Consumer packaged goods lags other industries in transforming to digital, but large players are increasing their IT spending to accelerate growth.

MEDIAN IT OPERATING EXPENSES AS A PERCENTAGE OF REVENUE (%)

Source: BCG 2021 CPG IT benchmark survey.
Note: IT operating expenses include depreciation. Annual benchmarks include company data from the most recent fiscal year.
As budgets expand, large CPG companies have poured nearly half of their IT project spending into digital innovation.

IT project spending is increasing …

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Capital and Operating Expenses as a Percentage of Revenue (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2016</td>
<td>0.49</td>
</tr>
<tr>
<td>FY 2018</td>
<td>0.53</td>
</tr>
<tr>
<td>FY 2020</td>
<td>0.75</td>
</tr>
</tbody>
</table>

…and companies are prioritizing funding for digital transformation, AI, and innovative tech capabilities.

Average Mix of IT Project Spending by Type (%)

- Enhancing legacy technology: FY 2018: 38%, FY 2020: 26%
- Software and hardware upgrades: FY 2018: 29%, FY 2020: 29%
- Innovative tech-enabled capabilities: FY 2018: 32%, FY 2020: 45%

Source: BCG 2021 CPG IT benchmark survey.
To maximize their results, CPG companies must concentrate their IT innovation efforts in three key areas:

**AI at scale**
- Convert multiple small-scale AI pilots into a few high-value, large-scale AI implementations
- Partner with the business to take end-to-end ownership of AI, including driving behavior change and mass adoption

**Digital capabilities that matter**
- Create a supply chain that is highly visible, intelligent, and responsive
- Build capabilities that improve online retail performance and first-party consumer data gathering

**Agile operating model**
- Move beyond agile development methods to adopting an agile operating model
- Take a flexible approach to implementing agile without compromising core principles

Source: BCG 2021 CPG IT benchmark survey.
Adopting AI at scale in a few high-value use cases can reduce costs, increase revenue, and lift operating income.

Customer-facing use cases offer the greatest potential for growth and competitive advantage, even for companies with existing large-scale AI.

Significant opportunity to use manufacturing analytics to reduce the cost of goods sold.

Source: BCG 2021 CPG IT benchmark survey.
Note: A&P = advertising and promotion.
Leaders in IT innovation investment spending outpace the industry in adopting AI at scale

Leaders have 2X to 3X higher adoption of enterprise-wide AI use cases than laggards ...

Adoption of AI at scale in analyzed use cases

- Leaders: 33% (average), 83% (maximum)
- Laggards: 15% (average), 33% (maximum)

Average IT innovation investment as a percentage of revenue

- Leaders: 0.52%
- Laggards: 0.08%

+44 basis points higher investment

... and have deployed more AI in operations

Percentage of companies with large-scale implementations in operations use cases

- Leaders: 56%
- Laggards: 22%

Source: BCG 2021 CPG IT benchmark survey.

Note: Leaders are defined as the top quartile of benchmark companies by total innovation spending; laggards are defined as the bottom quartile.
When IT is more heavily involved, packaged goods makers are more likely to adopt AI at scale

INCREASE IN ADOPTION OF AI AT SCALE AT DIFFERENT LEVELS OF IT INVOLVEMENT

**Limited IT involvement**
- Develops solutions to absorb and integrate data sources
- Evaluates and selects vendors

**Moderate IT involvement**
- Identifies requirements, and designs AI-at-scale use cases
- Creates plans to design, architect, and scale up use cases

**Heavy IT involvement**
- Develops and executes use cases
- Runs scaled implementation of AI, including driving behavior change and mass adoption

Source: BCG 2021 CPG IT benchmark survey.
A digitally enabled supply chain is a must-have capability that is driving ambitious technology investment increases.

**DIGITAL CAPABILITIES THAT MATTER**

**PERCENTAGE CHANGE IN INVESTMENT OVER THE NEXT THREE YEARS**

- **Data and analytics**
  - Algorithms and data to predict demand and make data-driven manufacturing decisions (173% increase)

- **End-to-end integration**
  - Collaboration across the entire supply chain to enable better decision making (175% increase)

- **Technology foundation**
  - Investments in analytics tools and hardening of the supply chain infrastructure (55% increase)

Source: BCG 2021 CPG IT benchmark survey.
### Digital Capabilities That Matter

CPG makers are disproportionately accelerating efforts to add capabilities for supply chain visibility, planning, and forecasting.

<table>
<thead>
<tr>
<th>USE CASES</th>
<th>INDUSTRY ADOPTION RATE (%)</th>
<th>OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand sensing</td>
<td>12 ● .......................... ● 41</td>
<td>Accurate and advanced demand forecasting based on current realities of the supply chain</td>
</tr>
<tr>
<td>Scenario-based capacity and supply planning</td>
<td>18 ● .......................... ● 41</td>
<td>Rapid analysis of possible outcomes of various scenarios in order to plan for disruptions</td>
</tr>
<tr>
<td>Control tower</td>
<td>3 ● .......................... ● 38</td>
<td>Visualization of the current state of operations to understand, prioritize, and resolve critical issues in real time</td>
</tr>
<tr>
<td>Digital twins</td>
<td>6 ● .......................... ● 26</td>
<td>Simulation and automation of supply chain decisions</td>
</tr>
<tr>
<td>Multi-echelon inventory optimization</td>
<td>3 ● .......................... ● 24</td>
<td>Ability to suggest correct inventory levels at each stage of the supply chain across multiple echelons and locations</td>
</tr>
<tr>
<td>Warehouse management</td>
<td>12 ● .......................... ● 24</td>
<td>Enhancement of warehouse productivity, picking accuracy, and visibility by tracking from collection to delivery</td>
</tr>
<tr>
<td>Factory scheduling</td>
<td>3 ● .......................... ● 21</td>
<td>Improved production and manufacturing resource allocation to optimize speed and reduce downtime</td>
</tr>
</tbody>
</table>

Source: BCG 2021 CPG IT benchmark survey.
Go-to-market investments should bolster first-party consumer data capabilities and drive online retail sales

Three keys to better go-to-market performance in consumer packaged goods

- Create a roadmap for collecting first-party consumer data
- Improve online performance through digital retail collaboration
- Where appropriate, increase direct-to-consumer sales

Source: BCG 2021 CPG IT benchmark survey.
**DIGITAL CAPABILITIES THAT MATTER**

CPG makers that don’t prioritize adding first-party consumer data gathering capabilities risk falling behind.

**PERCENTAGE OF COMPANIES LAUNCHING SPECIFIC GO-TO-MARKET CAPABILITIES IN THE NEXT 18 MONTHS (%)**

<table>
<thead>
<tr>
<th>First-party data</th>
<th>Digital retail collaboration</th>
<th>Direct-to-consumer e-commerce</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct consumer engagement and loyalty</td>
<td>74</td>
<td>59</td>
</tr>
<tr>
<td>360-degree consumer-data platform</td>
<td>74</td>
<td>56</td>
</tr>
<tr>
<td>E-commerce partnership</td>
<td>Digital collaboration to sell through a retailer's site or marketplace</td>
<td>CPG-owned e-commerce or direct-to-consumer site</td>
</tr>
<tr>
<td></td>
<td>360-degree consumer-data platform</td>
<td>56</td>
</tr>
</tbody>
</table>

Source: BCG 2021 CPG IT benchmark survey.
CPG companies need to materially accelerate their adoption of an agile operating model to successfully deliver the digital capabilities that matter ...

Source: BCG 2021 CPG IT benchmark survey.

### AGILE OPERATING MODEL

| Percentage of the IT Organization Using Specific Elements of Agile at Scale |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| **Culture, behavior, and leadership** | **Governance and funding** | **Processes** | **Team structure** | **Measurement** |
| Autonomous teams operate with trust and empowerment | Product-based funding model with frequent assessments of progress and outcomes | Iterative ways of working with product demos rather than presentations | Accountable product owners from the business lead cross-functional teams | Teams and individuals are accountable for creating business value |

7% 13% 10% 6% 6%
... But companies should take a pragmatic and flexible approach to implementing agile, while keeping core principles intact

Companies opt for agile models that reflect business functions and available resources

<table>
<thead>
<tr>
<th>OPERATING MODEL ELEMENT</th>
<th>AGILE PRINCIPLE</th>
<th>FIT-FOR-PURPOSE AGILE</th>
<th>TRUE AGILE AT SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture, behavior, and leadership</td>
<td>Trust and empowerment</td>
<td>· Frontline business leader owns decisions and directs product manager to implement specific features</td>
<td>· Product owner decides what business objectives to deliver and how to deliver them</td>
</tr>
<tr>
<td>Governance and funding</td>
<td>Funding</td>
<td>· Long-term (three months+) funding within the construct of project or capital approvals</td>
<td>· Permanently funded teams are structured around business outcomes</td>
</tr>
<tr>
<td>Processes</td>
<td>Iterative ways of working</td>
<td>· Two- to three-week sprints with quarterly or similarly long deployment cycles</td>
<td>· Iterative delivery and deployment every two to three weeks</td>
</tr>
<tr>
<td>Team structure</td>
<td>Cross-functional teams</td>
<td>· Teams drawn from relevant subsets of employee pools across functions and products</td>
<td>· Teams consist of dedicated, co-located, cross-functional employees</td>
</tr>
<tr>
<td></td>
<td>Accountability</td>
<td>· Shared between front-line leader and product manager</td>
<td>· Product owner is responsible for delivering end-to-end business value</td>
</tr>
<tr>
<td>Measurement</td>
<td>Success metrics</td>
<td>Use the same business outcomes to measure success</td>
<td></td>
</tr>
</tbody>
</table>

Source: BCG 2021 CPG IT benchmark survey.