



Universal Directory. Create one world.

Introduction & Contents

Humans don't like change, especially when it involves difficulty. The inertia of the status quo is powerful. But what if it was that status quo which created many of your difficulties, but you simply weren't aware of the fact? Equally what if change was then made really easy? In this eBook we aim to make you aware of the role directories can play in modern businesses and how their proliferation creates difficulties for workforces and customers alike. Then how Okta can make change easy, by joining or consolidating these directories to create one world, with Universal Directory.



How identity powers the modern business universe.



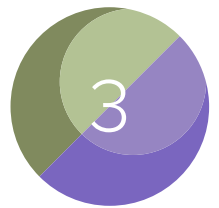
The traditional cost and complexity of linking ageing worlds.



The ageing worlds that house digital identity.



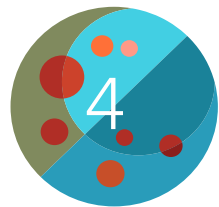
Collaborating with ease to create one world for identity.



The workforce business pains multiplied by where identity lives.



Organisations operating one world for identity.



The customer business pains multiplied by where identity lives.



How one world for identity opens up the business universe.

How identity powers the modern business universe.

Whether your focus is on customer experience, workforce productivity or both, nothing can function in a modern business without digital identities. Identities are collections of data that identify who we are, then link to associated information on our individual entitlements. Digital fingerprints that keep the wheels of business both secure through authentication and turning through authorisation.

Identities are the modern keys to the IT kingdom for both worker productivity and customer satisfaction.

Given that managing identities is business critical, they should concern everyone within an organisation from IT practitioners up to boardroom executives. Companies often claim they would be nothing without their people or customers. Now that's equally true of those identities and that related data. Without it, the business universe would simply grind to a halt, as they are the keys to all of the apps which we use to do our jobs.



To make matters more complicated, we all acquire multiple identities over time in the form of different usernames, passwords and related personalised data. Whereas a worker twenty years ago may have had just one username identity and password, now IT manages dozens or more individual credentials for SaaS platforms across multiple devices.

Being human, we inevitably get confused managing our own multiple identities, forgetting usernames and passwords, locking us out from vital business functions and wasting valuable IT time, as they reset the security measures that surround and protect our identities.

Customers have hundreds of identities across companies they've interacted with. Often within a single company they have multiple identities as they have been forced to register multiple times over the years to access different aspects of the business or brand.

Take for example, a financial services organisation handling everything from different insurances, to savings, to pensions and investments. Each service might result in the user's registration and creation of a new customer identity. Give a thought to how many digital identities you might have accumulated both as an employee and a customer. Ever wonder where those identities live or if this disjointed experience could be improved?

Directories



Worlds of IT pain

Universal Directory



World of IT clarity

The ageing worlds that house digital identity.

Having established the importance of identity to the successful running of a modern business universe, you might wonder where such critical information is housed. The answer is in directories. You might hear the associated terms, domains or forests, but for the purposes of clarity and simplicity, we'll call them directories.

Directories date to a pre-cloud era when all technology was hosted on-premises. The most commonplace of all these directories, was Microsoft's Active Directory.

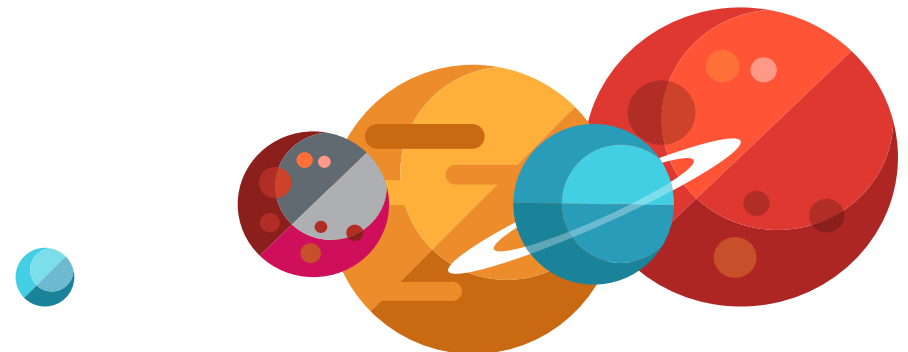
Created back in 2000, Active Directory is a directory services solution that was designed exclusively for on-premises networks of Windows-based IT resources.

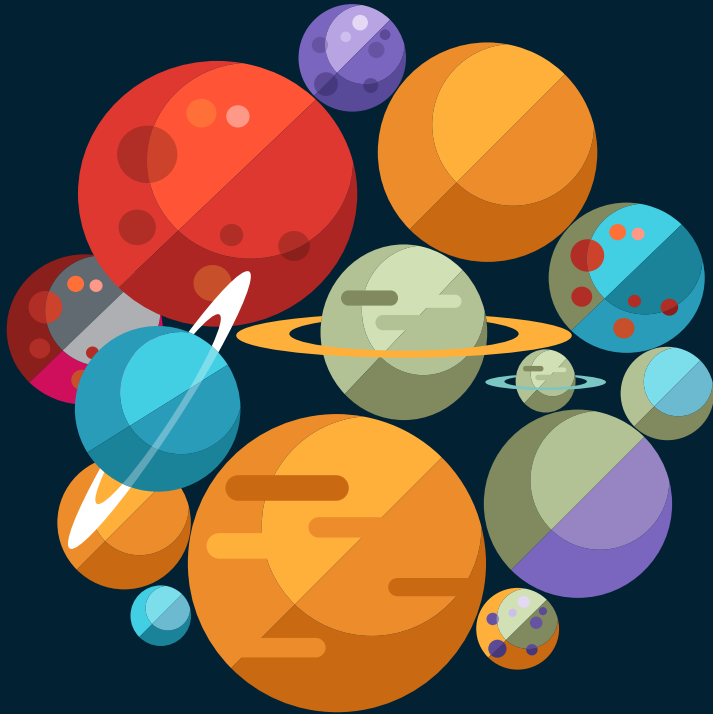
Different brands, offices and business units across different geographies within an organisation often spawned their own individual directories as they were opened, creating silos of identity data within buildings and across organisations. That's before we consider the multiplication of directories caused by mergers and acquisitions over time.

Since the mid-2000s IT networks have evolved to include cloud servers and SaaS applications, creating hybrid IT environments, split between on premises servers and cloud servers. Cloud servers and SaaS services require their own directories and subsequent user identities, which then exist beyond the direct control of Active Directory, due to the fact that it was originally designed only to operate on premises.

Today many businesses are struggling with the same dilemma. How to unify, manage, and automate identity access and security, across a sprawling hybrid IT environment. Progress is supposed to simplify things, whereas due to the advent of the cloud and digital devices, IT has never been more complex.

With the mix of on premises, cloud, and hybrid applications accessed by employees, partners, contractors, and suppliers across unknown, known and managed devices, providing easy yet secure user access poses a major challenge. Especially in highly regulated industries. But what business pains do the ageing worlds of disjointed directories actually cause?





**Basic IT requests taking too long?
Multiple directories are probably behaving
like multiple worlds. IT made difficult.**



**Okta Universal Directory
creates one world, in a day, so you can
manage your IT from a single central hub.
Change made easy.**



The workforce business pains multiplied by where identity lives.

Anyone who has ever experienced back problems will know that the greatest pain often manifests itself far from where the source of the problem lies, in the spine. The same is true in business, where directories are the backbone of every organisation, but the pain they can ultimately cause manifests itself in every business area from revenue to reputation.

At the simplest level, modern businesses run on applications, mostly provisioned by IT. *(We say mostly, because we acknowledge that business apps are often managed by the business too when IT simply don't have the time or resources to keep up. A situation Universal Directory aims to remedy by reimbursing IT teams with the time directories traditionally consume. But more of that later.)*

Apps can only be provisioned and accessed based on knowing your identity. Information that's housed in directories. The greater the complexity of the directory structure, the greater the task to connect, integrate, access, provision, and secure the necessary apps for a business workforce. Disjointed directories are the source of much business IT pain.

Every individual physical site, business unit, and brand within your organisation most likely has its own legacy directory, directory forest or domain, with an identity provider on top. Multiply that number then by each country you operate in. Imagine then that as an executive in that company you need to operate across all those countries, offices, business units and brands. Your identity will need to exist in all those individual directories. Let's say there's ten (although we regularly see incidences of over 100).

Now let's take a common life event, like a change of surname because of marriage or divorce. For IT to make that name change in a single directory might take 20-30 minutes. They then might need to go into the downstream apps and update the name change there too in every single one, as it won't automatically pull through. If there's ten apps, an estimate for a modern business, then that's 200-300 minutes of IT. This is just for one directory. If the executive travels and consumes IT services within the 10 directories we mentioned earlier, this effort could be multiplied by every separate directory.

To date, the time taken to carry out this IT administration has just been considered the acceptable cost of doing business.

Either IT would soak up the pain of this kind of work, or simply declare that it was too time intensive to undertake. Neither being a great advert for IT's ability to create progress and efficiencies. Some businesses use scripts or even connectors to automate these types of actions and avoid some of the manual effort, but these integrations take weeks to months to build. Often they have to be done on top of every single directory forest as these groups are stand alone. A name change is a relatively simple admin request, so imagine how the time taken to carry out more complex IT procedures across disjointed directories quickly snowballs. So, the next time you wonder why it seems to take IT so long to carry out what seems like a simple request – consider the multiplier effect of your organisation's directories.

The more senior you are, the more cross-functional and mobile you are likely to be; the more you need to collaborate between teams or business units, so the more directories your identity will need to be in. Consequently, the more time it will take to carry out administrative activities like password resets or app provisioning. Disjointed directories are not simply a middle management IT issue, but one that pretty quickly reaches and affects the top executives in a company. In fact, the more senior you are, the more directories are likely to affect your potential productivity.

You probably never knew it, but the fact your identity is housed across multiple, disjointed directories, is probably the cause of most of the IT pains you face.

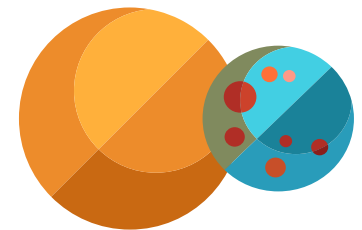
One of the reasons humans suffer so much from back problems is that our ancestor's skeletons were originally horizontally load bearing, as they walked on all fours. Our desire to walk upright and travel further outpaced our spinal evolution, greatly increasing the pressures on our backbones as we became predominantly vertical travellers. The same is true of directories, the backbones of businesses, which were created in an on-premises, pre-cloud era. Our desire and need now to work anywhere exceeds the limitations of these ageing structures. As our business universes have expanded so have the pains we face, and the proliferation of disjointed directories is the primary cause.

Acquiring more directories, acquires more pain.

One of the most common ways businesses grow is through mergers & acquisitions (M&As). We've already discussed the complexity of disjointed directories that potentially exist within one organisation. Now imagine you've acquired and are about to merge with another organisation and the plethora of directories they often already operate. Multiple IT worlds to merge together, or not. Because that's the choice that businesses face. You either integrate the IT worlds and all those disjointed directories as part of a significant, costly project that you may not be equipped to staff, or more commonly, absorb the continual pain and run them as standalone IT systems with double the IT costs. Not a great choice really is it?

After M&A you want everyone to feel unified going forwards as one organisation. Your executives certainly need access across all those newly acquired directories. So much for those efficiencies you were hoping to achieve through M&A. It's an IT nightmare and an important reason most M&As don't deliver anywhere near their potential efficiencies.

In Section Five we'll explore the traditional costs and complexity of linking directories before looking at how Universal Directory offers a much simpler alternative in Section Six. In the meantime, if customers are any part of your business, we'd recommend reading Section Four to understand how directories could be diminishing your customer experience.





If running parallel IT systems isn't alien to you, perhaps your M&As aren't delivering the efficiencies you hoped for.



Okta Universal Directory
creates one world, in a day, without even
uttering the word consultancy.
Change made easy.

The customer business pains multiplied by where identity lives.

We've looked at where identity lives internally within a business and the pains and frustrations which this can cause to workforces. Let's consider now the customers of these businesses. They have identities too – usernames, passwords and personal information. Guess where that's all stored? Correct, directories, or customer databases which are effectively directories in many respects.

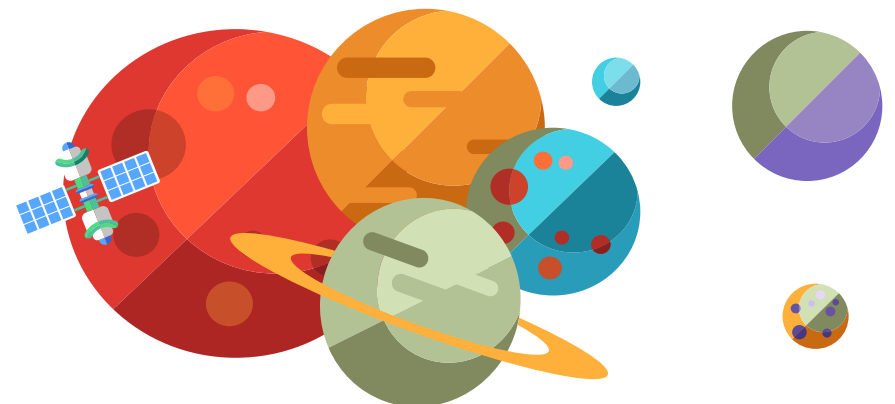
The pains of customer directories manifest themselves both internally and externally in a business. Internally directories cause a lack of clear business insight into an individual customer's behaviour across a portfolio of products and services. Externally directories create a frustrating, disjointed customer experience from a business that appears like it should be seamlessly connected.

Let's deal with the internal pains first. Across a business, it's likely that IT have the identities of the customers for each product held in individual directories, as they were probably launched at different times over a period of many years.

Directories create information silos and with them, the inability to see in a single pane of glass which customers buy multiple products across a business portfolio and where the subsequent cross-sell, up-sell or tailored user journey revenue opportunities lie.

If a business can join up the customer identities in its disjointed directories, it can benefit from having a single view to automate upsell & cross sell campaigns. Utilising hooks into marketing automation systems to avoid the potential privacy risks from consent stored in multiple directories, leading to emails being inappropriately sent and potential fines incurred. Or to create personalised customer journeys, without the usual significant manual effort, driving revenue whilst increasing speed & efficiency.

But let's not forget the most important people here, the customers. The nature of directories also creates more direct pains for them too, in the form of multiple registrations and log-ins to what appears to be the same company's website. Continually having to register in long, antiquated forms and resupply your identity details doesn't create a sense of confidence in the business. Instead it creates friction that causes customers to end their sessions, directly impacting your sales.



The customer business pains multiplied by where identity lives. *(cont.)*

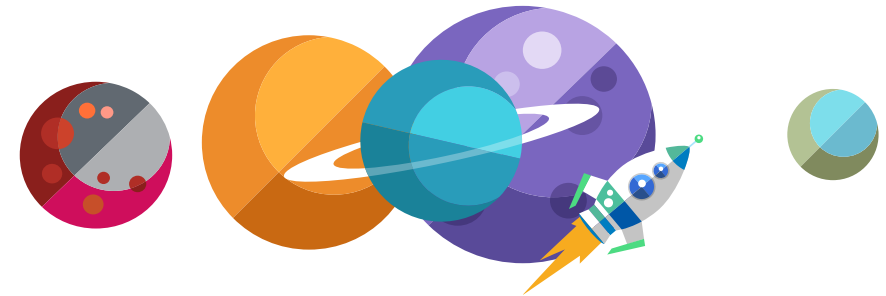
Amazon sets the popular standard of a frictionless customer experience which others must then try and match. Unfortunately for businesses, customer expectations are not defined or limited by vertical. If customers have had a frictionless experience with one brand, then all others will be judged in comparison.

Customers don't make allowances for legacy technology delivering poor, unconnected experiences. They just choose another brand to transact with, perhaps paying more because the experience is simpler and frictionless.

Customers don't need to show the patience or loyalty of workforces when facing IT-created pains, because nobody is paying them to endure it. Quite the opposite. They are paying for the privilege of a poor customer experience. So, they go elsewhere.

Amazon is a complex organisation with multiple business units, but it doesn't always have the lowest prices. It presents itself to customers as one entity and as such we expect that level of simplicity when interacting and transacting with any part of the brand, whatever the internal structures. Being a customer obsessed organisation, it delivers on this promise, setting the bar for everyone else and charging prices that understand we value ease as much as cost.

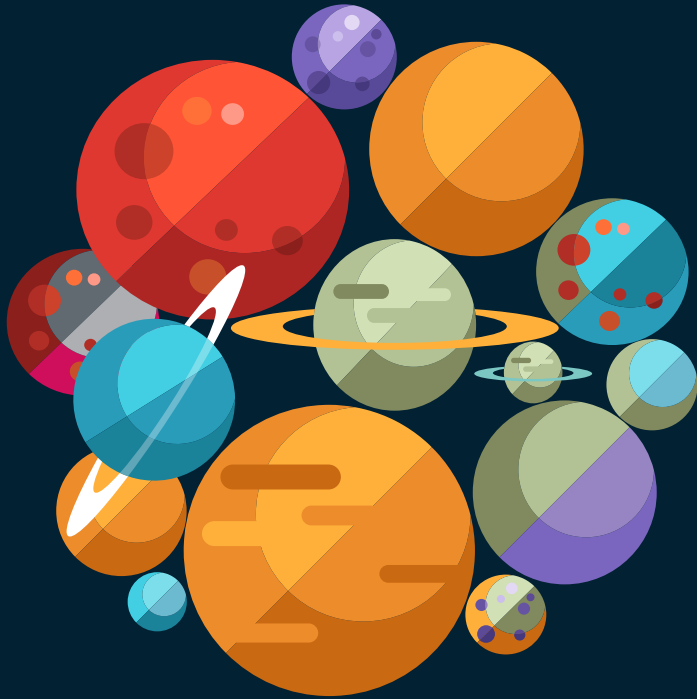
Cloud native challenger brands are appearing in almost every B2C vertical, unencumbered by legacy directory structures or the weight of IT architecture from multiple mergers and acquisitions. As the new generation of fully digital challenger banks are demonstrating, they deliver fast, seamless experiences fitting with the expectations of how modern customers want to interact and transact with brands.



Businesses weighed down with legacy directory systems cannot compete. Customers are not going to lower their expectations, so the choice is clear.

Evolve your directories to deliver a seamless, frictionless customer experience or watch your customers move to those who do.

Our own customer expectations also quickly migrate into the workplace, because we don't compartmentalise between the two. If we've had a great, frictionless experience in one place, it's only human nature to wonder why we can't have it in another. The answer is probably related to directories.



Multiple directories with multiple protocols, create multiple barriers to gaining customer insight.



Okta Universal Directory
creates one seamless world, where
information flows and insight appears.
Change made easy.

The traditional cost and complexity of linking ageing worlds.

Hopefully by this point we've established the critical roles and limitations of directories both internally and externally within a business organisation. Businesses can't function without directories as they host the identities of workers, partners and customers. But their rapid proliferation and siloed nature creates inefficiency, removes clarity, and increases the risks of compromising security.

It doesn't take a genius to reach the conclusion that in principle, fewer directories, or ideally one Universal Directory would be the optimal situation.

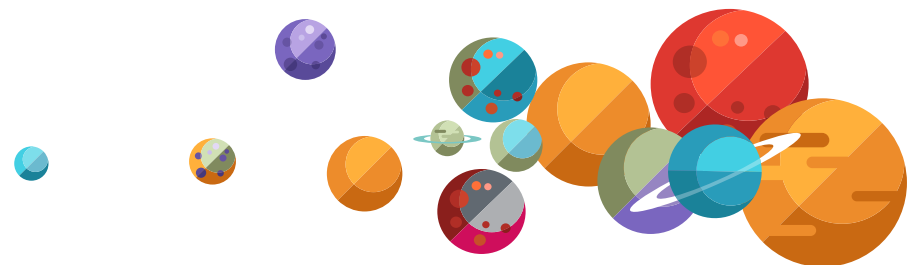
This can be achieved by either joining the existing number of disjointed directories together or reducing the directory numbers altogether through consolidation.

Given that identity powers the modern business, any Digital Transformation initiative should start with looking to simplify and consolidate where identity lives, in the directories, as this is the backbone that connects you to your apps. Directory joining or consolidation is advised as a step businesses should take in general for IT efficiencies, post-merger and acquisition, but also specifically when businesses are architecting to move to the cloud. A strategy that Microsoft, the creators of Active Directory endorse.

Consolidation is particularly necessary post-merger and acquisition, to try and achieve integration at an IT level and deliver the theoretical efficiencies a merger should present. Consolidation removes duplicated IT services, and the need to maintain and run them in parallel. Parallel IT may have appeared the simpler short-term technology strategy, but it's the costlier long-term choice.

This consolidation process then becomes a major project in itself, taking months of effort from multiple IT teams, and often requiring external help from consultancies to deliver the rigorous project management needed and increased staffing levels to achieve a successful outcome.

Risks abound during the process too, with end users not having access to the tools or resources they need. Meanwhile the organisation's security posture is at stake when it's reliant on the security of its weakest link.



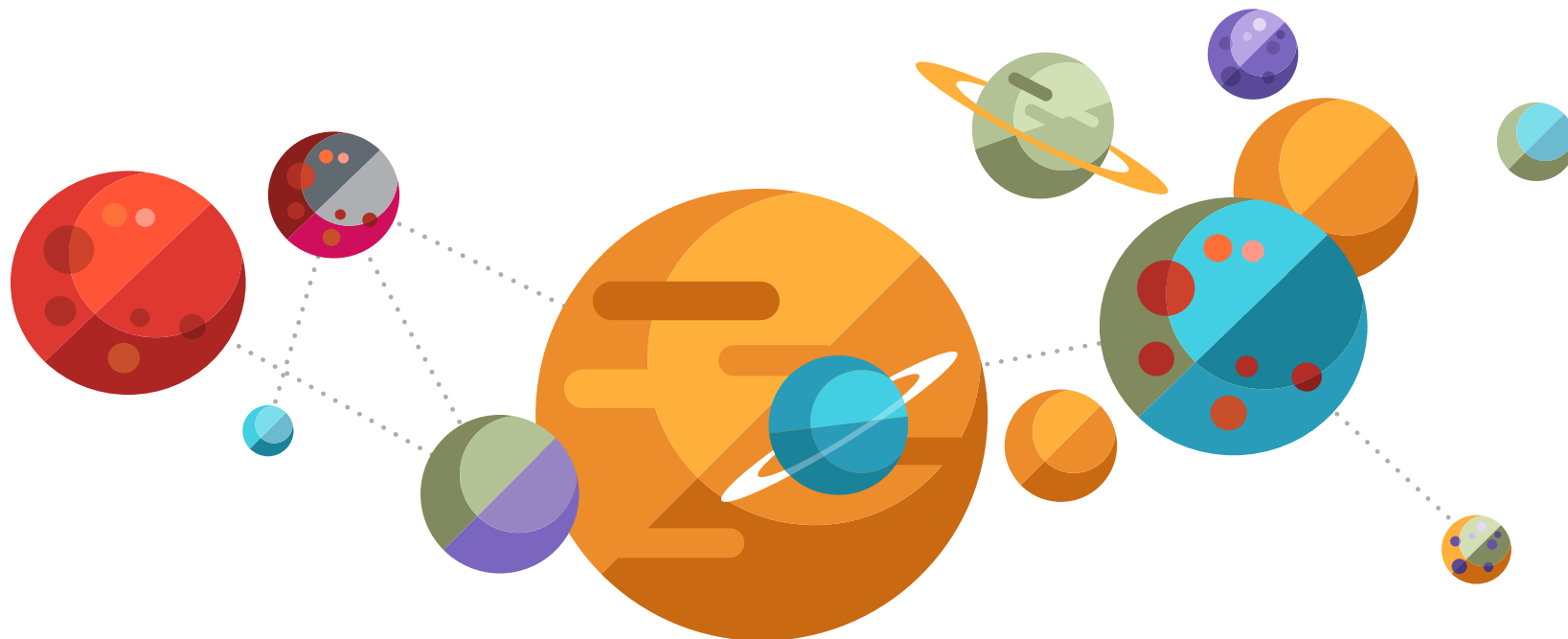
The traditional cost and complexity of linking ageing worlds. *(cont.)*

Not only is there often a lack of trust established between these disparate directories, it also becomes a challenge to align local IT operations with those managed by the centralised head office IT team.

The result is that time-strapped teams often look for help in the wrong places, engaging expensive external consultants, complicated migration tools, costly security reviews, or hours and hours of invested effort by team members, already doing the work of two teams, whose time could be better spent elsewhere.

We'll explain in the next section how Okta Universal Directory achieves the effect of joining or consolidating directories with ease.

Importantly, it does this without removing or replacing Active Directory, unless that's something you want to do. This allows legacy directories to continue to control access to practical things like printers, meeting room bookings and legacy apps that can't be configured to modern standards, whilst IT has a single universal console to access identities across the whole business organisation. Universal Directory can allow you to keep your legacy directories, if you need to, whilst removing some of the limitations that slow digital transformation.





Economic and efficient directory joining or consolidation may seem like a far-fetched tale, but it does exist.



Okta Universal Directory creates one seamless world, without any out-of-this-world consultancy costs. Change made easy.

Collaborating with ease to create one world for identity.

Okta provides a central identity management system to integrate users across different organisations. It creates one IT world, facilitating visibility, control and security. This allows you to transform your technology stack, create flexible autonomy and efficiency for shared sources, improve performance for end users, and provide oversight and visibility for your teams. Immediate benefits for both workforce and customer experience.

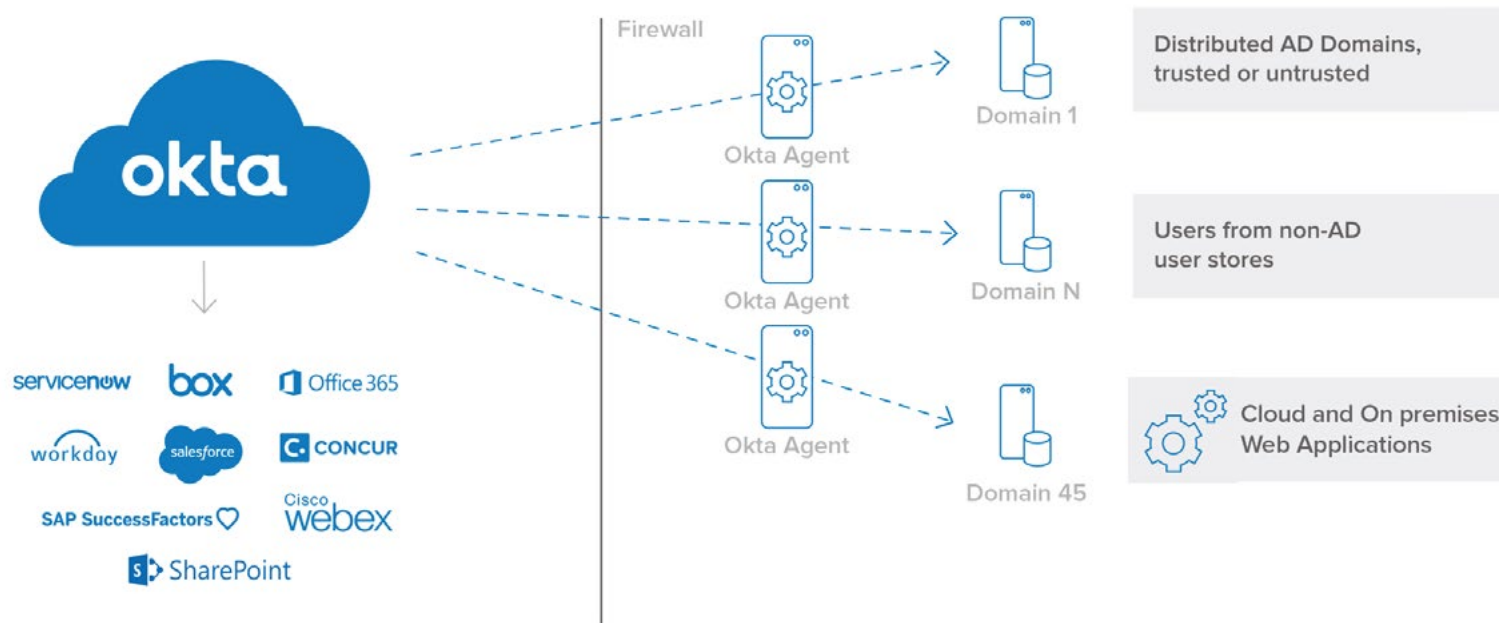
Okta's Universal Directory enables organisations to connect a practically unlimited number of directories and work with them in a single pane of glass, instead of jumping through multiple consoles and different sources of truth. Change made easy. From a technical standpoint, there's no need for Active Directory forest trusts or firewall holes. For example, you may have an environment with multiple Active Directory domains with some trusted and others untrusted. With Okta, you install an Active Directory agent behind the firewall (two for built-in high availability) and Okta will manage these directories from a central admin console.

Of course, data migration is rife with complexity as user information exists in multiple sources and formats. Once Okta is installed, you can run an import to bring any existing users and Active Directory groups into Okta. Okta then allows you to transform, manipulate, and apply logic to Active Directory attributes, ensuring your data is clean and reconciled during the process. No more user identity variations and duplicates. One user, one identity.

Once you install Okta's Active Directory agents, remote agents authenticate with an Active Directory username and password, while local users can be set up for integrated authentication. Once the user is authenticated to the Active Directory domain behind the firewall, Okta will pick up on that and authenticate them into the applications they need.



Collaborating with ease to create one world for identity. (cont.)

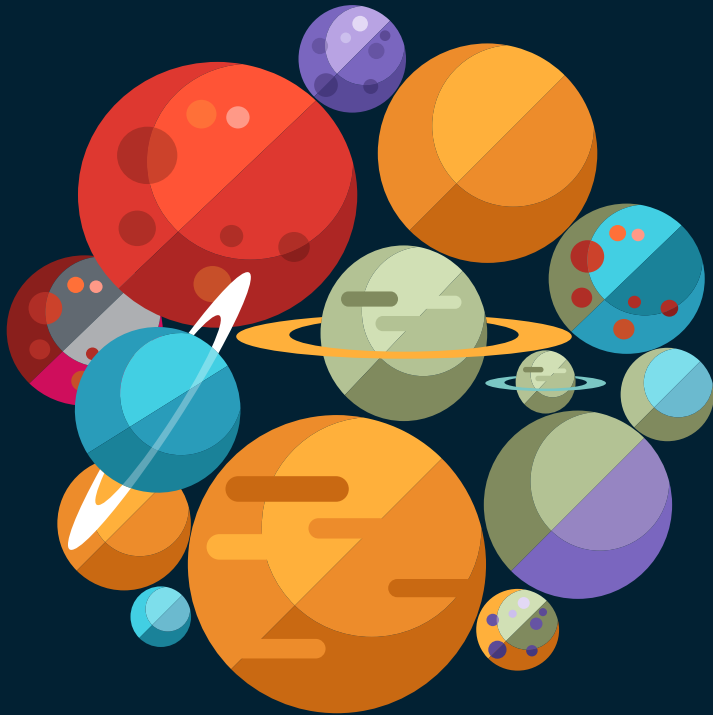


After you have imported users and groups into Okta, you can begin to grant them access to applications. Your security policies in Active Directory are automatically mapped into Okta, allowing you to configure what applications different users have access to directly from the central admin console.

A new user is given a new Okta portal page. When they log-in, they instantly get access to all of the applications and tools they need to do their work and collaborate with their new team members, no matter where they are.

[The Okta Integration Network](#) also offers over 6,500 pre-built integrations with different applications. This means that during mergers and acquisitions, if you have a new company that comes in with a new set of applications, you can often automatically provision them with your corporate apps, or quickly integrate their own apps to your central admin console with Okta. A few of the more popular ones are listed below.





Post-M&A, transferring and integrating the relevant apps is a tiresome journey that can take months to complete.



Okta Universal Directory
creates one world, so the day after
M&A, shared resources are available for
everyone. Change made easy.

Organisations operating one world for identity.

Okta is the trusted identity partner for thousands of enterprise companies, helping many of these customers handle merger and acquisition transitions efficiently and securely.

Greater than the sum of its parts



News Corp comprises a huge range of businesses, from news and information services to real estate, book publishing, digital ad tech and cable network programming. The company has over 25,000 employees worldwide. Some of its acquisitions include Move, Inc. (an online real estate network); Unruly (a social video ad platform); and VCCircle (a digital data and venture capital network). A universe of directories in need of a universal directory.

When Dominic Shine became CIO in 2013, each company was using its own technology strategy and tools. The IT environment patched together numerous SSO solutions, giving users multiple pins, tokens, and access points to keep track of. "Identity was a real impediment to productivity," says Shine. "Security access to systems was cumbersome. People were unable to work easily when they were not in the office. This was a major issue for a company that needs to be always on 24/7."

The goal was to give the team the right collaboration tools while ensuring all business units were on a common platform, allowing them to work together to best serve external customers. Okta now provides that single point of entry to their apps and has transformed how News Corp onboards newly acquired companies. Using Okta's Universal Directory as the single source of truth, the company has saved over 1,000 hours each year on synchronising and consolidating domains after M&A activity. Employees have access to the apps they need two hours sooner than previously allowed.

"Okta makes it easier for us to roll out capabilities consistently to all our business units, so that we can get brands working together globally wherever we need them to." Dominic Shine, CIO, News Corp

[Read the full News Corp case study here.](#)



Organisations operating one world for identity. *(cont.)*

Improving employee productivity on day one



Broadcom's evolution has seen the company grow from an industrial manufacturer to one with technology implemented in most popular devices. This has been possible through an average of one to two acquisitions per year. "That can be challenging, especially when you're on a certain platform, and they're on something completely different," says Broadcom's identity management and services manager, Neeraj Malhotra.

From an IT perspective, the company needed a simple and efficient way to onboard newly acquired employees with day-one access. They found that this was most effective through a cloud-based system. Malhotra wanted to eliminate any manual intervention and looked to Okta to provide a central corporate directory and for automated access to over 40 apps, giving them seamless access to tools like G Suite and Box.

At one point, this involved consolidating Active Directory with 6,000 users. Later, Universal Directory integrated company domains and provided users with access to over 40 apps.

For Broadcom, the results speak for themselves: they have seen a 50% drop in the time required for integrating newly acquired directories and 30% faster time-to-productivity for new users resulting from mergers and acquisitions.

[Find Broadcom's full Customer Journey here.](#)



Organisations operating one world for identity. *(cont.)*

Building a Flexible, Secure IT Environment



When Beach Energy acquired and integrated Lattice Energy in 2017, its workforce quickly expanded from 180 to 1,000 users. The sudden growth presented a few urgent IT challenges. How do you ensure that your security remains strong? How do you provide a consistent experience to all employees, no matter where they're working? And how do you quickly and accurately provide all employees with the tools they need to do their jobs?

Beach Energy needed a comprehensive security strategy that would provide all employees with the same level of protection whether they're working in the office or off-network, on a desktop or a laptop, at home or on the road. For identity, Beach Energy relied completely on Active Directory (AD), requiring IT to perform user creation and access management tasks manually. Provisioning and deprovisioning was also manual and time-consuming; it posed challenges itself, manually adding hundreds of new employees, but it was also difficult to offboard users quickly.

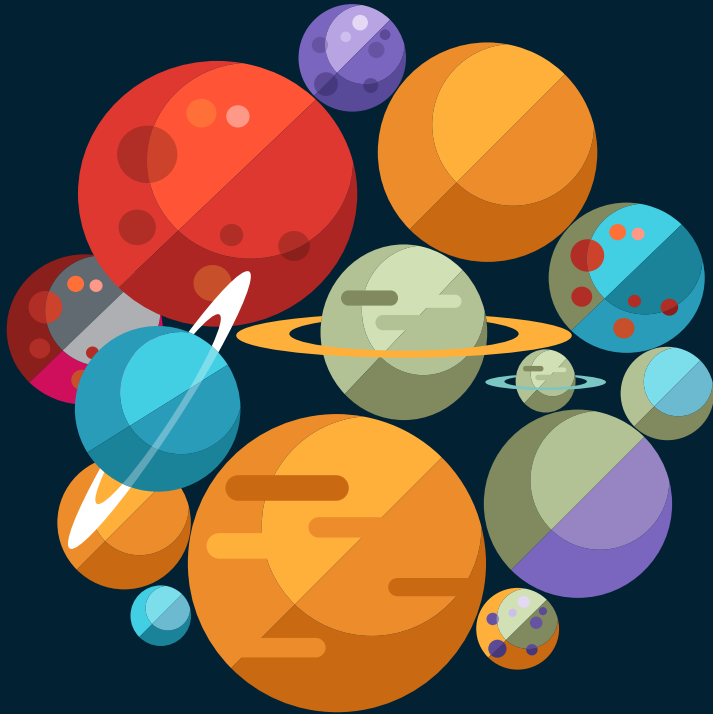
Okta made it possible to consolidate Beach Energy's infrastructure and streamline its processes. Through Okta's Lifecycle management the company was able to automate

provisioning and deprovisioning processes, and setting up Success Factors as source of people information. It added a flexible security layer with Okta's Adaptive Multi-Factor Authentication across its entire environment.

With Okta, Beach Energy was able to migrate their workforce to Office365, integrating all its existing SaaS apps with Okta's Single-Sign-On, and increasing their adoption of SaaS apps. Previously, IT helpdesk was receiving about 30 password reset requests a week. With a holistic SSO product in place, those calls have been reduced by 90%. It added Okta Adaptive Multi-Factor Authentication for a strong, flexible security layer across the entire environment. Within days of the deployment, the company reached 100% adoption.

[View the full Beach Energy case study here](#)





The inability to share existing HR & time and expense reporting can make new acquisitions feel like separate worlds.



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Change made easy.

How one world for identity opens up the business universe.



For the majority of this eBook we've focused on comparing the limitations of traditional directory structures and the pains they cause, with the ease and clarity of one world that Okta's Universal Directory creates. A world where you can choose any technology your business needs, integrate it into your ecosystem painlessly, and deliver a seamless end user experience.

But Universal Directory is simply one facet of the Okta Identity Cloud. As a modern identity solution, Okta Identity Cloud has native capabilities within a single platform to deliver the following key capabilities, which would otherwise require the complex integration of multiple different software solutions to achieve a similar outcome.

Single Sign-On

Okta's SSO provides a great user experience for end users accessing applications. Okta has the largest pre-built integration network, saving admins hours on building and maintaining app integrations themselves.

Universal Directory *(hopefully familiar now)*

Purpose-built for both internal and external users, Okta's directory aggregates and manages users of all types with an intuitive admin interface, multi master and read/write/synch capabilities between directories or HR systems with pre-built integrations.

Lifecycle Management

Okta's solution ensures user accounts are automatically created and removed where and when they're needed. Rich pre-built provisioning integrations support coarse-grain to fine-grain management.

Multi-Factor Authentication

Okta's adaptive, secure authentication techniques add a layer of security to SSO to maintain security as you move IP off-network whilst also removing end user friction by selectively deciding when to challenge users.

Fast Pass

Okta's FastPass enables passwordless authentication for end users across all platforms and devices. As long as the device is managed, end users have access to all downstream apps.

ThreatInsight

Aggregates data across the global Okta customer base and uses this data to detect malicious IP addresses to identify and block malicious login attempts so that if another industry, in another part of the world, is under attack, you're proactively protected.

Device Trust

Allows organisations to protect sensitive corporate resources by only allowing user managed devices to access Okta-integrated apps.

Workflows

Enables organisations to automate complex identity-centric processes (e.g. deprovisioning users and transferring their files) with a graphical interface instead of code).

Access Gateway

Delivers Okta SSO and Adaptive MFA to on-premises applications without changing how those apps work today.

Advanced Server Access

Automates identity & access management across dynamic multi-cloud infrastructure.

As the standards bearer for identity management, we'll extend these capabilities and our partnerships to accommodate new types of identities, groups, devices and permissions over time.



Universal Directory. Create one world.