**CONTENTSTACK**
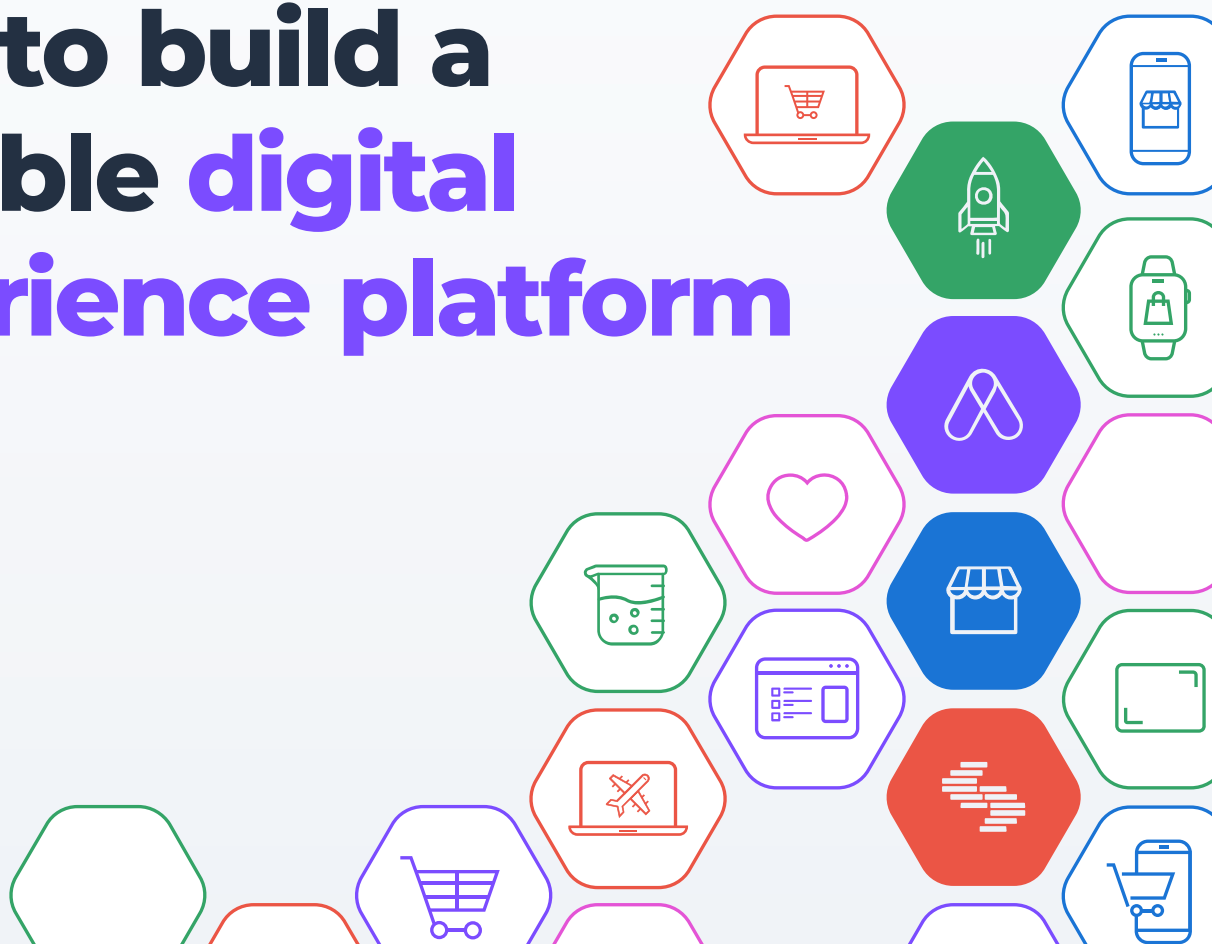
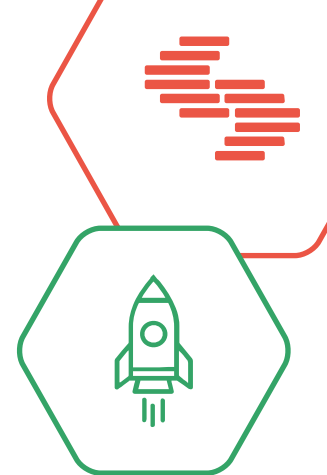# How to build a scalable digital experience platform

A roadmap to driving business growth, publishing more content, and unlocking the power of composable technology

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# Contents

# Introduction

Scale is one of the most common and fundamental problems digital teams must confront to grow their businesses. Yet, it's about more than just unlocking growth. How a team thinks about scale can affect costs, ongoing resource capacity, feature roadmaps and even an organization's overall pace of innovation.

In the universe of **digital experience (DX)**, which spans from the devices at the frontier of your audience's senses all the way to the cloud and hardware that powers your company's back-of-house operations, scale applies in some way to nearly every facet between the two ends. Understanding how the systems, people and processes that make up this end-to-end DX assembly line fit together and affect each other is key to successful scaling.

This white paper will explain how to scale your **digital experience platform (DXP)**. We will discuss the meaning of scale, how to approach scale within your organization, and why it's important.

> Understanding how the systems, people and processes that make up this end-to-end DX assembly line fit together and affect each other is **key to successful scaling.**

# What exactly does it mean to scale?

Simply put, scale is the relationship between the inputs and outputs of a given system. When people talk about scaling a business, they typically refer to increasing outputs, like sales and revenue, while holding constant or decreasing inputs, like costs and materials.

In an engineering-oriented team, scale often refers to hardware and software, such as the ability to flex or expand capacity to process more operations. If you work on a content or marketing team, scale usually refers to growing your audience, increasing engagement, and publishing more and better content. Within business and leadership teams, scale usually means increasing revenue.

However, these definitions of scale are oversimplified because they focus only on the outputs of these systems while ignoring the inputs. To put it another way, when we talk only about increasing the outputs of a system, we're talking about growth. When we talk about increasing outputs relative to the inputs, we're talking about scale.

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> Achieving scale in content production requires efficient, repeatable processes that reduce the burden on your content creators. AI/ML can help significantly, as well as configurable workflows, reusable UX frameworks, distributed and collaborative creation tools, enterprise search to facilitate content discovery, and API-driven management systems that enable asset reuse across multiple contexts so that teams can focus on producing content once.
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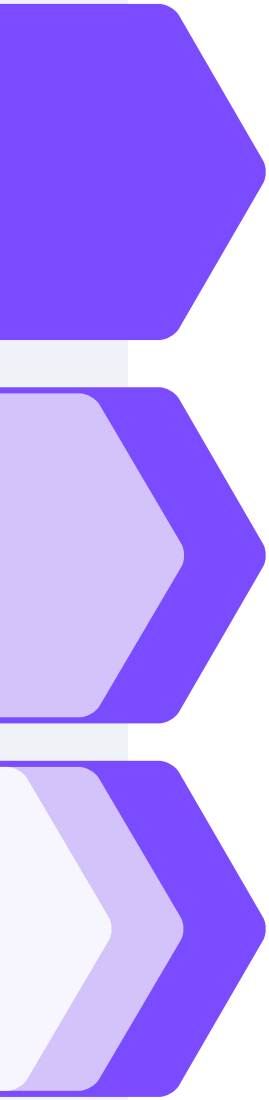> **Demian Hess** | Sr. Partner Solutions Architect, Media & Entertainment
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# A "scalable" case study

To illustrate this concept of scale, consider an imaginary digital agency. This agency builds highly engaging promotional websites, and its revenue is tied directly to the number of websites it can implement for its customers. Let's assume the agency is high touch and that each website takes a total of 1,000 hours to successfully design, build and launch.

Let's also assume that the agency employs 10 people for 20,000 available hours per year (ignoring PTO), and enough resources and the proper staffing configuration to successfully sell and deploy a maximum of 20 new sites per year.

**A blunt approach** to scaling this business model would demand more than 20 sites out of the talent. In this approach, the leadership sees the staff as the enemies of scale and demands they work faster and stay late to meet aggressive output goals. Indeed, many companies attempt this strategy at the cost of talent attrition, sloppy work, constant training of new employees, missed deadlines, and lost customers. Launching just two additional sites per year would require every employee to work roughly one extra half-day every week of the year on average, leaving scant time for family — or the occasional urgent customer support request.

**Another approach** is hiring additional talent and slowly scaling output while demand catches up to the newly increased capacity. Although this approach is common, it comes with the risk of increasing investment before increasing revenue and, when applied responsibly, it can take some time to pay off. Leaders who choose this tactic will hire, say, two more staff with the aim of selling and launching four additional sites per year. Although this approach is intuitive, once the full cost of two FTEs, the opportunity costs of training them, and the revenue from four additional sites are factored into the balance sheet, it's easy to see that this approach could be slow to take off and perhaps actually decrease the agency's profit margin over time if it doesn't go well.

**Now consider a third approach** where the leadership recommends that each team look for opportunities to repurpose generic work developed for other customers to reduce the number of hours required to implement new websites. Over the course of building the next few sites, the teams can develop reusable components of their work. For example, they could build code and design libraries for commonly requested solutions, which in turn results in an average reduction of 200 hours across all website deliverables.

The agency can now produce 20 sites of the same or better quality in only 16,000 hours, which increases its output capacity to 25 websites over the original 20,000 available hours without adding staff or increasing costs.

# Scale smarter, not harder

While each of these three strategies can help our agency scale its output, the third example is a clear frontrunner. It has the highest impact on increasing output while simultaneously holding inputs relatively constant. The third approach is also the only method out of the three that can lead to economies of scale. Economies of scale describe a relationship between an input, such as cost per unit, and an output, such as the number of units produced, where the cost per unit actually goes down as you produce more units. This relationship between inputs and outputs is what people typically mean when they want to scale something. It is not just that they want outputs to grow — they want outputs to grow and the cost of inputs to stay flat or decrease.

Although this hypothetical case study centers around an agency and looks at three simplified approaches to scaling the overall business outputs, it demonstrates the fundamental concepts of scale clearly before unpacking the specifics of scaling a DXP.

Here, we've highlighted two essential tenets that will benefit digital leaders as they work to scale nearly any system:

- **There are many ways to approach the problem of scale, some sustainable and some unsustainable.** Scaling on the backs of employees, for instance, is not a sustainable approach. There is nothing wrong with hustling to achieve a goal, but hustle alone lacks the strategic thinking that unlocks scale, which leads us to our second tenet.

- **Effective and durable scaling centers around creativity and is founded upon understanding — not brute force.** Don't be discouraged if you feel you or your team lacks creativity or your processes are too complex for anyone to understand. As we will see, there are tried and true methods for creating the necessary conditions for creativity to emerge. If you apply them with your teams, you will have a higher likelihood of successfully achieving scale, no matter what it is you wish to scale.

# How to build a scalable DXP

Let's start by defining the territory. **Gartner has a nice definition of a DXP**: "A DXP is an integrated set of core technologies that support the composition, management, delivery and optimization of contextualized digital experiences."

There are three main aspects of this definition, each of which can vary depending on the specific needs of an organization:

1. The set of core technologies
2. The content management processes
3. The digital experience context

Let's unravel each of them separately.

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> A DXP is an integrated set of core technologies that support the composition, management, delivery and optimization of contextualized digital experiences.
>
> **Gartner**

## Core technologies of a DXP

The core technologies of a **DXP** consist of things like a content management system (CMS), customer relationship management system (CRM), digital asset management system (DAM), inventory management system, website, web host, payment processor, mobile application and so on. Core technologies also include any code you write or maintain, DevOps, backups, redundancies, and the technical support required to maintain them.

The technologies that make up any given DXP typically take center stage in an organization, and staff can usually list several of them by name even if they aren't on the digital team because, collectively, these technologies tend to touch almost every member of a modern organization in some way.

### DXP Core Technologies

| CMS | WEB | CRM | PAYMENT PROCESSING | DAM |
|-----|-----|-----|--------------------|-----|

## Content management processes of a DXP

Content management processes are a mix of automated and manual steps that transform, augment and assemble media from ideation to publication. These processes will vary widely from one organization to another, but they typically include things like selecting and editing images, writing and editing content, and updating and maintaining inventory data, like prices and product descriptions. Depending on the size and configuration of your digital team, content management processes can span multiple teams, each providing its own expertise and applying its craft along the content creation pipeline.

While these processes are typically powered by people, they also often include automated steps leveraging the core technologies mentioned above. For example, a photographer may manually shoot several images for an upcoming article. When the photographer uploads the images to the DAM, they are automatically resized, tagged and optimized for their publishing context, and an automated message is sent to an editor letting them know the images are ready for use.

## The digital experience context of a DXP

The contextual domain of the DXP refers to publishing the assembled content. These contexts can include websites or their parts, social media, mobile applications, the Internet of Things (IoT), extended reality (XR) and more. The publication context is one of the more complex components of any DXP because of the variety of contexts in which a piece of content can appear, the amounts and myriad formats of data insights available for each context.

For example, a single piece of content — like a blog post or a product entry — may appear on a mobile app, mobile website, desktop website, and digital display simultaneously, each with slightly different and nuanced requirements.

Now that we've defined the space we'll be exploring, we're ready to begin building our scalable DXP. Most companies already have a DXP, so this process focuses on evolving your existing DXP to make it more scalable. The same principles apply to building a scalable DXP for a brand-new organization, but you will need to return to some steps once you have your team in place. In general, it's a good idea to come back to this process periodically because even subtle system or structural changes can unlock new — or hinder existing — scalability over time.

### DXP Domain

| Websites | Social Media | Mobile Apps | IoT | XR (extended reality) |
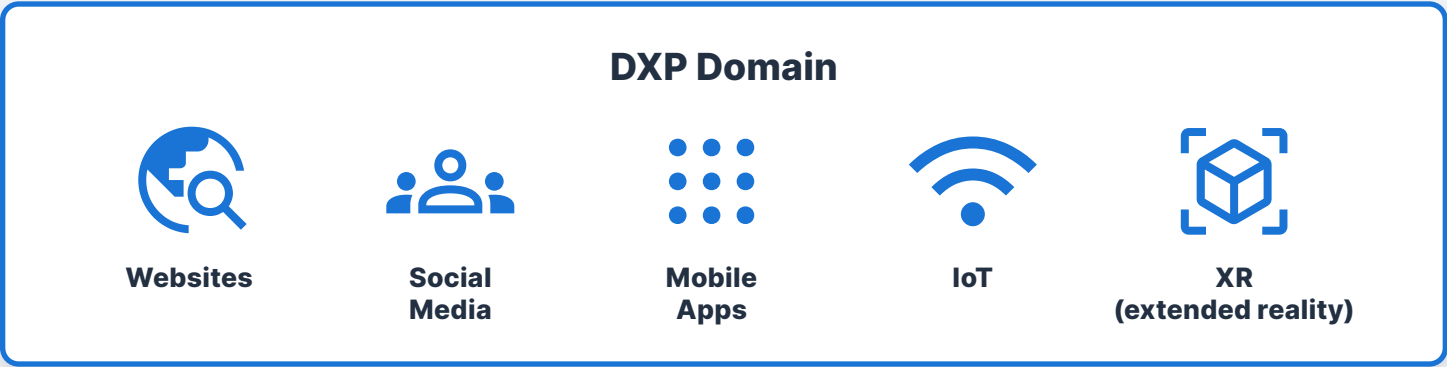
# The five principles of building a DXP

## 1 | Define your content and its components

**Taking a content inventory** is the first step in implementing a scalable DXP. Your end-to-end DXP is a pathway for content to come together and be presented for your audience to experience. Ignoring the realities of the individual pieces that make up your content or are needed to make it successful will ultimately inhibit scale. Think of content as anything you want your audience to encounter independent of the context in which they will experience it.

**Start by listing each type of content**, such as static pages, blog entries, product pages, etc. Then, list the components that make up each of these content types. Here, you want to capture details that show how the media is assembled for the end user. For instance, if a blog entry has a hero image, body text, excerpt, author, and other metadata, document it. Likewise, if a product page includes five photos, a video, a 3D walkthrough, a price, an SKU, and a call to action button, note these details, too.

If your organization has a lot of existing content with a lot of variation, which is often true of large and growing companies, **consider creating one version of your inventory document reflecting your current content and dependencies, and another version reflecting a more ideal and streamlined state.** Similarly, if your business maintains hundreds of websites, you may want to focus only on one specific content segment, like your corporate newsroom or product catalog.

**Try to keep your content inventory documentation simple and clear.** You don't need to list things like social media posts if those posts only redistribute content you originally published elsewhere, like on your brand website. The purpose of this step is to assess the breadth of your content and its components, and to create an anchor for your team as you work toward a shared understanding of context and process.
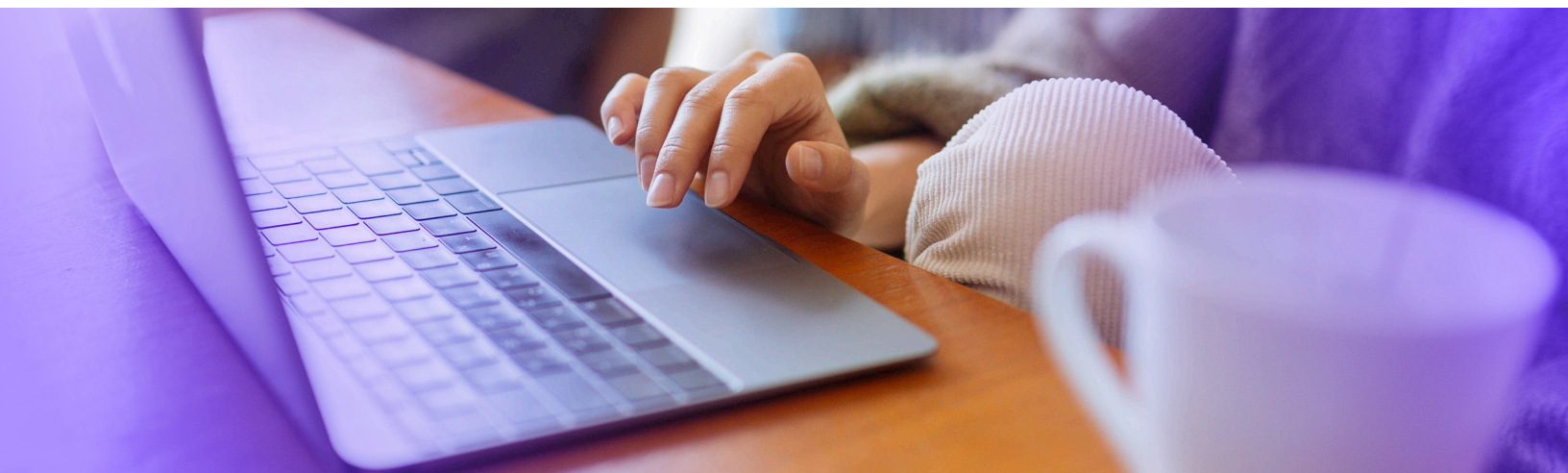
## 2 Define your contexts

Now that you have an idea of the content your team will be publishing, it's time to **document the contexts in which it will appear**. Start by writing down every location where your content may appear. This document will likely include publishing destinations, like the web, mobile apps, digital signage, social media, ads, mailing lists, voice UI, and podcasts. It may also include subcontexts if there are important distinctions that affect content production for any given context, such as differently sized mobile devices, accessibility tools, and the variety of social media experiences.

Contexts can quickly become overwhelming, as they cover how content is presented on any device and how and when individuals interact with it, like in the morning or while driving. Because of this reality, the goal of this step is not to exhaustively list every possible context you can think of. Instead, **focus on the contexts you can directly control that require significant differences in content assembly**. For example, it might make sense for your list to include individual contexts for Twitter and Facebook because you actively craft different and unique content for each platform. But it may not be important for you to list iOS and Android as different contexts for your mobile website if the same technologies and content power both experiences.

**Note the types of content that appear in specific contexts when referencing your content inventory**. While it's common that most content appears in some fashion across each context, that's not always the case. A voice UI app may read a blog post to your users, but the context doesn't allow for images. Similarly, you may post blog entries featuring products to your social media accounts but opt not to post actual product page content on its own.

**The important insight to gather at this phase is the variety of contexts in which your content appears**. This is important because content needs to be optimized for its context. For instance, the same blog hero image may appear across multiple contexts, but it may require different image sizes when presented in each context to provide the best experience. It is a fundamental necessity to understand the content moving through your DXP to this level of detail. With a firm grasp of your content's components and the variety of contexts in which your users experience it, you will be well-equipped to design efficient systems and processes to create and publish that content.
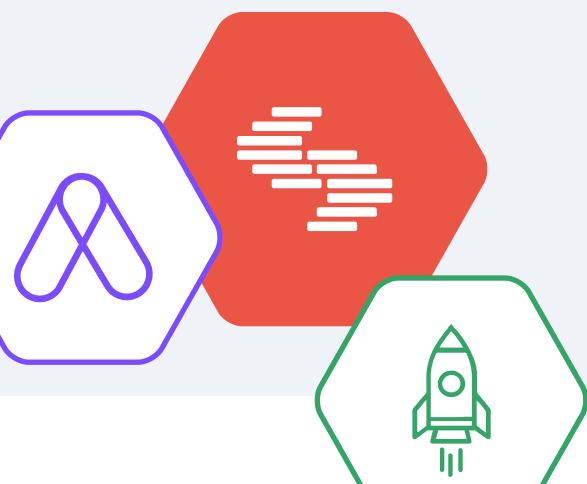
## 3 Walk a mile

**Human-centered design (HCD) or "design thinking" is a powerful philosophy and rich tool set that can empower any digital or technology team.** One such tool is called "walk-a-mile immersion." In this process, you simply walk a mile in someone else's shoes. Envision an assembly line where every step contributes some value to the end result of your content being published in a variety of contexts. The assembly line has stations where your team performs certain processes as components are created, put together, and modified before final delivery.

**Talk to each team involved in creating, editing and managing each content component.** You'll get to know the systems they use, the scope of their functionality, and how the individuals on your team use the tools. If you are creating a new DXP or building a new team, then envisioning and jotting down hypothetical teams and content handoffs can work just as well. The goal of this step is to document each of the key steps and tools used along the content creation pipeline, from ideation to publication.

For example, if you maintain an inventory database, a DAM, a CMS, or a CRM — or if you use desktop tools or a monolithic system — document all of them along with the nature of the work and effort involved in completing each step to produce your content. If ideation starts on a whiteboard and your content is published in five different places, document the steps, systems and effort required from the beginning to the end.

At the conclusion of this step, you should have a clear understanding of your content and its components, the varied places where your content appears, and the processes and systems your teams leverage to create, edit and publish content.

## 4 Analyze your assembly line

By now, you've documented your content and contexts and have a map of the systems and processes required to advance through your content pathway. In this step, we analyze the content assembly line to **highlight steps with high effort and low added value to set the stage for scalability.**

**Start by looking for duplicative effort and content.** Examples of opportunities for improvement include your team having to create multiple different sizes of an image to publish in each of your contexts, or performing manual, repetitive tasks that add little value and require significant effort. Consider how upstream ingredients, like product pricing and inventory systems, feed into your CMS and are married to descriptions, images, reviews and so forth.

**In legacy DXPs, many of these steps and processes can occur in one or just a few systems.** Modern DXPs, however, will typically have various systems, allowing team members to focus on discrete touchpoints along the content assembly line.



Identify steps and processes where teams typically report being blocked by other teams. Any team or process blocked by another team or a previous step in the assembly line often indicates that optimization is needed upstream. For example, if the final content publishers are always waiting or requesting images to be resized, this process step is a potential opportunity for improvement.

**Once you highlight areas with high effort, or "friction", shift your focus to steps and processes that are efficient.** For example, if you have a backlog of ideas for articles or products needing descriptions, these surpluses likely indicate high efficiencies at these steps. Consequently, other steps and processes could be improved to match the pace of available supply.

At the conclusion of this step, you should have a clear picture of the end-to-end assembly line for creating and publishing your digital content, including all elements, assets, texts, metadata, and other media coming together for final publication in each given context. You should see each individual system used for each step in the assembly line, as well as every human process and general level of effort required to publish a piece of content.

**For e-commerce DX**, you may need to understand the back-end processes that maintain inventory levels and pricing, followed by other process steps to add ancillary product metadata and media, perform checks for accuracy and legal compliance, and finally deploy the content to a live site where it is cached on a CDN for low-latency access. For a media organization, your assembly line may instead start with ideation in a Trello board, followed by an outline, then a draft, and finally image asset production and publication in a CMS that feeds into a newsreader app.

The number of potential steps in creating an assembly line is virtually limitless and, at this time, there is no single right way to structure these systems and processes. That said, as you may now be able to see in your assembly line, the number of wrong ways to do it is equally expansive.

## 5 Strategies for scale

Honing in on your DX assembly line and locating areas for improvement is enlightening, but without instituting real and intentional change, friction remains. Now that we know the strengths and weaknesses in our existing processes, **how do we prioritize and implement changes that scale?**

If you've completed each previous step successfully, **you should be able to readily identify two or three places in your assembly line that stand out as having higher effort or higher cost of input than others.** In some cases, friction is expected, such as in article writing or sending teams out to the field to gather photos or raw audio that must be edited by hand. In other cases, you may identify a process step that always seems to be blocked, such as a publishing team waiting on transcripts, translations, file format changes, image resizes, SEO metadata, and so on.

**Begin by prioritizing repetitive tasks.** Any high volume of repetitions performed by a human often indicates that there is a more optimal process available. Examine the systems used at this step and determine whether they provide the most up-to-date tools to perform these operations. For instance, many DAM and CMS solutions automatically resize images and store them in multiple formats optimized for various contexts. There are also excellent tools that automatically transcribe audio and translate text into almost any language, which could significantly reduce these high-touch steps in your assembly line.

**Optimizing your assembly line for scale** will typically involve a combination of reorganizing processes and workflows to improve the pace of handoffs from one step to the next, along with updates to the core technologies your team uses to realize your digital experience.

# Composable DXPs are on the rise

In recent years, there has been a trend toward composability. Digital teams are looking deeper into their publishing workflows to utilize the best set of tools for each step of the process.

> **Composing a DXP** is the opposite of purchasing an off-the-shelf system. When you adopt a composable approach, you accept the reality that your business needs are unique, and it's unrealistic to expect one or two products alone to offer everything your team needs, given the variety of content and contexts your DX relies on.

The most essential need for the systems that make up your DXP is interoperability, which is often referred to as "**API first**". Application program interfaces (APIs) allow systems to talk to one another and share information safely and securely. For your business, this unlocks the possibility of automating hand-offs and removing blocks where content components are manually delivered to the next team for assembly. Webhooks and automation tools leverage APIs and are extremely handy for removing rote human-powered processes and exchanging them for more efficient machine-driven processes.

> **Headless CMS** is another popular solution that focuses the content management in a single-purpose powerful solution designed for managing and shipping your content to virtually any context without needing to make any changes to your core systems. You simply deploy a new app, website or other technology that safely consumes content via your APIs.

Wherever you find one product doing most of the work in your assembly line, chances are that there is high friction between it and any adjoining steps in your publishing workflow. These systems also sometimes lead to siloed teams and ivory-tower cultural tension between those with access to the monolith and those without.

## Benefits of composable solutions

By replacing a monolithic system with a multi-product platform featuring focused independent interconnected tools or a variety of API-connected solutions that focus on doing one or just a few things extremely efficiently, you hedge against siloing and begin to move in the direction of more streamlined processes.

Moreover, many composable solutions are extendable, allowing you to integrate them with other systems in a few clicks or lines of code. And, if one solution becomes too costly or fails to unlock the efficiencies you seek, it can be relatively easily replaced without the need for a wholesale migration or hugely disruptive technology change.

## Unlock the scale of your DXP

When you complete this step, you should finally have a complete picture of your end-to-end digital assembly line, along with each system, team and process that must work together to create and deliver your digital content across your chosen contexts.

From this vantage point, you can easily identify where scale is blocked and where it is already well established, as well as which areas stand out as the highest optimization priorities. You will be ready to take action and unlock the scale of your DXP.

# The four reasons why you should scale

If building and scaling your DXP sounds like a lot of work and critical thinking — it is. So why should you do it? You may be enticed by the potential revenue increases or cost reductions, but if your reasoning only extends to cash flow, you will open yourself and your company up to bad decisions.

Of course, any sound strategy you take with your **DXP** should lead to increased financial returns on your investment and effort, but that is only one of many potential outcomes. If the team undertaking the work and feeling the brunt of the change process doesn't quickly feel those additional returns through a bonus strategy or revenue sharing, the returns won't be durable enough to instill a lasting approach to scalability in your digital organization.

## 1  A DXP puts the customer first

The first reason to build a scalable DXP is to benefit your customers. Adopting a scalable approach will allow you to reach them better, faster and more efficiently. It will allow you to continue evolving your mission and increase your engagement with your audience. Scalability for your DXP means your customers can interact with your brand smoothly, including sales, support and even your customer community. It means that orders are accurate and filled quickly. It means that the latest and greatest news and information from your company are always ready for your customers to experience in their preferred context.

## 2  Create and manage more content

Scaling allows you to create and manage more content. Consider a traditional monolithic CMS that is designed purely for publishing on the web. Perhaps you've cobbled together bolt-on API solutions that allow you to publish simultaneously to the web and your mobile application, and perhaps you've optimized a slew of copy-and-paste processes to their maximum efficiency. But adding another distribution channel, like a voice app or integration with an IoT device, feels like months, if not years away from your present state.

Now consider how **replacing your monolithic CMS with a headless CMS** would tear down walls for your team, allowing your content managers to focus on crafting delightful and optimized content while your designers and developers tackle the presentation of that content in numerous contexts.

## 3  Unlock the potential of your people

The third main reason you want to scale is your people. Time not spent copying, pasting and emailing content and collateral is time available for ingenuity and innovation. As you unlock scale within your DXP, you free up your team to focus on the areas where they can create real value, which is typically a rewarding and uplifting result. Although it may be tempting — and at times necessary — to optimize and scale your DXP or other business processes to reduce team size, that should rarely, if ever, be the sole motivating factor for pursuing scalability.

Instead, pursue scalability across your organization and DXP as if you are upgrading everyone's daily lives or giving them a new set of clothes to replace the old ones that don't fit so well anymore so that they can do their very best high-value work. Your team will thank you for setting them free, and your customers will thank you for the ease with which you provide them with your services. After all, businesses are run by people to provide goods and services for other people. Meeting the needs of both groups efficiently and optimally is the definition of good business, which inexorably leads to growth.

## 4  A scalable DXP drives business growth

While many companies are fortunate enough to achieve growth, not all of them can achieve scale. Often what holds a business back is more the result of how teams look at their internal systems and processes than it is about market conditions. In fact, by deeply examining and understanding the end-to-end processes within your organization, you have the potential to drive demand by making your products better and cheaper than your competitors. This is precisely the outcome Ransom Olds achieved for Oldsmobile in 1901, when he implemented the first automobile assembly line and increased output by 500% in one year.

Today, blazing-fast mobile connectivity, IoT, and new devices on the market all point in the same direction: **the number of places where your customers expect to engage with your brand online is growing.** Your capacity to meet them there should also be growing if you want to maintain your competitive edge. By understanding the assembly line that makes up your DXP, you can see each system and step in your publishing process clearly, which will allow you to make intentional changes in your core technologies and people processes that will unlock scale.

We are fortunate to live at a time with more tools and options available to optimize and scale your DXP than ever before. From back-end big data, inventory and digital asset management tools to headless CMS, automation tools and instantaneous publishing on CDN geographically close to the user, digital teams have never had more accessible tool sets for reassessing their DXP implementation and optimizing for scale.
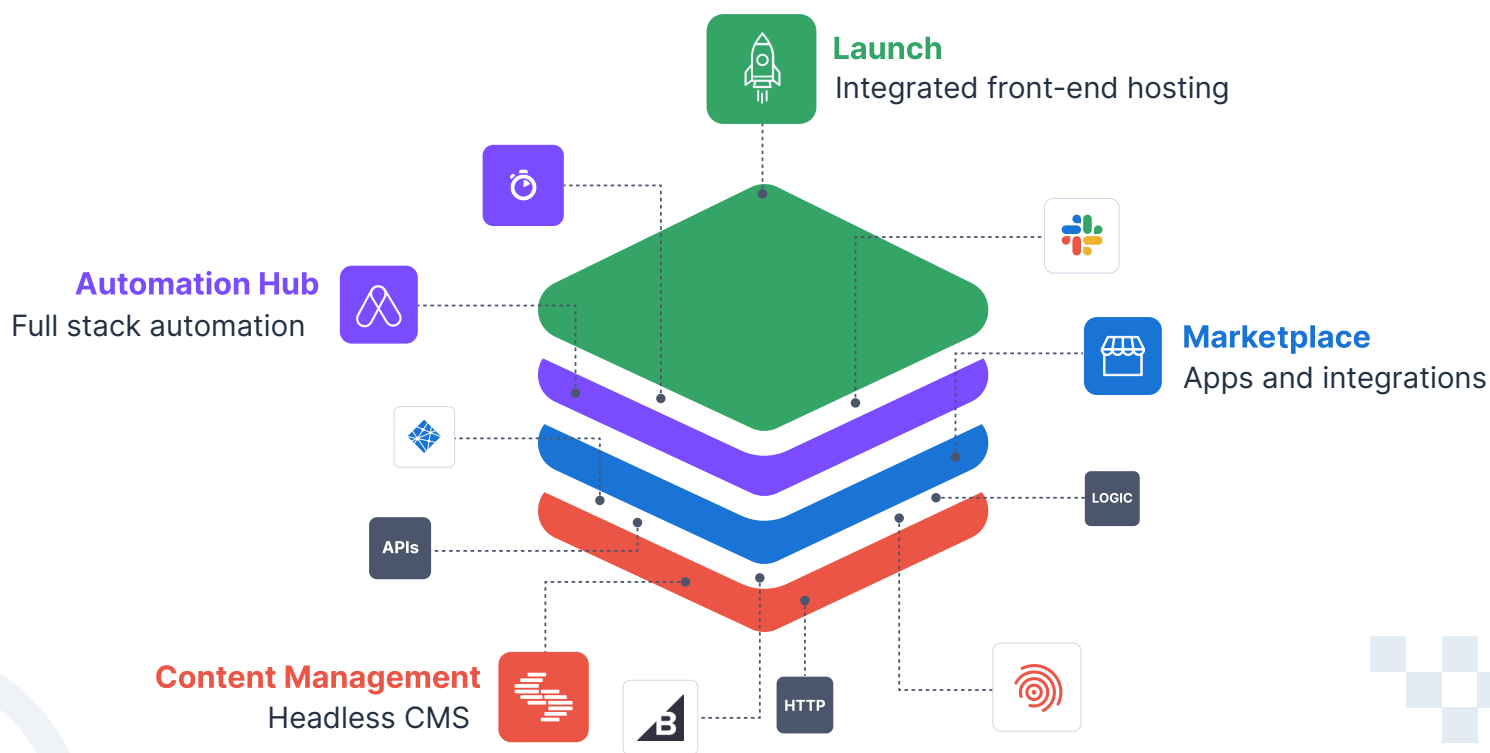
# What's next?

Equipped with a firm grasp of what it truly means to scale and the steps outlined above, you and your teams should now be ready to unlock efficiencies that have previously held you back. It's time to embark on the exciting journey of scaling your DXP.

The best part is that you're not alone in your journey to going composable. Contentstack offers world-class, hands-on support that ensures a successful transition the composable DXP your business needs to drive growth, reduce complexities and scale as needed.

## Developer Fast Track

Start building your composable DXP today with our 21-day free trial designed specifically for developers.

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