

California Design Den: Driving higher profits with machine learning

California Design Den[®]

SLEEP COMFORTABLY. LIVE BEAUTIFULLY™

A relatively new brand of bed linens is successfully supporting its expansion into e-commerce and competing with large retailers by leveraging Google Cloud machine learning and artificial intelligence.

About California Design Den

California Design Den, an online fashion bedding brand, is the brainchild of Deepak Mehrotra, co-founder of NMK Textile Mills, an award-winning manufacturer of bed linens for retailers in the United States and Canada, with operations in India and China.

Industries: Retail & Consumer Goods

Location: United States, India

**Google
Cloud
Results**

50% revenue

Products: BigQuery
(<https://cloud.google.com/bigquery/>), Cloud

- Reduces inventory carryovers by 50%
- Improved demand planning accuracy quarter over quarter
- Gains deeper insights into individual SKU performance
- Improves profit margins

inventory carryover



About Pluto7

Pluto7 provides machine learning and artificial intelligence solutions for supply chains. The company's Planning In A Box is supply chain analytics software for SMBs.

For more than 10 years, NMK Textile Mills (<http://www.nmkmills.com/>) has manufactured linens for major retailers in the United States and Canada. As e-commerce exploded, the founder saw an opportunity to grow the business in addition to manufacturing bed linens. To serve retail customers, NMK Textile Mills reworked its complete supply chain to manufacture California Design Den (<https://www.californiadesignden.com/>), which became an

BigQuery (<https://cloud.google.com/bigquery/>)

Cloud SQL (<https://cloud.google.com/sql/>)

Compute Engine (<https://cloud.google.com/compute/>)

Cloud Storage (<https://cloud.google.com/storage/>)

Cloud Vision API (<https://cloud.google.com/vision/>)
artificial intelligence solutions for supply

Cloud AutoML (<https://cloud.google.com/automl/>)

Cloud Natural Language API (<https://cloud.google.com/natural-language/>)

G Suite (<https://gsuite.google.com/>)

Gmail (<https://gsuite.google.com/products/gmail/>)

Google Drive (<https://gsuite.google.com/products/drive/>)

e-commerce retailer selling its own fashion-forward products directly to consumers online.

With California Design Den's push into e-commerce, it became apparent the SMB company (with about 250 global employees) faced the same tough supply chain questions as large retail customers, including maintaining enough inventory to meet customer demand in a timely, efficient way.

California Design Den depended upon a myriad of systems to track its complex forecasting and reordering processes. Team members typically planned inventory manually using desktop spreadsheet software, which could lead to excess inventory. Accurately forecasting demand and supply was essential to the company's financial success—but it was also a challenge.

A couple years ago, California Design Den partnered with [Pluto7](https://www.pluto7.com/) (<https://www.pluto7.com/>), a technology solutions provider that offers a software as a service (SaaS) called [Planning In A Box](https://www.planninginabox.com/) (<https://www.planninginabox.com/>). Leveraging [Google Cloud Platform](https://cloud.google.com/) (<https://cloud.google.com/>) machine learning and artificial intelligence, Planning In A Box intelligently helps predict demand and balances it with supply.

But that was just the beginning. "Along the way, we realized that to compete with larger retailers, make quicker decisions, and move faster, we needed to go

further,” says Deepak Mehrotra, Co-founder and Chief Adventurer at California Design Den.

With guidance from Pluto7, California Design Den began migrating its database to Google Cloud Platform. Using [Google BigQuery](https://cloud.google.com/bigquery/) (<https://cloud.google.com/bigquery/>), [Google Compute Engine](https://cloud.google.com/compute/) (<https://cloud.google.com/compute/>), [Google Cloud SQL](https://cloud.google.com/sql/) (<https://cloud.google.com/sql/>), and [Google Cloud Storage](https://cloud.google.com/storage/) (<https://cloud.google.com/storage/>), and experimenting with [Google Cloud Vision](https://cloud.google.com/vision/) (<https://cloud.google.com/vision/>) and [Google Cloud AutoML](https://cloud.google.com/automl/) (<https://cloud.google.com/automl/>), the company is reducing inventory carryovers by more than 50%, improving the accuracy of demand planning quarter over quarter, and gaining granular insights into how individual SKUs are performing.

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No need for army of data scientists

“Using Google Cloud Platform machine learning and AI was essential for California Design Den if it was to compete successfully with larger retailers,” Deepak says.

For example, tastes and fashions in bed linens can change quickly and consumer prices fluctuate. With more than 2,500 SKUs, it wasn't possible for California Design Den's team to continuously monitor product

demand and experiment with competitive pricing in real time.

“We would need an army of data scientists to make faster decisions on pricing and inventory levels,” says Deepak. “With Google Cloud Platform machine learning and artificial intelligence, we don’t need that. We can make much faster pricing decisions to optimize profitability and move inventory.”

By integrating all its data onto Google Cloud Platform, California Design Den’s team gains deeper insights into product sales over time, which in turn helps the company improve demand planning by better determining which styles to manufacture and sell in the future.

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Merging visuals with data

Before Google Cloud Platform, team members had to dig through spreadsheets and run scenarios to get a sense of how particular products had sold. The next step was to perform keyword searches across the company's photo library in the cloud to find each product's image. From there, a team member would insert the product images into a presentation, along with relevant data points, to provide a report for stakeholders on how particular styles performed.

Today, California Design Den, with the help of Pluto7, is integrating its entire product image library with its database on Google Cloud Platform. Experimenting

with Google Cloud Vision and Google Cloud AutoML, California Design Den is moving towards a day when team members can run sales scenarios and get deep background data on individual product performance while viewing images of the relevant products.

Merging product visuals with data will help designers and team members better understand sales patterns over time and in context. In the past, making correlations between things like which sheet colors sold well in California, compared to how the same sheet colors performed on the East Coast, was something that California Design Den employees primarily did in their heads.

“When experienced employees leave, their knowledge goes with them,” says Manjunath Devadas, Founder and CEO at Pluto7. “By having all data in one place, and with machine learning and AI, California Design Den can go back in its history, look at products made or sold years ago, and analyze product performance.”

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Reimagining supply-demand balancing

Pluto7’s mission statement is to democratize supply demand balancing with machine learning and AI.

California Design Den is a case in point, as the combination of Planning In A Box and Google Cloud Platform gives the company greater control over its destiny.

“Big retailers used to tell us what to manufacture and how much they would pay for it,” says Deepak. “That was our primary business, and if we didn’t accept the terms, a competitor would.” Today, in addition to continuing to make products for retailers, California Design Den can design, make, and sell a variety of designs for itself, including custom and limited-edition

products, thanks to Google Cloud Platform and Pluto7 software offerings. The payoff is not only in having a more diversified business. California Design Den also receives more favorable profit margins by selling its own products.

“We are literally growing the complexity of our business on all levels, including designing, manufacturing, selling, reordering, inventory holding—everything,” Deepak says. “We can make smaller batches. We can connect directly with consumers. We can identify the missing pieces—what should we produce next, when, and how much? We otherwise couldn’t afford the level of talent it would take to do this.”

Cutting through the noise

Google and Pluto7 software helped California Design Den reduce inventory carryovers by more than 50%. Inventory tracking and distribution, along with insights and visibility into product sales, are faster, more efficient, and accurate. Google Cloud Platform flexible pricing, speed, reliability, security, and scalability enable California Design Den to stay relevant and be more competitive.

In addition to benefiting from Google Cloud Platform, California Design Den relies on **G Suite** (<https://gsuite.google.com/>)—also part of Google Cloud—to enhance collaboration among its global teams. Previously, the company’s email server would

sometimes crash, due to the heavy load of sharing product photos and other data. “[Gmail](https://gsuite.google.com/products/gmail/) (<https://gsuite.google.com/products/gmail/>) and [Google Drive](https://gsuite.google.com/products/drive/) (<https://gsuite.google.com/products/drive/>) handle the everyday demands on the business effortlessly and reliably,” Deepak says.

“Google machine learning and AI enable us to cut through all the noise from raw data, so we can see what’s important. We can focus on analytics to guide us to success today and in the future.”

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The company is exploring additional ways to leverage Google Cloud Platform in the near future. For example, one possibility is to import customer reviews from sites where products are sold into Google BigQuery, and to use that data to perform sentiment analysis via [Google Cloud Natural Language](https://cloud.google.com/natural-language/)

(<https://cloud.google.com/natural-language/>). It could provide another valuable data source to help California Design Den's team decide where to focus future designs.

"Google machine learning and AI enable us to cut through all the noise from raw data, so we can see what's important," Deepak says. "We can focus on analytics to guide us to success today and in the future."