The 2022 Gartner CIO and Technology Executive Survey provides insights for those leading the transition to digital government. The research illustrates that mastering composability enables government CIOs to be more agile and maximize value during periods of volatility, modernization and reform.
Overview

Key Findings

• Organizations that implement composable practices outpace their peers in overall performance, while reducing risks and lowering operating costs.

• Legacy government systems, and by association IT organizations, are frequently seen as inhibitors to reform and modernization of processes in government.

• Only 2% of governments are identified as highly composable.

Recommendations

Government CIOs leading the transition to digital must:

• Establish leadership’s commitment for investing in composable capabilities by tying value to government reform and modernize government efforts

• Build a sustainable IT strategic plan by incorporating the nine key practices of composable organizations in planning and execution

• Identify opportunities to establish composable capabilities that will accelerate the adoption of digital government by assessing challenges the organization faces in the key areas of practices, business architecture and technology and implementing remediation plans
Strategic Planning Assumption
By 2023, 50% of technology companies that provide products and services to governments will offer packaged business capabilities to support composable applications.

Survey Objective
The 2022 Gartner CIO and Technology Executive Survey was conducted to inform CIOs and other technology executives on how composability can improve business performance during times of volatility.

Data Insights
This survey analysis identifies findings around the current level of composability within government organizations. These findings compare municipalities, state or provincial organizations, and national or international government organizations to those organizations that are highly composable across all industries. The survey analysis also identifies actions that governments can take to advance practices and principles for composability in their organizations.

What Is Composability?
The composable government enterprise is any government organization that adopts design principles and adheres to enterprise architecture principles that improve the modularity and agility of business capabilities. Business composability applies modularity to business assets — people, processes, technologies and even physical assets — so that government leaders can easily and safely recompose them and create new value.

Being a composable government enterprise enables an organization to extend the reuse of capabilities and continuously adapt to changing regulatory, legislative and public expectations.

Gartner introduced the composable government enterprise as one of the top technology trends in government for 2021 as part of a wider shift toward business composability (see Top Technology Trends in Government for 2021: Composable Government Enterprise).
While the concept of composability is not new, Gartner has developed a framework to guide implementation (see Figure 1). This framework contains the following core elements:

- Composable thinking
- Composable business architecture-Composable technologies

![Figure 1: Business Composability](image-url)

Source: Gartner
Why Composability Matters

Composability enables governments to break down silos by the adoption of the three principles of composability. This resolves the often incompatible perspectives that government leaders have of programs, services, technology and data, creating a more holistic view. As the pandemic has impacted the world, organizations, including governments, that demonstrated characteristics of composability have risen to the immediate challenges improving overall business performance, reducing risk and lowering operating costs (see Figure 2). Composability helped them accelerate the implementation of digital solutions and continue the progress through revamping governance, technology and services.

Figure 2: Performance Comparison

![Performance Comparison Diagram]

**Enterprise Business Performance**

Percentage of Respondents Ahead or Far Ahead of Peers and Competitors

- **High Composability (n = 143)**
- **Municipal or District (n = 74)**
- **State or Province (n = 64)**
- **National or International (n = 91)**

<table>
<thead>
<tr>
<th>Category</th>
<th>High Composability</th>
<th>Municipal or District</th>
<th>State or Province</th>
<th>National or International</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Business Performance</td>
<td>63%</td>
<td>47%</td>
<td>41%</td>
<td>32%</td>
</tr>
<tr>
<td>Reduce Business Risk</td>
<td>50%</td>
<td>27%</td>
<td>27%</td>
<td>17%</td>
</tr>
<tr>
<td>Reduce Operating Costs</td>
<td>47%</td>
<td>19%</td>
<td>19%</td>
<td>12%</td>
</tr>
</tbody>
</table>

n varies by segment, CIOs and technology executives answering, excluding “don’t know”

Q: Considering the past 12 months, rate your enterprise’s business performance compared with its peers or competitors

Source: 2022 Gartner CIO and Technology Executive Survey
Composability Revealed

There is more to business composability than being digital. In order to identify best practices for becoming a highly composable enterprise we need to unpack the components of composability and what it means for governments. Composable governments use three key components:

- **Composable thinking**: Emphasizing the assembly and reassembly of components as the most effective and efficient means to achieve mission-outcomes that meet the evolving needs of constituents.
- **Composable business architecture**: Business elements that include products, teams and processes, and create new value.
- **Composable technologies**: Assets and capabilities that include automated modular technologies.

We know from earlier work that adoption of these three components varies greatly among enterprises. However, in comparing those organizations identified as highly composable with government organizations in general, government lags significantly in scaling the use of each component (see Figure 3).

### Figure 3: Comparing the Extent of Government Use of Composable Principles

<table>
<thead>
<tr>
<th>Extent of Composability</th>
<th>High Composability (n = 150)</th>
<th>Government (n = 246)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composable Thinking:</td>
<td>6.4</td>
<td>3.7</td>
</tr>
<tr>
<td>Our culture encourages the continuous exploration and creation of game-changing business capabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composable Business Architecture:</td>
<td>6.4</td>
<td>4.3</td>
</tr>
<tr>
<td>Business elements (e.g., capabilities, products, teams, processes, services, etc.) dynamically evolve to create new value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composable Technologies:</td>
<td>6.2</td>
<td>3.5</td>
</tr>
<tr>
<td>Technology assets and capabilities consist of modular components where assembly and reassembly are automated</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n varies by segment, CIOs and technology executives answering Q: To what extent does your enterprise utilize these principles? Source: 2022 Gartner CIO and Technology Executive Survey
All enterprises sit on a spectrum of composability; in evaluating the survey responses, 6% of all respondents were identified as demonstrating high composability, whereas only 2% of governments were. National governments and international organizations are leading in adopting composable practices, with 5% of those sampled exhibiting high composability, 84% of this sample as moderate composability and 11% as low composability. States and provinces sampled trail behind with only 1% being identified as highly composable. There are no municipal or district respondents in the high composability bracket (see Figure 4).

**Differentiating Highly Composable Enterprises**

Gartner reviewed 30 practices to learn what sets the high-composability cohort apart. Of those 30 practices, there are nine that a majority of the high-composability respondents use that have the greatest impact on composability (see Figure 5).
Figure 5: Nine Practices Distinguish Highly Composable Enterprises

Nine Practices Distinguish Highly Composable Enterprises

n = 148 CIOs and technology executives from highly composable enterprises answering
Q: Which of these practices does your enterprise follow completely and consistently? Multiple responses allowed.
Source: 2022 Gartner CIO and Technology Executive Survey
Composable Thinking Practices
Highly composable organizations distinguish themselves on three key practices of composable thinking:

- Practicing adaptive strategy
- Promoting a high-trust culture
- Empowering collaboration through self-organizing networks

The survey indicates that governments at every level have not prioritized the adoption of these key practices, negatively impacting their overall composability (see Figure 6).

Practicing Adaptive Strategy
Adaptive strategy is an approach to strategic planning that enables organizations to better respond to the rapidly changing and uncertain work in which they operate (see CIOs Need to Lead the Way to Adaptive Strategy). There are four key practices to adaptive strategy:

- Starting execution of your strategic plan as early as possible
- Responding to changes as they happen
- Embracing and exploring uncertainty
- Involving everyone in strategic planning

State and provincial governments (30%) outpace national governments and international organizations (21%), and municipal and district governments (24%) in their use of adaptive strategy.

Promoting a High-Trust Culture
A fundamental practice of any highly successful enterprise is the autonomy of managers and line staff to make informed, independent decisions within well-established strategic and operational guidelines. When it comes to promoting a high-trust culture that empowers employees to make independent decisions, survey results reflect the increasingly hierarchical nature of decision making the larger the government gets.

Local governments lead the way with a six percentage-point margin over state and provincial governments and an eight percentage-point margin over national governments and international organizations in promoting a high-trust culture. Government CIOs looking to drive their transition to digital must expand this level of empowerment by demonstrating the right balance of governance and leadership (see Quick Answer: Where Should Governance Stop and Management Begin in the Public Sector? and End the Confusion About Who Is Accountable for Digital Government).
Empowering Collaboration Through Self-Organizing Networks

The common hierarchical nature of government not only creates challenges for empowering decision making in individuals, it also makes it difficult to empower teams. The results from the survey show that, while half of the highly composable organizations are empowering internal functions, product teams and business partners to excel, all levels of governments are still struggling with these approaches.

Only 21% of state and provincial governments empower internal teams to work together through autonomous and self-organizing networks, while 17% of national governments and international organizations do so, and 19% of municipal and district governments do so (see Figure 6). Restrictive procurement practices, project-based funding models, limited agile adoption beyond project delivery and the limited adoption of product management principles are some of the other inhibitors to this empowerment (see What Sets Leaders Apart in the Digital Government Race and Creating the Role of Product Manager in Government).

Figure 6: Comparison of Key Composable Thinking Practices

### Key Thinking Practices to Improve Business Composability

Percentage of Respondents Who Perform It

<table>
<thead>
<tr>
<th>Practice</th>
<th>High Business Composability (n = 147)</th>
<th>Municipal or District (n = 74)</th>
<th>State or Province (n = 67)</th>
<th>National or International (n = 91)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice Adaptive Strategy to Spot and Respond to Opportunities and Threats</td>
<td>64%</td>
<td>30%</td>
<td>21%</td>
<td>24%</td>
</tr>
<tr>
<td>Promote a High-Trust Culture That Empowers Employees to Independently Make Decisions</td>
<td>56%</td>
<td>23%</td>
<td>21%</td>
<td>29%</td>
</tr>
<tr>
<td>Empower Internal Functions, Product Teams, External Allies and/or Business Partnerships to Work Together Through Autonomous, Self-Organizing Networks</td>
<td>51%</td>
<td>17%</td>
<td>21%</td>
<td>19%</td>
</tr>
</tbody>
</table>

n varies by segment, CIOs and technology executives answering Q: Which of these practices does your enterprise follow completely and consistently?

Source: 2022 Gartner CIO and Technology Executive Survey
Composable Business Architecture Practices
Establishing a composable business architecture that enables governments to adapt to fluctuating service needs and demands and respond effectively to regulatory change, is the second component of being a composable government. Organizations that stand out as highly composable distinguish themselves by:

- Shaping multidisciplinary teams that are accountable and collaborate on demand
- Designing business processes in parallel with technology capabilities
- Making the program areas and IT organization jointly accountable for outcomes tied to digital government efforts (see Figure 7)

Shaping Multidisciplinary Teams That Are Accountable and Collaborative
Sixty-seven percent of highly composable organizations establish collaborative multidisciplinary teams focused on value and transparency. Comparatively, 39% of municipal and district governments, 33% of state and provincial governments, and 49% of national governments or international organizations create these types of teams. The development of these teams into cross-functional fusion teams that include both IT and business unit personnel enables “composers” from each area of the department to effectively collaborate on digital transformation (see Fusion Teams: A New Model for Digital Delivery).

Designing Business Processes in Parallel With Technology Capabilities
Well-executed enterprise architecture establishes current and future state business and technology capability models. Enterprises that demonstrate high compositability are more likely to use these models to design or redesign business processes. The government respondents to the CIO survey identified that their organizations accomplish this at a similar rate regardless of tier; municipal and district governments — 40%, state and provincial governments — 43% and national governments and international organizations — 41%. All tiers trail highly composable organizations where 64% implement this practice.
Making the Program Areas and IT Organization Accountable for Digital Government Outcomes

Accountability for mission outcomes in a digital government must be the responsibility of all involved — executives, program leaders and IT leaders. They need to establish clear goals, objectives and metrics for their programs and products that are shared across all delivery channels.

Fifty-three percent of highly composable organizations state that they have accomplished this, while only 39% of municipal and district governments and national governments and international organizations, and 31% of state and provincial governments have done so (see Figure 7).

Figure 7: Comparison of the Use of Key Business-Architecture-Related Practices

<table>
<thead>
<tr>
<th>Key Business-Architecture-Related Practices to Improve Composability</th>
<th>Percentage of Respondents Who Perform It</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shape Multidisciplinary Teams to Align on Value, Promote Transparency, Drive Accountability and Collaborate on Demand</td>
<td>67% (High Business Composability), 39% (Municipal or District), 33% (State or Province), 49% (National or International)</td>
</tr>
<tr>
<td>Design Business Processes in Parallel With Technology Capabilities</td>
<td>64% (High Business Composability), 40% (Municipal or District), 43% (State or Province), 41% (National or International)</td>
</tr>
<tr>
<td>Distribute Accountability for Digital Outcomes Beyond the Traditional IT Organization to Other Business Units/Business Leaders</td>
<td>53% (High Business Composability), 39% (Municipal or District), 31% (State or Province), 39% (National or International)</td>
</tr>
</tbody>
</table>

Source: 2022 Gartner CIO and Technology Executive Survey
Composable Technology Practices
Highly composable organizations outpace all tiers of government respondents by a minimum margin of 19 points in the three differentiating practices related to the use of technology to improve composability:

- Scaling the use of iterative development techniques
- Access to platforms, tools and know-how
- Creating dynamic and easily deployable integration capabilities

(See Figure 8)

Scaling the Use of Iterative Development Techniques
Iterative development techniques are essential to creating a process that is responsive to users’ needs and drives continuous improvement. National governments and international organizations lead the other tiers, outpacing municipal and district governments by 19 points, and state and provincial governments by 15 points in their application of interactive development techniques according to the survey results. As an example for governments, human-centered design is a highly effective technique to place constituents at the center of these iterative processes and they should use this practice to improve their composability (see Case Study: Digital Transformation of a Legacy Paper-Based Process (U.N. Joint Staff Pension Fund)).

Access to Platforms, Tools and Know-How
State and provincial governments lead the effective adoption of platforms with 31% identifying that they are used with internal teams and external partners, followed by 24% of municipal and district governments and just 17% of national and international governments. A consistent approach to integration at all levels is a critical capability for composability; this can be enabled through the use of a digital government technology platform. Leading organizations are scaling their use through the implementation of a developers portal that serves all “composers” internal and external to the organization (see Drive Adoption of a Digital Government Technology Platform for Government Transformation).

Creating Dynamic and Easily Deployable Integration Capabilities
The integration of data and applications has been identified as an essential element of digital government since e-Estonia’s model was first understood. However, governments continue to lag behind other sectors and highly composable organizations in creating dynamic and easily deployable integration capabilities. Less than one-quarter of governments at any tier identify that they have established this level of integration capability (see Figure 8).
**Figure 8: Comparison of the Use of Key Composable Technology Practices**

**Key Technology-Related Practices to Improve Composability**

Percentage of Respondents Who Perform It

- High Composability (n = 142)
- Municipal or District (n = 72)
- State or Province (n = 69)
- National or International (n = 91)

**Composable Thinking**

- Educate governance and business leaders as to the importance of modular design in achieving their priorities in an efficient and cost-effective manner.
- Garner leadership’s support in reinforcing the use of reusable common capabilities across the enterprise by adjusting project and investment criteria to favor solutions that embody this approach.
- Establish policies to support the composable government enterprise by requiring that applications slated for modification are also reviewed at that time for opportunities to decompose them into business capabilities. Policies must include criteria and governance for determining when taking this action is most advantageous.

**Composable Business Architecture**

Direct the enterprise architecture program to develop or update the business and technology capability models across the organization. The enterprise architecture program should then identify common business capabilities used across multiple programs to establish a roadmap for decomposing existing systems.

**Action Plan**

The following are actions government CIOs must take to mature the adoption of key practices of composability:

**Composable Thinking**

- Educate governance and business leaders as to the importance of modular design in achieving their priorities in an efficient and cost-effective manner.
- Garner leadership’s support in reinforcing the use of reusable common capabilities across the enterprise by adjusting project and investment criteria to favor solutions that embody this approach.
- Establish policies to support the composable government enterprise by requiring that applications slated for modification are also reviewed at that time for opportunities to decompose them into business capabilities. Policies must include criteria and governance for determining when taking this action is most advantageous.

**Composable Business Architecture**

Direct the enterprise architecture program to develop or update the business and technology capability models across the organization. The enterprise architecture program should then identify common business capabilities used across multiple programs to establish a roadmap for decomposing existing systems.
Composable Technologies

- Work with solution architects to implement a digital government technology platform architecture that will support a modular approach to development and implementation by creating fusion teams that include packaged business capabilities.

- Enable a hybrid approach to integrating on-premises and cloud solutions by implementing or modernizing an enterprise approach to integration using an enterprise integration platform as a service.
Actionable, objective insight

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  Download Now

- Webinar
  Gartner Top Predictions for Healthcare & Life Sciences in 2022
  Discover market dynamics shaping the future of healthcare.
  Watch Now

- Resource Hub
  CIO Insights & Tools
  Drive stronger performance on your most critical priorities.
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