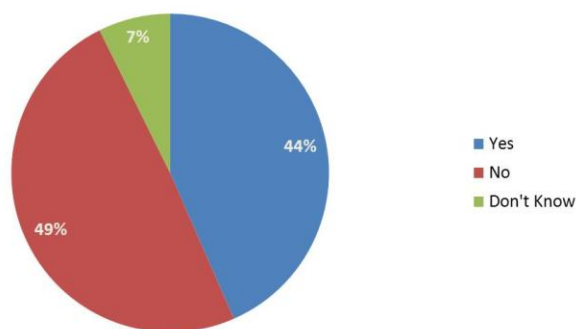
Alarming, many organisations reported that application performance issues are on the rise. Across Europe, 44% of respondents noted that application issues, such as slowness or non-responsiveness, are becoming more frequent.

Application slowness and non-responsiveness causes both poor efficiency and expense. Losing a mere 5 minutes a day due to poor application performance represents a loss of 1% of people efficiency.

Have any of your business applications suffered performance problems in the last 12 months?



Are application performance problems such as slowness or non-responsiveness becoming more frequent?



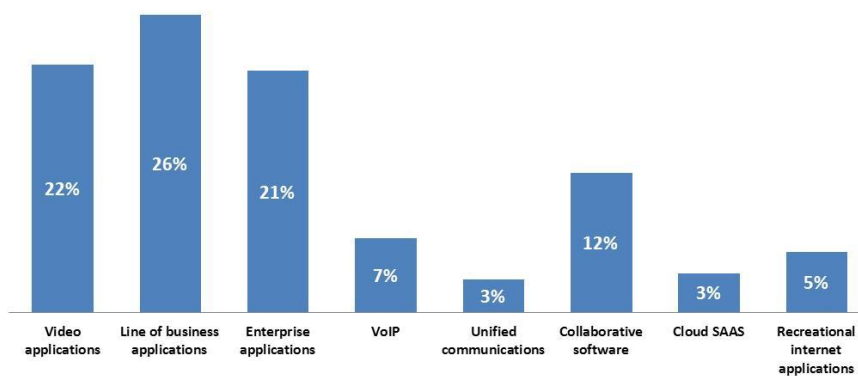
The growing level of application performance problems could be due to the increasing adoption of cloud computing and of internet-based applications. It could also be the result of the growing implementation of more advanced, bandwidth hungry applications such as video conferencing and unified communications.

While the cause is likely to vary by business, what is clear from the research is that many organisations need to be thinking in greater depth about how their networks are coping with increasingly demanding applications.

Pinpointing the ‘Killer Apps’ of today and tomorrow

More interesting than the scale of the challenge is its implications and the applications which seem to be most affected. When questioned about which applications most frequently suffer performance issues, respondents indicated it is their business-critical applications that suffer most.

In your opinion, which of the following applications types frequently suffer performance problems?



Nearly 70% of respondents indicated that line of business, enterprise, collaboration and voice applications suffered problems in a high percentage of cases – all of which are critical to the performance of an organisation. Video applications (such as video

conferencing) also frequently suffered performance problems for 22% of respondents.

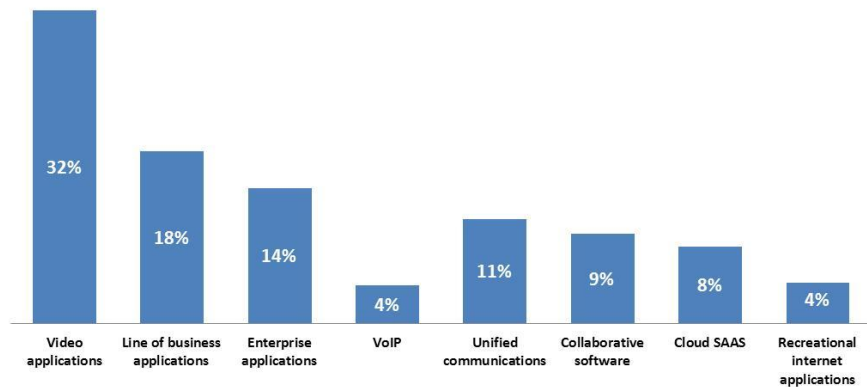
The trend toward evermore networked applications looks set to continue. According to IT analyst house Forrester the cloud computing market will grow from \$41 billion in 2011 to \$241 billion in 2020¹. Similarly, analyst house IDC forecasts revenue from unified communications and collaboration technology to increase at a compound annual growth rate of 18.3% to \$44 billion by 2015².

¹ <http://blogs.wsj.com/digits/2011/04/21/more-predictions-on-the-huge-growth-of-cloud-computing/>

² http://www.informationweek.com/news/telecom/unified_communications/232300809

When we asked respondents for their predictions of which applications are likely to drive the greatest growth in data networking requirements, video emerged as the 'killer app', cited by 32% of respondents. This may be a result of the fact that the

In the future which application type will drive the greatest growth in network resources across your network?



bandwidth requirements of video applications tend to exceed those of almost every other application. Video conferencing adoption is also widely understood to be growing quickly with 79% of business executives already using two-way video communications at least once per week according to a Cisco report³. More generally, video to the desktop is also accelerating at a drastic pace.

Line of business applications (14%), enterprise applications (14%) and unified communications (9%) were also viewed as significant consumers of network resources in the future.

Whilst CIOs and Network Managers need to consider protecting data-heavy applications like video it's also important to consider the impact these applications have on the general performance of other systems. For example, unified communications encourages desktop-to-desktop video communication which can be powerful for productivity but which places enormous strain on intra-branch Wide Area Networks (WANs) that carry this traffic.

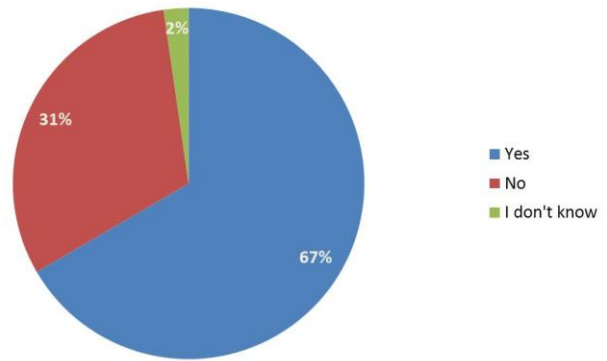
A single flow like this can mean upwards of 300-400 Kbps between branch office sites, which are not traditionally equipped to handle this level of traffic. There is a dual requirement to protect the unified communications application while also ensuring that other business critical applications such as SAP or Oracle continue to function.

³ http://www.cisco.com/web/about/ac79/docs/ps/Enterprise-Video_Top_5_IBSG.pdf

Flying blind: the visibility challenge

One of the first steps for any business seeking to ensure its network is ‘application-aware’ is gaining visibility into how the network is used. Without a clear understanding of which applications are flowing across the network, the bandwidth requirements of those applications and their performance, managing the entire process becomes far more challenging.

Do you know how many applications are running across your corporate network?

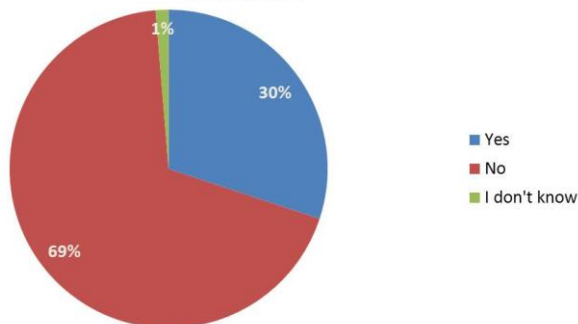


Yet today many of Europe’s businesses are ‘flying blind’ without adequate knowledge of what makes up their network traffic and which elements of it are of greatest importance to users and the company.

We posed respondents the question “Do you know how many applications are running across your corporate network?” Whilst the majority do have this basic information, a significant minority (31%) of respondents indicated they didn’t know how many applications relied on their corporate WAN.

When questioned further, 69% of all those surveyed noted they didn’t have visibility into how much bandwidth each application running on their corporate network consumes, which shows that application knowledge is rather limited.

Do you know how much bandwidth each application running on your corporate network consumes?



Today there is no standard industry indicator for measuring application performance. That’s because there are too many applications and too many ways to consume them. However, technology does exist to provide this level of visibility, such as Ipanema’s easy to understand 1-10 Application Quality Score (AQS). This simple metric aggregates a range of

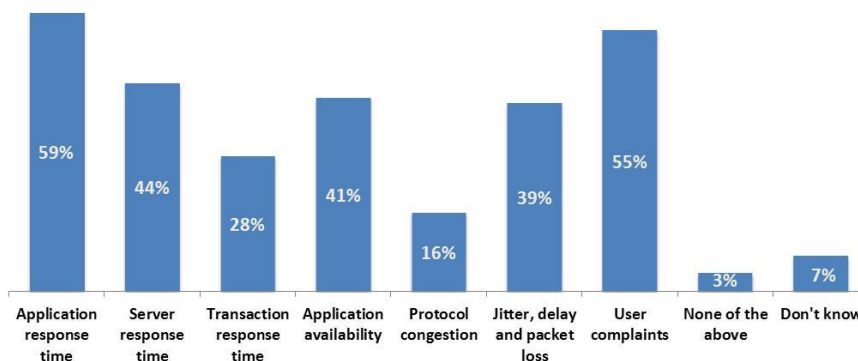
technical performance indicators to provide IT teams with the intelligence to spot and identify performance problems easily.

An improved level of visibility and understanding gained from measuring this type of application performance KPI helps IT departments improve their efficiency.

We wanted to understand companies' ability to measure the performance of their critical applications. According to the *Killer Apps 2012* study sophisticated measurement of application performance is elusive. Over half of all those surveyed indicated they primarily rely on 'user complaints' to judge application performance (55%).

This is concerning as a user complaint should be the final line of defence. IT departments need to preempt calls from users with advanced warning about application response or performance problems.

**Which of the following metrics do you currently have to help you judge application performance?
(Please tick all that apply)**



What is also clear from the results is that a fragmented method of measurement exists today. Some respondents have access to traditional network management metrics such as 'jitter and delay' with others using IT metrics such as 'server response time'. There are complex factors

on both the IT and network side which determine how well a specific application is performing. In order to truly understand the average, accurate and complete performance of an application IT departments require all the above metrics presented in aggregate form.

Bandwidth economics: doing more, with less

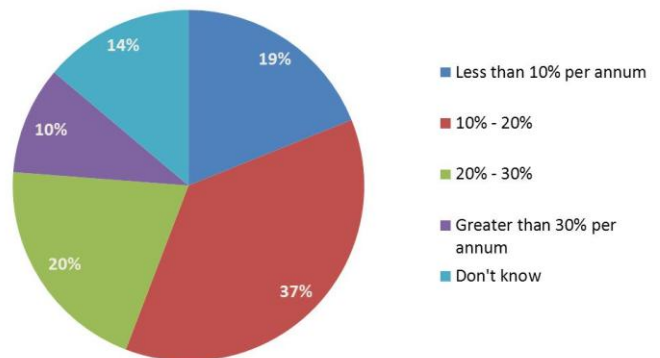
Respondents told us their bandwidth requirements are increasing. Of those surveyed, 67% said bandwidth requirements were growing at a rate of at least 10% per annum. 20% saw growth of 20% - 30%, and for 10% of respondents, bandwidth requirements were growing by over 30% per annum.

This is a familiar story amongst both the Easynet and Ipanema customer bases as new applications, increased user adoption of advanced applications and growing machine-to-machine communication drives the requirement for capacity.

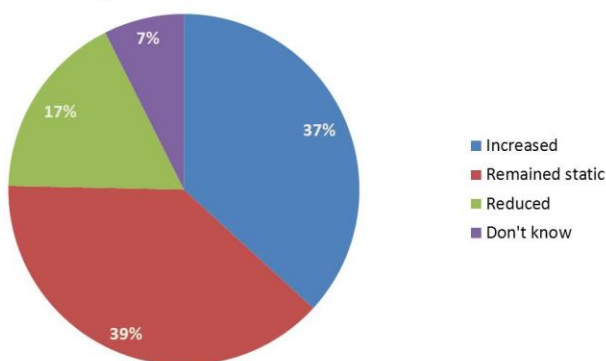
Since the 2008 financial crisis and the ensuing economic fallout, IT teams around Europe have been forced to manage this growing requirement for network bandwidth with constrained resources.

This is confirmed by a look at the network budget: in a large portion of cases (37%), data networking budgets have increased during the previous 12 months while a similar number (39%) have remained static. This suggests traffic increases are progressing faster than the natural level of bandwidth price erosion can compensate for.

How fast are your data networking requirements growing in bandwidth terms?



Has your corporate data networking budget grown in the last 12 months?



In some cases increasing budgets afford companies the opportunity to take a step back and consider the network in its widest sense. The network is best viewed not only in terms of the role it plays today, but also in its increasing relevance and importance to IT transformation.

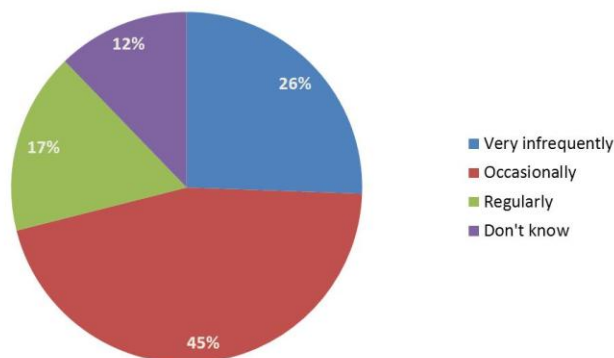
In most cases there is a need to move the network away from its position as a 'dumb pipe' and toward being viewed as a strategic asset. Such a

network asset can protect significant investments being made in new applications by providing application performance guarantees and SLAs.

This is especially true when IT budget spend as a whole is considered. Enterprises on average spend \$1,000 per user, per month on IT. Roughly one third of that budget, or \$320, is invested in applications alone. When IT spend is considered within that wider context the business case for equipping networks with added intelligence, visibility and the ability to control application performance becomes easier to understand.

Within this context it is important to ensure that resources are applied in the most efficient way. The *Killer Apps 2012* study highlighted that in many firms network bandwidth isn't always working to its full potential. For example, when we asked respondents how often their networks ran to full capacity only 17% said it was a regular occurrence. 71% do not use their network at full capacity – and yet our research suggests these respondents still experience application performance issues, despite having excess capacity in the network.

How often is your corporate network utilised to its full data transmission capacity?



Whilst many firms add additional network capacity as a solution for reducing application performance problems, this can't be the right approach. Due to the way the internet is designed and the way the TCP protocol operates, applications will take as much bandwidth as possible.

This implies that recreational and less critical applications will 'starve' business critical applications of required network resources, impacting user experience and business efficiency.

Companies often see investments in bandwidth rapidly swallowed by growing application demands. Bandwidth alone also struggles to handle the variable nature of many applications, such as those where the resources needed at peak times vary sharply from those needed during less demanding moments.

The solution lies in a combination of network consultancy such as that offered by Easynet, to ensure a future proof global network is deployed in the first instance, and the right application performance management technology and services so that a company can 'right-size' its network. Right-sizing means aligning network resources and performance to their business requirements, deploying bandwidth for critical applications where it is really needed in order to appropriately manage demand. This allows companies to identify excess spend on bandwidth and to re-deploy those funds to other projects while being able to guarantee the performance of their business applications.

Executive Summary

- ▶ Today's strategic IT challenges include moving to cloud computing, increasing reliance on internet-based applications and deploying advanced, bandwidth hungry systems including unified communications and video conferencing. All these strategic initiatives require a pro-active approach to managing the application performance challenges they present.

- ▶ Application performance problems are prevalent across Europe today and growing in a large percentage of cases. Business critical applications are especially vulnerable with a subsequent impact on overall business efficiency.

- ▶ In the future, video-based applications and unified communications are set to drive the greatest demands on the corporate network as user adoption grows and companies seek the benefits of closer collaboration. This requires careful implementation in order to protect the significant investments made, as the impact of these apps will also affect other critical applications.

- ▶ Companies lack visibility into how their applications and networks behave which limits their ability to pro-actively govern the performance of those assets. Measurement of application performance remains limited with a heavy reliance on rudimentary metrics such as user complaints. Organisations must take a more governed approach to application performance management with improved visibility into how individual applications are performing in order to pinpoint problems pro-actively, improve communications with the business and to set application SLAs.

- ▶ There is a clear gap between network bandwidth and application performance, proving the requirement to deploy networks more efficiently, to obtain better application control and to gain greater value from existing investments.

**Application Performance Management solutions from Easynet– powered by Ipanema Technologies’
Autonomic Networking System**

Easynet’s suite of WAN Optimisation solutions based on Ipanema’s application performance management system enables any large enterprise to have full control of their global network. The unique, patented, Autonomic Networking system guarantees business application performance and continuity in all enterprise environments through tightly coupled features that together bring a unique level of intelligence to the enterprise network:

- ▶ Application Visibility, providing full understanding of application usage and performance over the global network - from the smallest detail up to high-level SLA-based application performance management and capacity planning,
- ▶ QoS & Control, dynamically adjusting network behaviour and resources to the exact application traffic demand - guaranteeing critical application performance in the most complex and changing traffic situations,
- ▶ WAN Optimisation, accelerating applications response times and offering additional virtual bandwidth to the network,
- ▶ Dynamic WAN Selection for multi-networked branch offices, selecting automatically the best network according to actual performance and application traffic characteristics.

As a result, the user experience is guaranteed, the business applications are accelerated, the hybrid network is unified, the costs are reduced, the WAN becomes coherent, predictable and aligned with business needs - driving higher levels of enterprise performance.

About Ipanema Technologies

Ipanema provides enterprises with a direct connection between application performance and their business requirements. With Ipanema Technologies, enterprises automatically understand which applications use the network and deliver guaranteed performance to each user. Enterprises can support their strategic IT transformations (like cloud computing and Unified Communications) and control Internet growth while reducing their IT expenses. Ipanema's customers range from mid-sized companies to enterprises with 1,000s of sites. For Enterprises, Ipanema is available as a Product through an international network of Certified Channel Partners, and as a Service through Managed Service Providers and Telecom Operators' Managed Services. For SMBs, Ipanema is available as a Service through Ipanema's AppWork™ Authorized Partners network. For more information, visit: www.ipanematech.com

About Easynet

[Easynet](http://www.easynet.com) is a network, hosting and cloud integration business. It has customers, employees and offices in every continent, and combines global reach with local expertise, providing a personalised experience wherever its customers are in the world. Customers include EDF, Sage, FOX, Yakult, Transport for London, Bridgestone, Q Park and Campofrio.

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