txture

Continuous Modernization

How CIOs become perpetually future-ready by applying continuous application and infrastructure modernization

There is a quote by a famous German soccer coach that translates to “After the game, is before the game”. The meaning is clear: as soon as the game is over, the (mental) preparation for the next game begins. The same applies to the ever faster acceleration of IT transformation and modernization initiatives.

Organizations, now more than ever, need to transform their IT. The reasons for that can be manyfold, due to cost pressure, market demand, limited agility or M&A activity. The result is that they are frequently stuck in large transformation programs that aim to eradicate legacy IT. What is often overlooked, is that these programs regularly need to be started over and over again because they either fail, or the original technology strategy is already outdated.
IT modernization is too often seen as a game played in rounds, as opposed to a way of thinking that aims to run IT sustainably in line with the business strategy.

Don’t get us wrong, there is still a need for large concerted modernization programs to leap forward to the cloud. However, too often these massive efforts turn out to be a mere bandaid, and fail to realise the promised long-term benefits.

This article aims to highlight a different approach to massive big bang migration programs. It focuses on reducing migration risk and enabling organizations to perpetually align their IT landscape with technical best practices and business requirements .

This approach is called Continuous Modernization.

Why Continuous Modernization?

We have to come to realize that legacy systems are not defined by a particular technology or being run on-premises or in the cloud. Legacy always has to be seen in the context of time and the technology and business environment. Legacy is normal and will always be there. As of today, for some organizations mainframe systems might be legacy, others already see their cloud-based IaaS services landscape as legacy.

So, depending on where you start, an organization needs to either modernize their application landscape towards the cloud, move it further up the cloud stack to become more cloud native or look sideways to come up with alternative cloud native solutions.

Modernization in this context means taking an application - whether it resides in your data center, is outsourced, or runs in the cloud - and rebuilding or replatforming it in a way that increases its ability to scale, its availability, and its agility to react to business demands or reduce costs. The set of options to modernize is comprehensive, which is one of the key challenges.

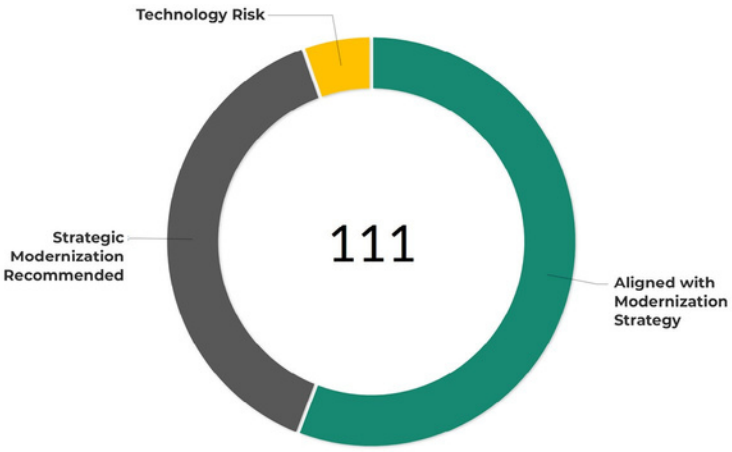
These are the typical options that are chosen today for modernization:

- Lifting and shifting an application to standardized cloud based VMs
- Containerizing an application and its components
- Replatforming application components to PaaS, FaaS or aPaaS
- Replacing an entire application with a SaaS product or a related, but already modernized portfolio application

It is important to realize that these are the best practices of today, which will certainly look different in the near future. For example, it is already common knowledge that just lifting and shifting applications will never realize the full cloud potential for an application. It may merely serve to escape upcoming hardware investments or clean out the stables of leveraged operating systems and such. This means that IaaS-based applications can, in many instances, already be seen as legacy today.

If organizations don't establish a mechanism to continuously evolve their application and IT environment, they will find themselves in the very same situation over and over again. Legacy technology will build up even in the cloud. This will once again lead to disruptions, slower innovation, and higher costs. So just like in software development, if technical debt is not continuously addressed and reduced, the cost of maintaining the status quo and creating new features will grow exponentially or will block innovation entirely.

The solution is the approach of Continuous Modernization which realizes the long lasting ability for organizations to continuously align their IT with business requirements. This also ensures the use of best of breed technologies to implement the business strategy instead of following technical hypes blindly.



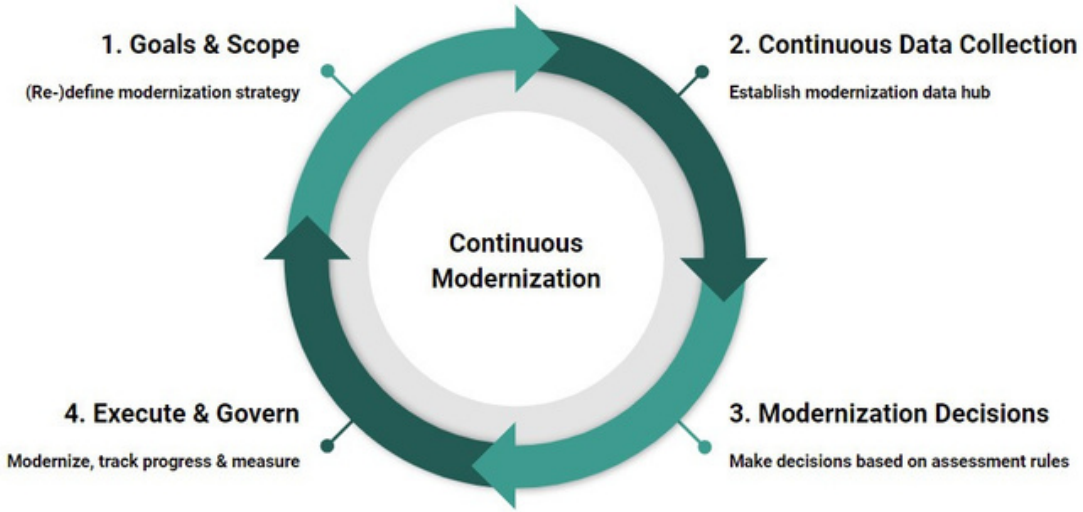
Approaching Continuous Modernization

The key to continuous modernization is to establish a framework to continuously collect and (automatically) maintain data about your current application and business architecture, technology stack, and infrastructure landscape. The emphasis is on the word “continuous” since we have too often witnessed that large assessment efforts led to a snapshot view of the IT infrastructure that was outdated as soon as subsequent transformation steps were initiated. This results in wasted efforts and fatigue by teams that have to support “yet another assessment”.
Hence processes and tools need to be put in place that ensure that your application landscape data and transformation status are always up to date. Otherwise painful, costly, and time-consuming assessments need to be done over and over again for each modernization cycle in the future.

The key steps of continuous modernization are the following:

1. Define goals and scope of modernization
2. Set up continuous data collection for application and IT landscape
3. Make modernization decisions per application and for the application portfolio
4. Execute transformations and apply modernization governance
5. Don’t stop

Let’s look at each step in depth.



Step 1 - Goals & Scope

As always it is advisable to not attempt to boil the ocean. You should clearly define the goals and scope of your initial modernization efforts. Decide whether to start with your entire portfolio of applications or possibly focus on a subset, such as the applications of a certain organizational unit. Also, you should clearly define your technical guidelines for modernization and the expected business outcomes. Make sure you focus on how you will be measuring the outcome of the modernization with appropriate KPIs in place. These could, for example, be the ability of applications to scale and handle more users or the number of outages of certain applications. You may set yourself goals streamlining your technology portfolio, e.g. looking out for FOSS (Free Open Source Software) products; reducing your footprint in technology variance; or putting a certain percentage of existing components in container environments. Whatever your goals and application scope is, it should be an agreement between the business side (uncovering potentials and laying out strategy), as well as the application and IT side (being the enabler).

Step 2 - Continuous Data Collection

To make your modernization continuous and sustainable it is crucial to set up a repository and a consolidated view for your applications and IT infrastructure assets, as well as dependencies expressing ownership, governance, communication, deployment and such. Be sure to cover both the business and technical aspects of applications. Most importantly make sure that you automate the data collection as much as possible. You likely have solutions for CMDBs, data center management, system monitoring or databases of your application portfolio in place. You may also already leverage cloud resources, both in public and private environments. Integrate these data sources into a central modernization hub, that helps you to get the full view of your portfolio when you need it. Establishing regular and automated update mechanisms is extremely important to keep the value of your data high in the long run. Via a central modernization hub, you can analyze data completeness and confidence. These outcomes support later decision processes and inform additional data collection efforts to reduce risks in the execution and governance activities. It is recommended to look into software support to pull this off: the Txture Platform unifies automated data collection at scale with integrated data acquisition surveys and transformation process governance.

The insights into your application and IT landscape that you gain with continuous data collection is the only way to avoid repetitive one-shot assessments. So, build up and rely on an up to date knowledge base with embedded quality assurance to move on in your recurring modernization efforts.

Step 3 - Modernization Decisions

With the right data and knowledge in place, you can now make modernization decisions for applications in your portfolio. Depending on the current state of the application, different modernization options are at your disposal, based on the famous **6 (or more) Rs of modernization strategies**:

Rehost	Lifting and shifting an application on the VM-level to the cloud or from cloud to cloud.
Replatform	Replacing components or software runtimes with Platform as a Service (PaaS) cloud services or using containers without a major rewrite.
Refactor **Rebuild** **Rearchitect**	Rebuilding (parts of) an application to become cloud-native with containers to optimally reap cloud benefits
Replace **Repurchase** **Reconcile**	Replacing an application with a Software as a Service (SaaS) offering or an existing business application with a strong overlap in capabilities
Retain	Keeping an application as-is, potentially revisiting the decision in a later modernization cycle.
Retire	Switching off an application, e.g. because of functional shortcomings, performance or security issues, low business value, etc.

In the context of continuous modernization, you should particularly consider the replatforming, refactoring and replacing approaches. These will make sure that your modernization efforts optimally leverage the key benefits of the cloud, such as scaling, increased agility and reduced administration costs.

Due to the iterative nature of continuous modernization you should also consider to see the modernization in cycles. You can reach initial modernization benefits by replacing some components of an application with PaaS services and by simply rehosting other components. You can then move on to containerization in a second cycle to gain more flexibility, lifecycle automation and better scalability. Subsequently specialized cloud-native services may serve as replacements or platforms for both shared and application specific technical components.

How quick you are advancing with the different offered services depends on many factors, like team skills, application complexity, provider trust or strategy to shift control, initial budget, etc. Starting slowly gives you the opportunity to learn from previous modernization rounds, while moving fast gets your applications in scope quicker from the modernization backlog and puts your team in a situation where they can start to innovate again.

In order to make these decisions you need to establish a coherent application cloud assessment method upfront, that you can consistently apply to all considered applications and that is known and understood by the entire organization.

This way you will be able to reduce friction in making modernization decisions, as you build upon standardization of evaluation criteria and guidance through comprehensible outcomes.

Step 4 - Execute & Govern

After you have decided on how to modernize a subset of applications, it is time to execute. During the transformation process it is important to keep your knowledge base always in-sync with reality. The knowledge base will be indispensable to provide a continuous overview of your progress, keeping all stakeholders in-sync and allowing you to identify any bottlenecks. For each application you should also use the data in the knowledge base to measure against the pre-established KPIs.
An application and IT asset portfolio that is steadily kept up to date with reality is a key success factor for all subsequent modernization cycles. Doing so avoids heavy investments that would be required if you had to re-establish application and IT knowledge over and over again.

Step 5 - Don‘t Stop

Continuous modernization does not stop. As outlined in the introduction, it is extremely important to see continuous modernization as an ongoing process and not a project. After some time all technology will become legacy. So your team needs to re-evaluate the scope of your modernization efforts and the technical guidelines continuously and also revisit applications that have been retained or modernized in the past.

Best Practices

Besides the described phases in a continuous modernization journey, we want to highlight a few general best practices.

Team

A key consideration is the team that is responsible for driving continuous modernization. A typical choice and common best practice is to assign a dedicated cloud center of excellence (CCoE) to this task. A CCoE is a central cross-function unit dealing with internal advisory, upskilling, provider management, security and general cloud strategy. If no CCoE is established or its tasks are partly outsourced to cloud consultancy firms, the enterprise architecture team is usually selected as the internal counterpart to steer transformation efforts. The important factor is that the team has the necessary management backing and is enabled to perform the alignment between the technical and business modernization strategy.

Modernization Knowledge Base

Having a knowledge base that contains the baseline information about your applications as well as IT infrastructure that reflects both business dependencies and organizational structures, is essential for continuous modernization. The good news is that there are software platforms that make this task easy and efficient for you. Automated data collection e.g. by attaching to cloud APIs makes it much simpler to maintain the applications you are running in the cloud. For all non automatable data you should establish assisted and recurring processes to capture up-to-date information.

Clear Technology Strategy

When you continuously evolve your IT, specifically in the cloud, the challenge persists that you will have an even more diverse set of technologies emerging. This is why you need to give out clear technology selection guidelines, to avoid the creep of an overly heterogeneous technology portfolio. Revisit your technology guidelines regularly to give your teams the foundation they need, while keeping technology sprawl to a minimum.

Eyes on Costs

When modernizing applications to leverage cloud based services, you will not only encounter technologies with huge potential, but also a diverse set of new and oftentimes complex pricing schemes. For example, consider traffic costs depending on network configuration and actual geo-location, number of API calls, API call payload size, read/write storage operations, various explicit and implicit discounting options for different products and so on. In traditional data centers some of those costs are simply subsumed by larger costing groups. As detailed measurements were rarely taken, proper forecasts of cloud expenditure are a big challenge. So, be advised to keep an eye on the metrics you are going to be billed for in the cloud, and prepare for those as well as possible. From the actual costs after modernization, you need to draw lessons in your next modernization iteration, to gradually improve your business case calculations.

Use Software for Modernization

To make modernization continuous you should use dedicated software solutions that streamline data collection, speed up decision making and help keep an overview of the modernization status quo. Txture's cloud transformation platform is the purpose-built solution and your companion to take care of all aspects of your iterative modernization efforts.

Txture for continuous modernization

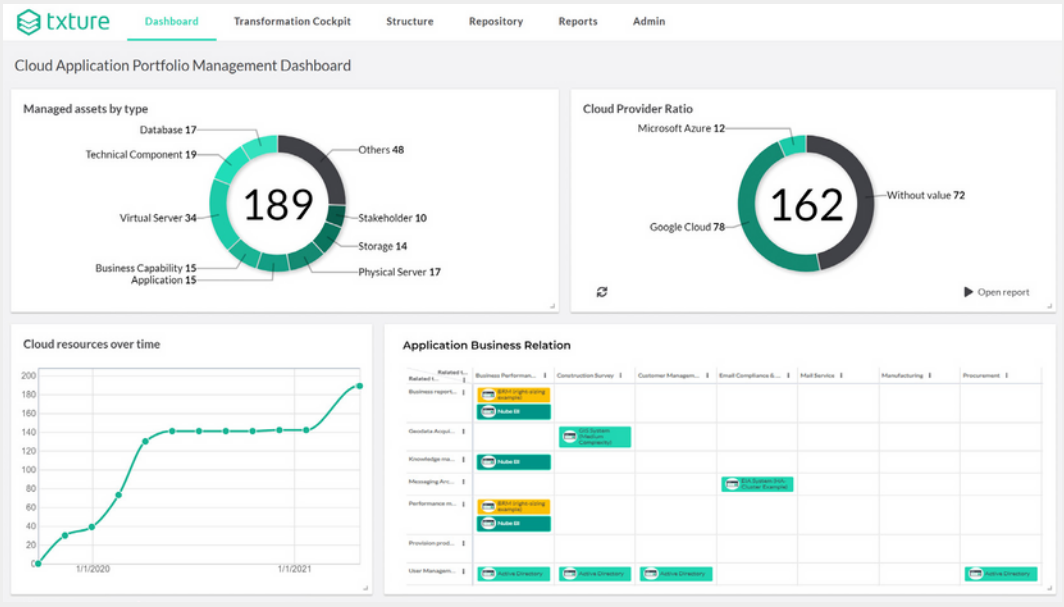
Achieving continuous modernization and avoiding the recurrence of legacy technology is not an easy endeavor. Fortunately, the most challenging tasks can be structured and automated with Txture.

Txture is an end-to-end cloud transformation and continuous modernization software platform. It is used to streamline your modernization efforts through its application and IT infrastructure repository that automatically generates modernization and cost-saving options for you while recognizing your unique business, compliance, and technical requirements. One of its key features is its cloud service knowledge base. It contains more than 400,000 cloud service variants from IaaS to all sorts of cloud-native services and across many different cloud providers.

Leveraging this knowledge base, Txture proposes potential service replacements for on-premises or existing cloud services, thereby always offering a modernization perspective on your IT landscape.

Our Cloud Knowledge Base

- 1,000+ Cloud Products
- 430,000+ Product Variants
- 13 Cloud Providers
- 300+ Locations



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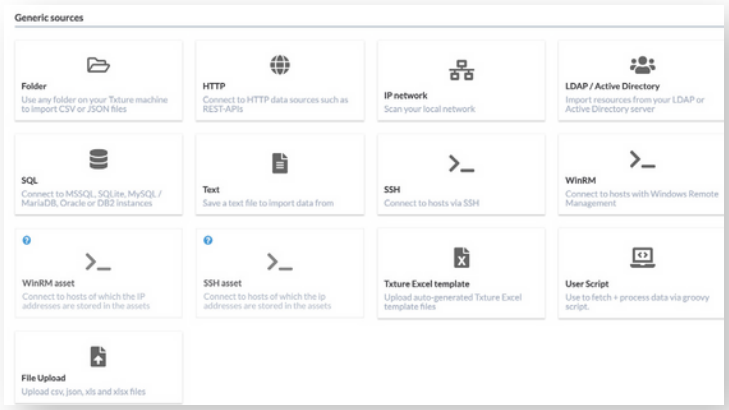
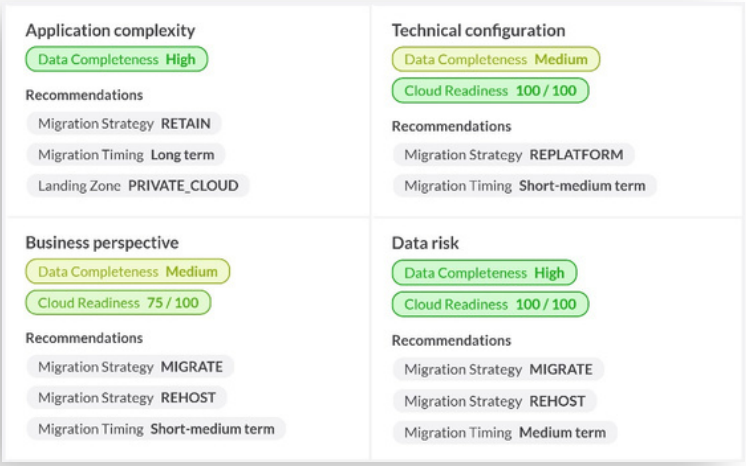
Key Benefits

Reduced Assessment Effort

Txture automatically keeps the knowledge about your current application and IT infrastructure landscape up to date. This works via easy integrations with your existing data silos as well as monitoring and discovery tools. Additionally, all data that cannot be collected automatically can be crowd-sourced with an integrated survey mechanism that scales
to thousands of users and automates follow-ups and status reports. Your teams will love you for not having to integrate and analyze hundreds of survey-like Excel spreadsheets.



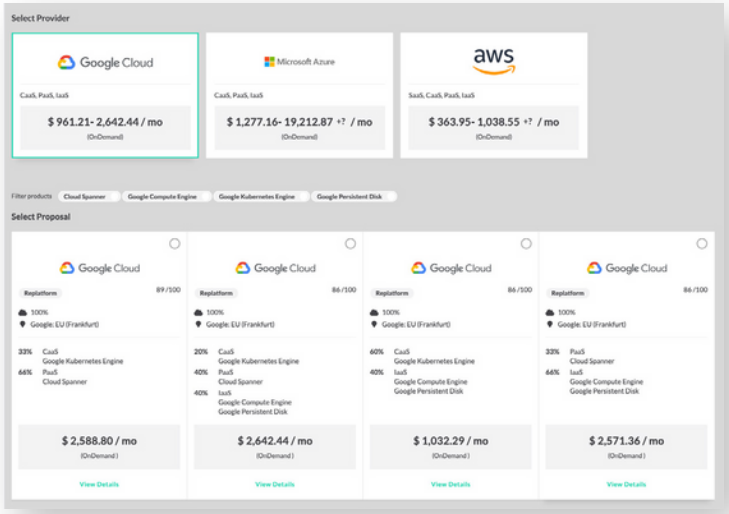


Increased Decision Speed

Txture helps you to make faster decisions and achieve quicker modernization results. It does so with its catalog of assessment rules that you can configure based on your current modernization strategy. The rules assess each application from multiple angles such as business, security, technical, or compliance. They provide modernization recommendations along the 6Rs, private versus public cloud landing zones, and indicate migration risks next to expected cloud readiness as well as benefit.

Save Costs

Txture automatically generates target architectures based on your modernization strategy and enables you to compare prices for different scenarios, providers, services, data center locations or pricing strategies such as reserved instance commitments. This way you can make the best migration decisions based on both a technology, but equally important, from a financial perspective. The technology perspective
offers you service proposals and alternatives, while the financial perspective takes into account short and long term cost implications.



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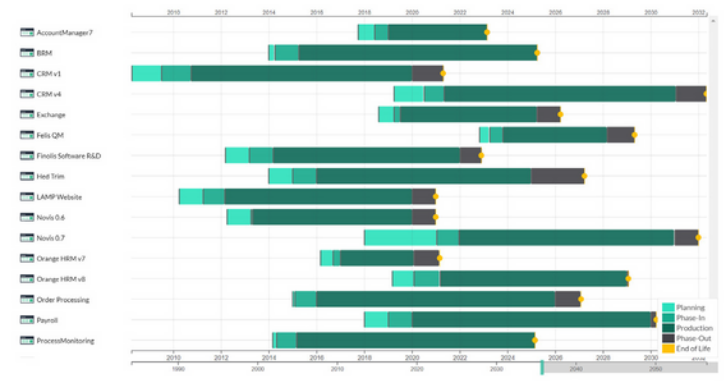
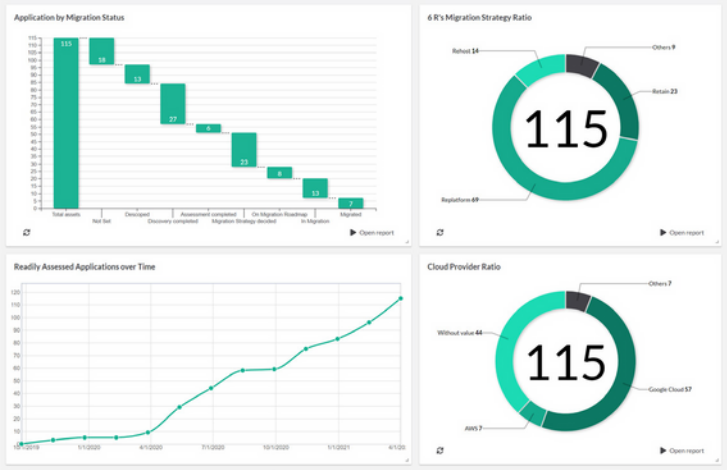
Gain Progress Transparency

Txture provides you with a continuous overview of your current modernization degree, your modernization potential, and alternative pathways and helps you to identify bottlenecks as well as areas for urgent improvement. This is achieved through pre-configured modernization dashboards and reports.





Make Modernization Continuous

As your centralized platform for continuous modernization, Txture is your foundation for making modernization decisions. It helps you to continuously identify applications with outdated stacks and realizes the innovation potential for your entire application portfolio. Continuous and automated data collection gives you a view of where data is missing or outdated. This enables your teams to react in a timely manner to capture quality data to make faster transformation decisions and reduce legacy IT more swiftly according to your strategy.

Summary

As stated in the beginning: after the transformation is before the transformation. This is why organizations are well advised to treat application modernization not as one-shot projects but rather as a continuous process. This helps to be much better aligned with the requirements of the business and the latest technologies that enable the business. The key to continuous modernization is to establish a modernization hub with data about your application and IT infrastructure landscape. This speeds up your modernization decisions and avoids starting new assessment projects from scratch for each modernization wave.

Please get in touch with us if you want to know more about how Txture can help you to streamline your continuous modernization efforts.

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