White paper

Workplace as a Service – From vision to reality

September 2014
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INTRODUCTION

Background and focus

One of the most hotly discussed themes in business enterprises, in the press and among market analysts today is how IT workplaces or, to be more precise, IT workplace environments for company employees will be designed in future. This is a logical development, since the working world has undergone a vast transformation in recent years. At the same time, it is precisely in this workplace environment that we currently see a lightning advance in the available technologies and concepts. The provisioning of state-of-the-art work environments from the cloud, for instance, is no longer merely a vision, and 'cloud-based' working has been standard practice in our home environments for some time.

Many employees and business managers therefore rightly bemoan the fact that modernization of IT workplace environments has not been able to keep pace with this development. They now have to address the issue of a massive rise in mobility, flexibility, exchange and networking requirements. To do so, they need the right tools. Such tools are already available on the market and are already frequently used in home environments, whereas their deployment in the business environment lags some way behind.

The IT is frequently the scapegoat – but this is unfounded. Discussions often overlook the fact that IT managers face a major dilemma when it comes to workplace modernization. The increasing diversity of workplace applications and devices goes hand in hand with a significant increase in the cost of procurement, implementation and management. At the same time, numerous new security vulnerabilities occur. Despite the massive growth in requirements, however, most IT managers cannot expect any significant rise in their budgets.

Unlike most studies on this theme, this white paper does not focus first and foremost on the potential offered by the many new technologies for future IT workplace environments of company employees. Instead, it concentrates on the issue of how central cloud-based provisioning of IT work environments in the form of Workplace as a Service can reduce costs and resolve security vulnerabilities in the long term.
Contents

Section 2 details

- requirements for the sustainable design and operation of IT work environments,
- the inherent dilemma for IT managers and
- the need for central, cloud-based provisioning of IT work environments in the Workplace as a Service format.

This is based on a special evaluation of the results of a study published by PAC in Q4 2013, "Future Workplace in Germany" (Future Workplace in Deutschland), for large enterprises employing at least 1,000 people in Germany.

Section 3

- looks initially at the opportunities and challenges involved in the Workplace as a Service concept.
- It goes on to discuss criteria for selecting solutions and providers.
- Finally, PAC presents the T-Systems Dynamic Workplace solution and explains its special features.

A short summary rounds off the analysis.
1. BACKGROUND

1.1 The changing world of work produces immense need for modernization

Workplace modernization has priority in 1 in 2 companies

The Future Workplace in Germany study, which was published by PAC in November 2013, produced clear results. Today, over 80 percent of Germany’s large enterprises have already placed the modernization of equipment and operations in IT work environments on their agendas. 50 percent of IT managers even give workplace modernization high to top priority.

This trend comes as no surprise since it is the result of massive transformation in our business world and, associated with it, of enhanced requirements for employees’ IT work environments.

Future Workplace in Germany study and special evaluation

The analyses in this section are based on a special evaluation of the Future Workplace in Germany study. The study was developed by PAC with the backing of several sponsors, including T-Systems, and published in October 2013. It can be downloaded free of charge from https://www.pac-online.com/future-workplace-deutschland-2013-strategien-ziele-handlungsbedarf.

During compilation of this study, over 240 ICT managers in German companies were interviewed. The special evaluation was based on statements made by interviewees from companies employing 1,000 and more people in Germany.
Spotlight on the workplace as knowledge work gains importance

One of the key triggers of this development is the shift away from a traditional industrial society toward the knowledge society which is gradually taking shape, above all in advanced industrial countries like Germany. While routine work is automated or moved out to low-wage countries, knowledge-intensive activities are increasing – and not only in departments that traditionally have a large proportion of knowledge workers. In fact, the intensity of knowledge has risen significantly across all business areas, from office management and traditional administration units through to sales and marketing departments.

Development of employment by knowledge intensity in business sectors in Germany 1995 to 2006

Employees today, for example, spend most of their time working on complex issues for which there are no pre-defined routines. Instead, more and more work is being handled in projects and by teams. As a result, the productivity and innovation capacity of business enterprises depends to a greater extent than before on the degree to which they succeed in winning the "creative minds" they need and in providing them with optimal support in the performance of their duties. The design of the IT workplace environment is one of the critical factors for success.

As knowledge and project work(ers) become(s) more important, new requirements emerge with regard to the design of IT workplace environments and must be addressed by IT managers as the goals of workplace modernization.
Exchange and networking become business critical

Knowledge stored solely in the heads of company staff is worthless for the company. It has to flow in order to put companies in motion. If they are to provide their knowledge workers with optimal support, they must ensure that the knowledge workers can network and exchange know-how effectively and that knowledge work and traditional processes can interoperate. To do so, they need the latest tools. 75 percent of IT managers interviewed by PAC consider workplace modernization to be necessary in order to support more productive forms of collaboration.
Flexible and mobile work environments are gaining importance

Unlike traditional industrial work, knowledge work is not generally tied to time or place. This makes it possible for employees to perform their work at different locations depending on individual needs - in a home office, on a customer's site or when on the move. Companies would do well to support flexible work concepts of this nature. They make it possible to improve employee satisfaction (work/life balance) and, at the same time, to increase their productivity. Hand in hand with this, employees need to be more mobile.

The IT work environment is no longer confined to a traditional office workplace. 70 percent of large enterprises already give their employees the option of working at home - a tendency that is rising. At the same time, the number of employees who work on the move using company or private devices is also on the increase.

And how do you think the percentage of employees working in the following workplace environments will develop over the next two to three years?

- Fall sharply
- Rise sharply
- Fall slightly
- Rise slightly

<table>
<thead>
<tr>
<th>Workplace Environment</th>
<th>Fall sharply</th>
<th>Rise sharply</th>
<th>Fall slightly</th>
<th>Rise slightly</th>
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<tr>
<td>Mobile on private devices</td>
<td>0</td>
<td>41</td>
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<td>28</td>
</tr>
</tbody>
</table>

Percentage (weighted) of all companies with at least 1,000 employees, n = 57

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Designing work environments to meet employee needs is critical to success

Knowledge work is individual and cannot - or can only to a slight degree – be defined on the basis of traditional processes. Given this situation, companies can only improve their productivity and innovation capacity if IT workplace environments are tailored optimally to the individual needs of employees and their specific roles.

In the case of conventional industrial workplaces, it has long been taken for granted that design must be harmonized with workers’ needs. Vast sums have been invested to improve layouts in order to accelerate processes and cut costs.

In knowledge work, however, gearing workplace configurations to demand tends to be the exception rather than the rule. Two thirds of large enterprises today have not prepared for providing staff with adequate support for their individual roles.

At the same time, appropriate workplace environment design does not mean that enterprises have to ignore all standards – and the possibilities associated with them for quality assurance and cost-cutting. On the contrary, standardized modules represent the basis for role-based support in IT workplace environments. It is vital to provide employees with the technology and services (from the standard building kit) they need to play their individual roles.
1.2 Lightning technology development takes IT by surprise

Dramatic rise in diversity of available applications and technologies
The enhanced requirements for equipment and operation of IT workplace environments correspond to the growing array of available technology and applications. For instance, IT work environments no longer simply comprise a conventional office PC with Office and e-mail and a standard telephone beside it.

They now also include:

- New communication options through chats, web and videoconferencing
- New applications and services that support collaboration, e.g., via social network services and applications which enable staff to collaborate on documents
- New (mobile) device types such as smartphones and tablets, even convertibles, etc., with different operating systems like iOS, Windows, BlackBerry or Android
- An increasing range of expert and process applications which are provisioned over the Internet or public app stores.

IT consumerization is putting more pressure on the IT department
The pressure on IT staff to provide the broad array of new tools is immense, especially since many employees are already familiar with most of these technologies and their potential from using them in their home environment. Hence they are insistent in their demand to use these modern tools in the business environment.

In fact, their demands extend further still. Employees have already been working "from the cloud" for some time in their home environments and are familiar with the advantages this offers in terms of flexibility and reaction speed. It is obvious to them that it should be possible to adjust the business IT just as easily and quickly as their private equipment. In the course of what is known as the "IT consumerization" trend, employee tolerance of lengthy IT approval processes and complex procurement procedures, and their acceptance of restrictions resulting from security and compliance policies have greatly decreased.
Workplace modernization is forcing restructuring
However, the “new diversity” in the technology involves not only productivity advantages but also, in the traditional provisioning format, major security risks and additional costs for the IT.

- **Acquisition costs**: The consequence of equipping company staff with a stream of new devices and applications is a significant increase in procurement and licensing costs.

- **Administration costs**: The broad array of applications must be managed as well as provisioned. The cost of doing so is increasing considerably – especially when applications are distributed and installed on users’ end devices.

- **Security risks**: Security risks naturally increase along with the rising numbers and diversity of mobile devices and applications and the expansion of work environments to include the home office and mobile workplaces. The same applies to the cost involved in observing compliance and security policies.

- **Application integration costs**: The large number of new applications has not only to be installed but also integrated with each other and with the backend. This is the only way to guarantee maximum effectiveness and usability as well as efficient administration.

- **Cost of guaranteeing data consistency**: Not only the applications but also the data they require and process have to be migrated and potential conflicts avoided. The cost of doing so is considerable, especially when new tools and services (from different providers) can be subscribed to ad hoc at any time.

- **Investment risks**: There is no indication at present that the lightning technology development in the workplace environment is slowing down or coming to an end. With ever shorter device and application lifecycles, the investment risk also increases.
IT in a cost trap, budget pressure remains unchanged

Despite the dramatic rise in requirements for configuration and operation of IT workplace environments, fewer than 1 in 10 IT managers can expect their budgets to rise to any significant extent. On the contrary, the majority of IT managers (55 percent) assume that IT budgets for configuration and operation of IT workplace environments will remain constant or even decline over the next two to three years.

Although slightly more than one third anticipate a slight rise in IT expenditure in the workplace environment, it is doubtful whether this rise will be sufficient to compensate the immense extra cost of acquisition, administration and protection of a stream of new devices and applications.
1.3 Central, cloud-based provisioning is the answer

IT managers in a dilemma
This paper makes it clear that IT managers face a dilemma in workplace modernization. On the one hand, they have to meet the growing and fully understandable requirements of their business. Although a wide range of new technologies is available – and this is the other side of the coin – their usage involves significantly higher cost and major risks if the IT is provisioned conventionally. IT managers cannot, however, count on a suitable increase in their IT budgets which could help meet these challenges.

On the other hand, it is also clear that IT departments cannot afford to sit it out (again) or to put their heads in the sand. This latter approach would result in devices and applications being implemented without the IT experts being involved. Naturally it is virtually impossible to impose prohibitions or strict regulations on employees who are already using the new technologies in their home environments and can obtain new services over the Internet – at a mouseclick as it were. Unrestrained acquisition would simply compound the risks and extra costs described above and can only be contained if the IT offers equal or better alternatives.

Equally risky to putting their heads in the sand would simply be to respond to requests from the business units and decide ad hoc on acquisitions (without a strategy).

This sounds logical in theory. However, in practice decisions on the configuration of IT workplace environments are taken ad hoc in 1 in 3 of the large business enterprises in Germany.
Many workplace strategies have still not passed the planning or discussion stage

Admittedly, the development and implementation of a workplace strategy is a vastly complex process for IT managers. The dilemma they face, with a succession of new technologies on the one hand and rising costs and risks on the other, can barely be resolved with a conventional approach in view of continuing cost pressures.

It is therefore understandable that the development of workplace strategies has, in many places, not yet passed the planning or discussion stages.

Workplace as a Service approaches are vital

From PAC’s viewpoint, the dilemma outlined in this paper can only be resolved if IT workplace environment provisioning is completely re-conceptualized. Successful workplace modernization can only succeed if, at the same time, the costs of configuration and operation (per application) are lowered and the additional security vulnerabilities effectively resolved. However, conventional local application provisioning on employees’ devices does not make it possible to achieve the savings required for modernization or to minimize the security risks associated with it.
This can only succeed if all the applications relevant to work environments are highly consolidated via a central platform in the cloud and provisioned "as a Service" with maximum automation. Cloud-based provisioning of IT work environments "as a Service" is also the basis for meeting the enhanced expectations of employees with regard to flexibility and response speed, resulting from IT consumerization.

PAC therefore anticipates that Workplace as a Service concepts, whose opportunities and challenges are discussed in the next section, will gain vastly in importance over the next few years.
2. WORKPLACE AS A SERVICE

2.1 Opportunities and value promise

The opportunities of central cloud-based application provisioning for IT workplace environments in comparison with conventional local distribution and administration are immediately obvious.

A universal standard guarantees high efficiency, security and agility

Ultimately, Workplace as a Service establishes a universal standard for workplace application provisioning, thereby paving the way for greater efficiency and more security and agility.

Increased efficiency and cost savings

If applications are implemented on a central platform, the cost of rollout and administration can be significantly reduced. There is virtually no longer any need for local installation. Even if a thin client fails, a replacement device is simply supplied and "reloaded" via the central platform. If this is combined with systematic implementation of self-service concepts (e.g., automated password reset), support work can be almost fully automated and the quantity of help desk tickets greatly reduced.

Such cost advantages apply first and foremost where a dramatic rise occurs in the number and diversity of applications requiring support – as discussed in the previous paragraph.

There are, however, additional ways of saving money. If applications are accessed online via a central platform, the device landscape can be consolidated without having to suffer major restrictions with regard to mobility. Today, for example, many employees are equipped with costly laptops (in addition to tablets and smartphones) simply so that they can access Office or specialist applications from time to time when they are away from the office. It would be possible to cut these costs significantly if these applications could be used online with tablets or with the far less costly thin clients.

And, naturally, it is easier to implement Bring Your Own scenarios if applications and data are provisioned from a central point. This is not just about the enterprise-wide implementation of BYOC/BYOD strategies, which offers clear advantages in terms of acquisition and support costs but is not yet widespread in Germany (partly for tax reasons). The lives, or rather the work, of employees who have not yet been equipped with company devices, could be greatly simplified if they were able to access
applications for time recording or vacation applications online (with private computers or mobile devices). The extra costs involved would be relatively low.

Additional efficiency and cost advantages can be leveraged by **consolidating the server infrastructure**. The centralized homogeneous infrastructure on which Workplace as a Service is based leads to the disappearance of decentralized server systems. Fewer locations have to be operated. Standardized server environments also offer a higher degree of provisioning efficiency, e.g., through automated provisioning of server capacities.

Last but not least, central provisioning, involving the demand-driven provisioning of server capacities and devices, naturally reduces not only the cost of hardware but also **energy costs**.

**Guaranteeing security standards**
In view of increasing numbers of mobile devices, central application provisioning and central data storage would appear absolutely vital in order to maintain a certain degree of **control**. Understandably, data and applications are far safer stored in a secure data center than on the devices of individual users.

This also makes it far easier to implement security standards, e.g., access rules for different users. Central cloud-based provisioning naturally improves **transparency** – both in terms of application and device usage and in the implementation of administration and security standards.

**Improving agility**
The central provisioning of workplace applications "as a Service" offers advantages not only in terms of costs and security but also helps improve overall IT agility. New applications can be implemented and new staff integrated in the enterprise IT almost at a mouseclick.

Last but not least, user-centric and role-based concepts for IT application provisioning are far easier to implement. They focus on employees in their individual roles – irrespective of the devices they use and the locations in which they want to use an application.
2.2 Challenges

Many technical constraints are already eliminated

In view of the many obvious advantages, it might surprise us that Workplace as a Service concepts did not catch on long ago. One of the main reasons is that the virtualization technologies they needed only recently reached maturity. The idea, for example, of a Virtual Desktop Infrastructure (VDI) is not new and has been used for basic application scenarios, e.g., to provide less sophisticated applications for freelancers or traditional ‘terminal users’ for a long time. By contrast, efficient protocols which enable trouble-free usage even of sophisticated applications, e.g., real-time communication, only became available recently.

High licensing costs and/or unsuitable licensing models hamper business case

But even if technical maturity is no longer a major barrier, the implementation of Workplace as a Service concepts is still a complex process and a business case is not automatically guaranteed. For instance, the numerous possibilities for saving money may be partly offset by the potentially higher licensing costs for the virtualization software. Added to this, many software providers are still hesitant to adapt their licensing models for cloud-based provisioning.

Last but not least, enterprises must establish the conditions required for optimal usability of the online applications. It could, for instance, be necessary to upgrade on the connectivity side (bandwidth, WiFi, etc.) in order to guarantee higher solution availability. Important at this point is that the chosen solution makes as effective use of the bandwidths as possible in order to guarantee that it is cost-effective. In this area, there are some vast differences in the client virtualization technologies used.

“A little virtualization” usually costs a lot more

In view of the challenges outlined here, a reliable business case and payback are only guaranteed if the entire work environment is provisioned from a central platform and, at the same time, local servers and local data retention are phased out and all service processes automated as far as possible. Optimal conditions can only be achieved in an infrastructure that is optimized in its entirety.

In contrast, “a little virtualization” seldom leads to success, as is shown by experiences gained in numerous projects. Ultimately, data and directory structures must be replicated and/or synchronized between virtualized and non-virtualized (on premise) environments in order to guarantee smooth infrastructure operations. The costs involved may soon
They are even higher if only part of the workplace infrastructure is virtually provisioned.

2.3 Relevance of external offers

Setting up an end-to-end Workplace as a Service solution sounds simple in theory but is highly complex in practice and involves a considerable workload. With this in mind, IT managers should consider carefully whether they are in a position to implement and operate Workplace as a Service concepts themselves, i.e., whether it is worth implementing them with their own resources. External providers who are specialized in the design of such solutions and can generate economies of scale by operating Workplace as a Service platforms for several customers would appear to have better chances of doing so.

The demand for external support is growing

For enterprises that obtain support for devices and their workplace infrastructure from external providers, external operation would seem to be the obvious choice. In view of the growing complexity in the workplace environment, more of them are likely to choose this option in the coming years, from PAC's viewpoint.

The results of the Future Workplace in Germany study confirm this trend. It states that one in three of today’s large enterprises (with over 1,000 employees) engage external providers to support their devices and workplace applications, while one in five companies actually has its entire IT workplace environment managed by external staff. According to the plans of IT managers, this figure is set to rise significantly in the next 1 to 2 years, namely by around 10 percentage points – representing growth of 30 to 50 percent in the customer base.
Many partial solutions, all-in Workplace as a Service offers are still rare

Individual applications for IT workplace environments such as e-mail/groupware and various collaboration applications have been available for some years as hosting or cloud solutions from outsourcing providers in the workplace segment or from cloud specialists. However, these are usually simply an add-on to conventional IT work environment provisioning. In contrast, all-in Workplace as a Service offers from external providers’ private or public clouds are far less frequently found, a situation that PAC expects to change over the coming months.
2.4 Criteria for selecting solutions and providers

The choice of solution and provider is critical to success, above all in the present early phase of the market. A mandatory requirement for doing so is a comprehensive inventory of the technologies in use along with a workplace strategy that anticipates future requirements. On this basis, the solution’s function range and implementability as well as the (complementary) service offer and expertise of the provider should be subjected to a critical review. The next sections offer the first general starting points for doing so.

Device types and operating systems

The Workplace as a Service solution should naturally offer access for all device types and operating systems used in the company. However, requirements go beyond this. The following questions, for example, must be asked:

- Does the solution offer end-to-end device management – including mobile devices and the operating systems used in the company?
- Is a standard view of the applications and adequate application usability guaranteed across different device types and operating systems?
- How is uninterrupted application usage guaranteed during changes to devices or the workplace environment?

Applications and business scenarios

As discussed in the previous section, “a little virtualization” rarely produces the desired results. In order to leverage the full potential of a Workplace as a Service concept, the solution should integrate as many of the applications used in the IT workplace environment as possible. In this context, the following question must be asked:

- To what extent does the solution support the integration of present and future applications and their interoperation?
- Are there pre-defined solution modules which help to accelerate application integration and to lower the cost of their operation?

User-centric provisioning and emulation of business scenarios

The provisioning of applications to meet the needs of individual employees and – in conjunction with this – support for all the relevant application scenarios in the company
are the prerequisite for exploiting cost-cutting potential and improving agility. In this context, these questions must be asked:

- Does the solution offer sufficient modularity and suitable management tools in order to support demand-based application provisioning?
- Does the solution also offer possibilities for offline usage when needed by individual users?

Management and administration
It goes without saying that the Workplace as a Service solution should provide IT administrators with adequate management and administration tools. However, the following questions must be asked regarding the exploitation of savings potential and improvement of agility:

- To what extent does the solution offer self-service routines, and are IMAC tasks automated so that the cost-cutting potential can be exploited?
- Does the solution offer an option for provisioning and administration of mobile applications, e.g., a mobile app store, as an integral component?
- Does the solution also offer a delegated administration option that allows management staff or administrators to assume responsibility for individual activities?

Function range and usability of self-service portals
Self-service portals are not a useful add-on but an integral element and central success factor in all-inclusive Workplace as a Service offers. Their performance and acceptance among a company's employees has a major influence on the possibility to reduce administration and support costs in the long term. In this context the following must be subjected to critical review:

- What services can be offered and provisioned via the portals? Does their offer portfolio only cover application and technology provisioning, or can relevant support work as well as other order procedures and/or processes – from orders for additional office equipment and services through to vacation applications – be integrated as well?
- To what extent does the solution support emulation of approval workflows and role-based authorization concepts through to the initiation of related processes?
(e.g., software installation on new devices after the order process has been triggered)?

- How easy is it to use the portal from an employee viewpoint, is high usability guaranteed?

Security, availability and compliance
In comparison with conventional provisioning, the Workplace as a Service concept offers major security advantages, thanks to central application provisioning. However, these can only be leveraged if various requirements are met. The following questions must be asked (examples):

- To what degree are data protection and integrity guaranteed at the providers’ data centers?
- Does the solution guarantee adequate compliance with the company’s security policies and legal regulations?
- What measures, mechanisms and technologies are offered to guarantee sufficient protection against access by unauthorized third parties? What mechanisms exist, for example, for using data on untrusted devices?
- How is solution availability/ resilience safeguarded, to what extent is availability guaranteed through SLAs?

Provider competency and solution portfolio
In the final count, implementation of a Workplace as a Service concept means a complete move away from traditional forms of IT workplace environment provisioning. What is required is an all-inclusive view of workplace consolidation, which – although the TCO aspect is taken into account in many other areas – has only just begun to assert itself in this segment. Selection of a partner with the relevant implementation experience is therefore particularly important here.

Companies should scrutinize the degree to which a provider is in a position to support the entire workplace consolidation process (from planning through to operation) – and thereby to guarantee the success of the entire solution on the basis of its expertise and appropriate service offers.

Critical questions in this context include:
To what extent is the Workplace as a Service solution embedded in a comprehensive workplace management & transformation (or migration) offer?

What consulting services does the provider offer to support smooth rollout of the Workplace as a Service solution?

What experiences and expertise does the provider offer in related areas, e.g., application integration, connectivity, etc.?
Dynamic Workplace from T-Systems

T-Systems is not only one of the leading providers of workplace management & transformation services in the German market but is also rated by PAC as one of the pioneers in implementation of cloud-based solutions for IT workplace environments. Under its Dynamic Workplace brand, T-Systems currently offers one of the most comprehensive and mature Workplace as a Service solutions for large enterprises.

This appraisal is based on a detailed review of the solution and comparable offers from competitors, with information including that obtained during the Workplace Management & Transformation in Germany RADAR analysis. Creation of the RADAR was based on evaluation and comparison of the offers and expertise of ten leading providers of workplace management and transformation solutions in the German market. The results of the analysis conducted independently by PAC confirm T-Systems as the frontrunner in this field.

PAC gave the workplace management & transformation portfolio from T-Systems a best-in-class rating. The key factors leading to the second highest grade included the expertise and offers made in conjunction with provisioning of IT workplace environments “as a Service.”

The following sections give a brief description of the special features of the T-Systems solution in relation to the challenges outlined in the previous sections.
Focus and scope: complete redesign of workplace management

According to T-Systems, the design of its solution is based on “more than 10 years of a proven target architecture concept.” The focus is placed on the complete redesign of workplace management with the object of provisioning all applications – from Office and e-mail, specialist and process applications through to real-time communication applications – “as a Service” via a central platform. The solution’s primary goal is to significantly reduce the cost of provisioning and administration of state-of-the-art IT workplace environments and, at the same time, to improve agility.

The offer is seamlessly embedded in the overall T-Systems portfolio, so that customers stand to benefit from synergies in concept design, application go live/integration through to device management and service desk operations. As a telecommunications provider, T-Systems can, in addition, guarantee to meet the connectivity requirements for cloud operations.

Customers also profit from the provider’s vast project experience in the desktop infrastructure segment. T-Systems can, for instance, rely on over 8,500 available client application templates during the migration phase – and thus greatly accelerate solution rollout. Additional project learnings and best practices are integrated in the dedicated consulting packages which T-Systems offers for the planning and ramp-up phases.

User centricity and modularization support demand-based provisioning

The fully modular structure of the T-Systems solution makes it possible to provision applications to suit the different roles of individual employees.

- The basic Core Package supports all users with online access to all role-related applications. The services provided enable employees to work with any device,
anywhere, and at the same time guarantee a high level of security. The very aggressively priced core package therefore covers many application scenarios in the workplace environment, including BYO. In the case of enhanced needs, e.g., for a mobile service or offline usage, additional services can be obtained to suit individual roles and requirement profiles.

- An Offline Package is available for mobile employees with laptops or Windows tablets, which guarantees application usage in offline mode and a smooth changeover between different workplace environments (session roaming), and also supports convenient user data synchronization.

Besides this, the T-Systems solution supports implementation of access and/or usage rules for every individual user. In other words, it is possible to define precisely the applications that each employee may use and the data they may access via profile management.

**High level of automation is the basis for efficient administration**

When designing the solution, T-Systems placed special emphasis on making service process automation as complete and systematic as possible.

- Conventional IMAC tasks are emulated in self-service routines and automated workflows.

- Applications are automatically provisioned via an Enterprise Services catalog.

- Additional management and administration routines, e.g., for application and license management, come with the Core Package.

**Self-service portal is a core element of the end-to-end workplace solution**

A **self-service portal** is an integral part of the solution and acts as the central interface between employees and platform.

- It is designed so that order procedures and related processes in conjunction with the provisioning of IT workplace environments are triggered and implemented within the shortest possible space of time. It uses numerous automated routines.

- The portal can be extended flexibly, allowing additional products and services to be ordered. In this way it is possible to control the provisioning and maintenance of end-to-end workplace environments incl. office equipment and the associated services via the portal. At the same time, business processes can be implemented via the portal, e.g., time recording or vacation applications.
Complex approval, order and delivery processes can be set up for individual roles. If several suppliers are registered for a specific service, for example, their interaction and the sequence of events can actually be controlled via the self-service portal.

**Security and availability – high standards guaranteed**

The solution is provisioned as a private cloud (i.e., a multi-instance solution) and can be hosted on the customer's premises (in its data center) as well as at a Deutsche Telekom data center – currently either in Germany, Singapore or the USA. This meets one of the key basic requirements of highly demanding German companies with regard to data security and, at the same time, supports global solution rollout. For 2015 T-Systems has announced additional solution provisioning from local T-Systems computing centers in Spain, the UK, Brazil and South Africa.

Also of note is that T-Systems already guarantees 99.90 percent availability via SLAs, with another improvement to 99.95 percent already announced for next year, when it will be available as an add-on module.

The solution also complies with or improves on requirements stipulated by general standards on other issues relevant to security (devices, access, and identity management & authentication). For example, employee authentication takes place via a password sent to them in a text message (SMS) – i.e., a process which is already widely used in the banking sector. T-Systems also offers the option of smartcard-based authentication. A five-factor authentication process is planned for next year.

**Solution flexibility enhancement planned**

The first version of the solution provides for all applications to be provisioned from the Deutsche Telekom private cloud. In view of early demand, this restriction is understandable but will gradually be eliminated, according to the T-Systems roadmap. As of the end of 2014, T-Systems plans to support hybrid provisioning models, while the implementation of multi-cloud strategies has been announced for 2015.

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3. SUMMARY AND CONCLUSION

Central cloud-based provisioning of IT workplace environments as Workplace as a Service gives companies the chance to resolve the dilemma outlined in section 2 – i.e., to guarantee high standards in administration and security despite the increase in the number of applications and stagnating budgets. "A little VDI" is not usually sufficient to reach the necessary savings targets.

In view of the challenges involved in implementation, a reliable business case with fast payback is only guaranteed if the Workplace as a Service concept is fully implemented throughout the enterprise. With their specialist know-how and possibility to generate economies of scale, external IT providers are usually more likely to be able to implement and operate solutions of this nature.

However, it is still early days in the market for external Workplace as a Service offers. Despite the fact that numerous individual applications for IT workplace environments have been on the market for a number of years, there are far fewer true end-to-end Workplace as a Service solutions. Besides this, these solutions vary to a major degree in their technical maturity and breadth of use.

From the viewpoint of PAC, one of the most comprehensive and mature Workplace as a Service solutions today is offered by T-Systems under its Dynamic Workplace brand. Unlike many of its rivals, the object of the T-Systems solution is to achieve a complete redesign in the area of IT workplace environment provisioning. Its aim is to provision all applications via a central private cloud hosted in local Telekom data centers – and in doing so to minimize the total cost of ownership (TCO) through end-to-end automation of the service processes associated with provisioning and management.

At the same time, thanks to its systematic user-centric and modular design, the solution supports demand-based provisioning for IT workplace environments. The solution is seamlessly embedded in the entire service portfolio, making it possible to provide companies with end-to-end support. During the implementation process, T-Systems can obviously draw on its experience and expertise as a leading provider of workplace management & transformation solutions.
About T-Systems

T-Systems is Deutsche Telekom's corporate customer arm. Drawing on a global infrastructure of data centers and networks, T-Systems operates information and communication technology (ICT) systems for multinational corporations and public sector institutions. On this basis, Deutsche Telekom's corporate customer arm provides integrated solutions for the networked future of business and society. Some 50,000 employees at T-Systems combine industry expertise with ICT innovations to add significant value to the digitization strategies and core business of customers all over the world. The corporate customers unit generated revenue of around 9.5 billion euros in the 2013 financial year.

For more information, visit www.t-systems.com

About Pierre Audoin Consultants

PAC supplies focused and objective answers to the growth challenges facing players in the information and communications technology (ICT) market, from strategy through to ultimate implementation.

We support ICT providers with quantitative and qualitative market analyses as well as strategic and operational consulting. We advise CIOs and financial investors in their assessment of ICT providers and solutions, and support their investment decisions. Public organizations and associations rely on our analyses and recommendations as the basis for crafting ICT policies.

PAC was founded in 1976 and, in June 2014, became a member of the CXP Group, the leading European market analysis and consulting firm for software and IT services.

For more information visit www.pac-online.com