/anaplan

The blueprint for connected planning and decision-making

Anaplan's platform, explained

Isolated point solutions and standalone spreadsheets are yesterday's solutions for planning across departments. Today, the Anaplan platform is driving a new age of connected planning. Our platform delivers a single real-time, cloud-based environment that can help you accurately plan and optimize, quickly respond to change as a department or organization, and seamlessly align across the entire business to meet business objectives.



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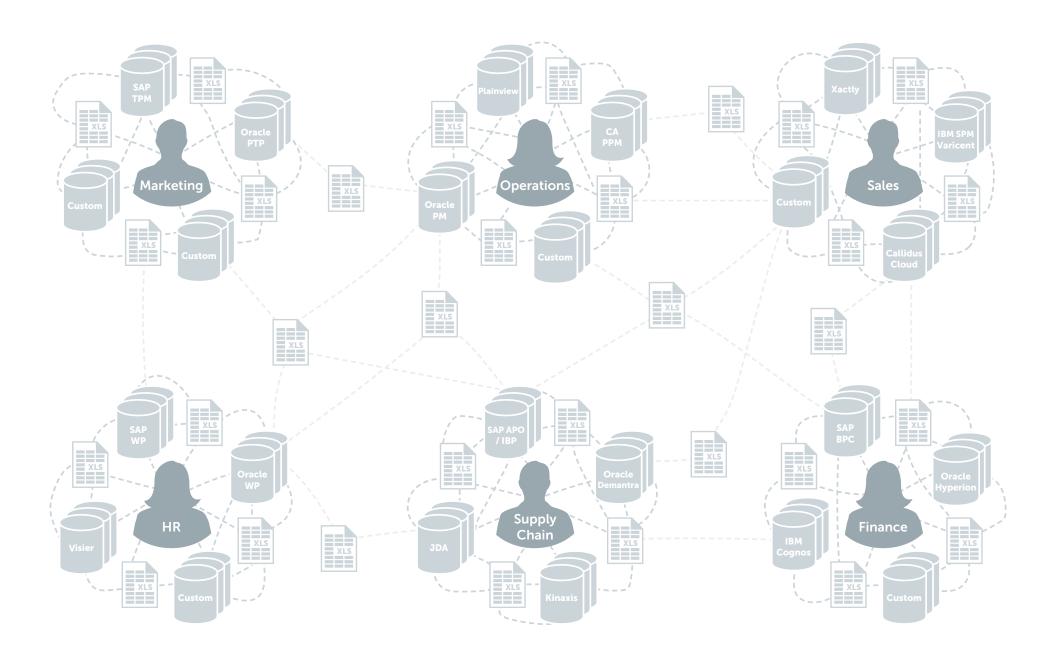


Figure 1: Typical landscape of countless spreadsheets and point solutions leading to poor business planning and performance management.

Planning and performance management applications have historically fallen into the following categories:

- Corporate performance management (CPM) led by finance
- Sales performance management (SPM) led by sales
- Workforce planning led by human resources
- Supply chain planning (SCP) led by operations

Since the 1990s, software vendors have had success building point solutions to solve specific planning problems. In CPM, for example, Hyperion, Cognos, and OutlookSoft innovated on-premise solutions using the advances in technology of the time to enable multi-user financial planning.

These solutions typically included some modeling capabilities, but within tight constraints. This lack of flexibility drove many companies to model business questions in spreadsheets, recording only the final "answers" in the tools that support the budgeting and forecasting process. In the last 10 years, cloud vendors have emerged, overcoming some of the challenges of their predecessors, but still lacked scalability and sufficient flexibility in modeling.

Supply chain planning blossomed as well, with i2 and Manugistics taking the lead in the 1990s. By nature, these solutions were more focused on complex "black-box"

algorithms to define and balance supply and demand. Collaboration and modeling capabilities were very rudimentary, even for collaborative processes like consensus demand planning. ERP vendors also jumped on the bandwagon, but added little innovation.

As a result, low adoption of these legacy tools and proliferation of spreadsheets are the norm at enterprises today. Emerging vendors like Kinaxis are having success with improved usability and simplified, faster algorithms, while SAP, a legacy vendor in this area, is attempting to innovate with HANA (High-Performance Analytics Appliance), an in-memory database technology.

Sales performance management (SPM) has been served in a more limited way than CPM and SCM. Even today, only a few vendors provide the ability to calculate incentive compensation, and planning functionality is limited to certain practices or industries. However, SPM planning needs, such as territory and quota planning and compensation planning, largely remain unmet since SPM vendors have not invested in modeling flexibility, the ability to test assumptions with "whatif" scenarios, and real-time calculations on large datasets. Complex, time-consuming, spreadsheet-based processes still prevail in sales organizations big and small.

The cost of silos

This landscape of spreadsheets and point applications demonstrates how disconnected organizational planning silos lead to sub-optimal business performance for each business function—such as HR, finance, sales, marketing, and operations—and hinders the speed at which the business can make changes. This effectively prevents the entire company from planning collaboratively, making joint decisions, moving forward with common goals, and rapidly adjusting to unforeseen changes.

Emerging point applications attempt to bridge disconnected applications such as sales and operations planning, control tower, and integrated business planning. However, this strategy of creating more point applications is counterproductive and adds complexity, latency, and duplication of data and planning process steps. The result? An even more bloated landscape of point applications and spreadsheets.

The cost of planning and managing performance in departmental silos with inadequate tools can be staggering. On one hand, incomplete, inaccurate plans result in lost revenue and market share due to sales ineffectiveness, slower time to market, and the unavailability of goods and

services. On the other hand, companies see higher costs due to operational inefficiencies, such as underutilization of resources and increased inventory. Because of the inefficiencies in a siloed approach, companies continually incur the costs of (1) hardware and software infrastructure of countless systems, including data integration tools; (2) manual data prep, copy/paste, and corrections from systems and spreadsheets; and (3) inefficient processes that squander hours from planners and executive decision-makers.

Another significant area of cost frequently overlooked is that of shadow IT—i.e., tools and data flows used inside organizations without IT governance. The use of spreadsheets, email, and business-owned databases for planning and collaboration falls in the category of shadow IT and poses a great security risk. Confidential information is stored and distributed without encryption, is not backed up, and can easily be leaked within and outside the company.

Additionally, with ever-increasing regulations such as Sarbanes-Oxley, PCI, GAAP, and HIPAA, processes enabled by shadow IT are also a growing risk with regards to internal and external compliance.

Connect your data, people, and plans

To achieve greater speed in planning and make more impactful decisions for your business, you need a solution that connects your data, people, and plans in one place. With Anaplan, you can:

Connect your data to create a single, secure source of planning and decision-making data that spans your business.

Connect your people to achieve deeper insights and better alignment with simultaneous, real-time planning.

Connect your plans and enable dynamic, continuous planning for any and all areas of your business.

Finance
Sales
Supply Chain
Workforce
Marketing
IT

Scenarios should be easily created and shared, and speed and scale become even more important when performance management and planning span multiple processes. In fact, it becomes a big data problem due to the volume of data and the number of calculations, with trillions of planning cells. In Figure 2, we see that a connected planning platform, in contrast to a point solution, should support the four key planning and performance management disciplines, and unite them at the strategic, tactical, and operational levels.

Such a platform optimizes plans and performance both within and across business functions, and enables organizations to unlock the value of more accurate plans produced more quickly and collaboratively—without the burden of a complex systems infrastructure and spreadsheets.

Figure 2: Planning and performance management processes integrated across business functions, from strategic to operational levels.



Data

Single, secure source of planning and decision data



People

Greater collaboration, deeper insights, faster alignment



Plans

Dynamic, continous planning for ay area of your business

Understanding the vendor landscape today

CPM: Corporate performance management

In CPM, we have the traditional players—Cognos, BusinessObjects, and Hyperion—which were acquired by the large legacy vendors—IBM, SAP, and Oracle, respectively. Sometimes, these on-premise financial planning solutions, which have had little innovation since being acquired, are made available in the cloud but lack the benefits of a cloud-first solution, such as multitenancy, frequent releases, and a lower total cost of ownership. These traditional CPM solutions are characterized by lack of product innovation, slow performance (including batch calculations), poor usability, inflexibility, and consequently, low adoption across the business.

More recently, several truly cloud-based, multitenant solutions have emerged, including Host Analytics, Adaptive Insights, and Tidemark. Generally, these vendors have overcome usability issues for end users by employing contemporary user experience paradigms and new user interface (UI) technologies. However, these vendors also have typically struggled to provide business planning and consolidation in large enterprises and even flexible modeling for smaller enterprises. Let's examine why that's the case.

Host Analytics and Adaptive Insights have lacked the in-memory computing capabilities required to scale for large data volumes and more complex financial calculations. Recognizing this, Host released in April 2015 a first version of in-memory planning—and given the complexity of a planning engine, one can expect that it will take time to beta test and be migrated and adopted by existing customers. There is speculation that Adaptive Insights

may also be re-architected from disk-based to in-memory computing in the future.

The newest kid on the SaaS block, Tidemark, avoided disk-based computing and uses "off-the-shelf" in-memory computing, which can scale not just with a better-performing server or cores, but across servers (which is technically known as horizontal scaling). However, this type of in-memory computing is optimized for analytics and not for planning—especially planning that requires flexible business-specific planning models. Additionally, horizontal scaling for planning use cases, where data is not just viewed but changed, results in longer calculation times using this generic in-memory technology (Tidemark uses opensource Apache Hadoop). This is because a top-down change—for example a "product family"—is disaggregated (using what is sometimes called "break-back") to lower-level details such as countries and spread across servers or cores.

These calculations across servers have business-related interdependencies, creating the need to communicate calculation dependencies and data physically across servers. After disaggregation and bottom-up calculations are completed, aggregation of data across servers is needed to see the top-down effect at an aggregate view, further requiring cross-server (or cross-core) information transfer. Unfortunately, this type of horizontal scaling, while allowing for larger datasets, is a fundamental obstruction to speed of planning calculations. Ironically, this performance bottleneck is similar to that of disk-based computing where information is transferred to and from disk and RAM.

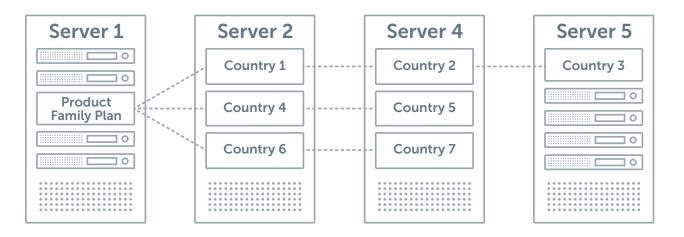


Figure 3: An illustration of sub-optimal horizontal scaling with a product family plan as an aggregation across seven countries.

The corresponding data and calculations are consequently spread across four physical servers, obstructing speed of planning calculations.

Following these cloud vendors, it should be mentioned that SAP released a new cloud financial planning product in early 2015: SAP Cloud for Planning. It is extremely rare that SAP builds a cloud application (acquisitions are typically the norm).

Similar to smaller cloud vendors, SAP's solution makes a good visual impression with its user interface. Surprisingly, although SAP Cloud for Planning was not merely an on-premise solution forced into the cloud, the solution is not multitenant—and it is very difficult to re-architect from single tenancy to multitenancy.

Moreover, SAP has not proven that it has cloud competency in terms of both building successful true cloud products and maintaining the necessary cloud operations. SAP Business ByDesign is an example of perhaps the most-costly failed cloud initiative in software history. Likewise, SAP's newly acquired cloud companies

like SuccessFactors and Concur are managed separately from SAP's core, where SAP Cloud for Planning resides.

In-memory computing is part of SAP's strategy, leveraging SAP HANA. However, HANA is an analytics database heavily used on-premise for small sets of users, and, per its name, is not intended for planning (e.g., it does not allow users to make changes to plans). This leads to performance bottlenecks when modifying plans and viewing resulting calculations.

Another side effect of HANA is that horizontal scaling across servers and cores is not supported for planning use cases. No doubt it will take time for the newest of the CPM products to mature and stabilize, especially from a company unfamiliar with the cloud. There is no confirmation that SAP will take on the vast effort to re-architect for multitenancy, speed of planning changes, and horizontal scaling.

In addition to scalability being insufficient for larger datasets and real-time calculations, the aforementioned CPM cloud vendors, as well as SAP Cloud for Planning, have had difficulties addressing large enterprise needs due to insufficient modeling capabilities. Even smaller companies have challenging modeling needs due to their industry-specific revenue modeling requirements, the use of driverbased forecasting and "what-if" scenarios, consolidation rules, or their hyper-growth nature. Modeling flexibility is lacking, making room for spreadsheet proliferation.

Just as importantly, these cloud vendors lack the ease of use to enable business users to update models easily and in real time to reflect changing business assumptions. In fact, some vendors like Tidemark resort to technical syntax and scripting by experts with programming skills for making changes to models.

SPM: Sales performance management

Sales performance management's planning needs—for example, incentive comp, sales forecasting, and territory and quota management—historically were met by Excel® and on-premise solutions. An early pioneer, CallidusCloud, was followed by Varicent (now an IBM offering with onpremise and hosted single-tenant options) and pure cloud players, like Xactly (multitenant). Surprisingly, none of these established vendors cover the range of planning needed for SPM and related areas. For example, Callidus SPM does not cover sales forecasting, while Xactly does not support territory and quota planning. Hence, there is a great opportunity for a common planning platform to enable planning across SPM and related areas.

Though some provide the advantage of a multitenant cloud, the Achilles heel of all SPM vendors is two-fold. First, none use in-memory technology to enable planning and thus lack the ability to scale for large sales teams or more complex planning models. Second, the vendors lack flexible modeling and remodeling capabilities to adapt to evolving sales-related planning practices. As a result of these two planning deal-breakers, we see complex, error-prone, Excel® template—based processes widely employed for SPM.

Supply chain planning

Supply chain planning (SCP), whether for demand or supply planning, traditionally consists of automated "black-box" planning algorithms, which produce unpredictable results and ignore the insights of supply chain planners. Solutions such as i2, Manugistics, and SAP's APO suffer from low usability, long batch-process calculations, and hence low adoption, which all contribute to Excel's dominance in this space. Unlike SPM, there are some in-memory players like

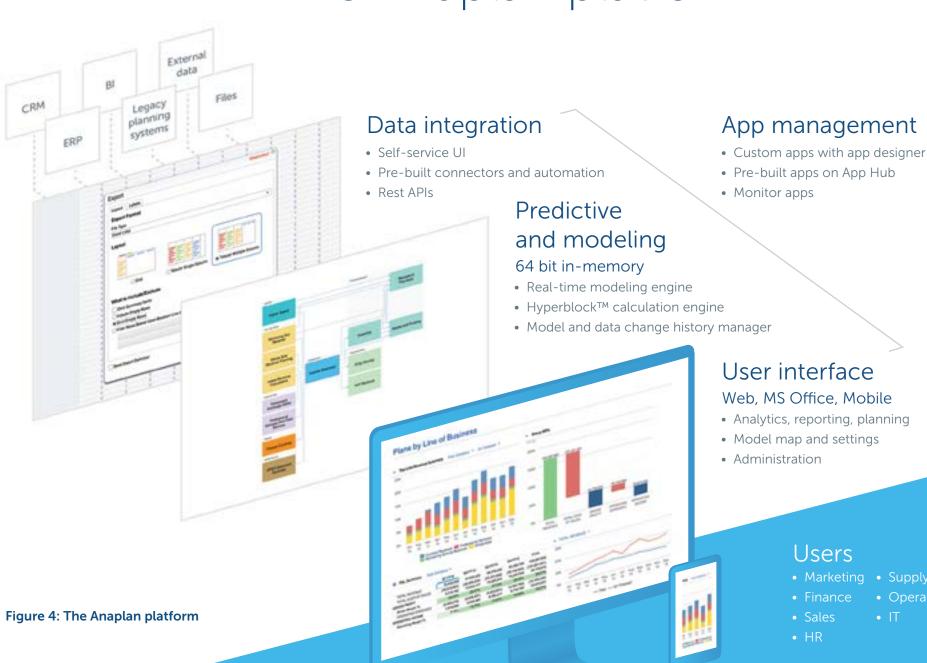
Kinaxis and i2 (now JDA). However, many are disk-based, like Steelwedge, or have obsolete hybrid disk/in-memory architectures, like SAP's APO and UIs from the 1990s. All lack the ability to scale horizontally. SAP's newer IBP solution, similar to SAP Cloud for Planning, uses SAP HANA, which suffers from performance issues since HANA is not intended for planning, but rather big data analytics, as mentioned earlier in this document. Oracle's Demantra is a dated, on-premise, disk-based architecture.

In terms of cloud maturity, the aforementioned SCP vendors have not caught up with CPM or SPM. Cloud vendors Steelwedge and Kinaxis have dated on-premise architectures, which were placed in the cloud. SAP Integrated Business Planning (also known as SAP Sales and Operations Planning) is also available on-premise (due to its on-premise architecture). It's no surprise that none of the SCP solutions are multitenant.

In terms of modeling, supply chain planning solutions either have no modeling or, at best, have very rudimentary functionality (like demand planning solutions and sales and operations [S&OP] solutions) to be used by programmers or senior consultants. Modeling limitations are in fact impeding SCP process maturity, which requires more financial and KPI (key performance indicator) modeling to understand the impact of supply-demand balancing scenarios.

In summary, SCP presents a great opportunity for an inmemory, scalable, multitenant platform. Such a planning platform would unify the currently disjointed planning domains (demand planning, capacity planning, MRP, supplier collaboration, production planning, detailed scheduling, inventory optimization, demand sensing, response management, etc.).

The Anaplan platform



Used by hundreds of customers across dozens of industries, Anaplan is the only comprehensive platform fulfilling planning needs across the enterprise, supporting planning in any business function, including sales, HR, finance, marketing, services, operations, supply chain, and IT.

Let's examine why Anaplan is groundbreaking in terms of (1) enabling technology, (2) modeling capabilities, and (3) user interface. We will explore the platform's enabling components in the remainder of this paper.

The cloud has proven itself as the optimal choice for customers to experience software. While most planning vendors have a cloud deployment model, very few are truly multitenant

Multitenancy offers the essential cloud benefits of synchronized software versions (allowing for higher software quality, higher SLAs, and access to the latest functionality) and lower operational costs. This is because most cloud planning products are on-premise software masquerading as something more than hosted (especially larger legacy and SCM vendors).

In contrast, Anaplan was built only for secure cloud consumption and has the cloud know-how in terms of its people, its mature cloud operational processes, and experience with its large and growing SaaS customer base.

Anaplan is not only multitenant but also inmemory, the proven instrument for speed and scale. Not surprisingly, other vendors are starting to follow suit, employing in-memory rather than disk-based computing.

However, not all in-memory planning is equal. Only Anaplan can scale for more complex models and for large enterprises, since the platform does not use off-the-shelf in-memory computing, but instead has a patented in-memory, Java-based planning engine. In particular, the patented Anaplan Hyperblock™ technology is optimized for planning and not merely analytics, unlike SAP HANA.

What's more, Anaplan's unparalleled modeling flexibility makes it possible for Anaplan customers to scale horizontally across hardware without compromising speed, unlike off-the- shelf frameworks such as Apache Hadoop. Only Anaplan offers scalable in-memory technology and is, in fact, unique in its ability to handle trillions of planning cells for thousands of users across multiple models for a given customer.

Figure 5: Measurement of Anaplan customer usage reflecting both unmatched scaling and adoption across planning use cases.

Performance measure	Anaplan's customer proof point
Cells	Trillions of cells used for planning across models for some customers
Users	Thousands of users for some customers
Models	Thousands of models for some customers

Anaplan's modeling innovations

Next, let's get into modeling, the foundation of planning and performance management. Only Anaplan modeling can do justice to the spectrum of disciplines within CPM, SPM, SCM, workforce planning, and beyond. Anaplan is not just another point solution that's limited to one discipline, but rather the first comprehensive planning and performance management platform. This is not a theoretical claim—we believe it's validated by Anaplan customers creating apps with models across these areas, the wealth of diversity on the Anaplan App Hub (the planning app exchange), and analyst evaluations.

For example, the 2017 Gartner Magic Quadrants placed Anaplan in the Leaders quadrant for SPM¹ and Visionary quadrant for CPM.² Additionally, 40 percent of Anaplan customers are using Anaplan for more than three use cases. The modeling flexibility ensures high adoption by the business, and enables automation via business rules and predictive analytics techniques such as statistical forecasting. Some SCP, S&OP, and CPM point-solution providers have tried to take a first step into becoming platforms by venturing into new areas like planning for the sales organization, but have had minimal success.



Modeling differentiators	Benefits	
Flexibility to model any planning use case	Build more accurate models of any planning and performance management process, including CPM, SPM, SCP, and workforce planning, from strategic to operational levels. Includes time series and order/opportunity modeling and complex KPIs.	
Integrate planning across all use cases	Integrate plans across all use cases in real time, avoiding transfer of data from point applications and spreadsheets. Enable integrated business planning at strategic and operational levels across CPM, SPM, workforce planning, and SCM.	
Real-time model adjustments	View and validate impact of modeling assumptions on plans and KPIs in real time.	
Excel® formula-like calculation definitions	Define business rules and calculations without using technical expressions, scripting, or coding.	
Real-time hierarchy management	Allow business users to change hierarchy definitions in real time, using drag-and-drop functionality.	
Real-time "what-if" scenarios on plans and master data	Let business users create scenarios on-the-fly to test assumptions and optimize projected outcomes. Allow changes to scenarios based on master data in real time (e.g., new products, customers, new hierarchy definitions). Leverage predictive analytics for additional foresight into your business performance.	
Model change history	Understand and audit changes to your models and revert back to older model versions.	
Data change history	Understand changes and change drivers to your plans. Provide transparency to cross-functional planning.	
App building	Enable business users and partners to turn models into apps without coding, including dashboards, reports, and models.	
App Hub	Download, publish, and exchange apps to speed up implementation and sharing of best practices.	

What's also exceptional is that Anaplan model changes happen in real time and not as a batch process like other applications. Adding dimensions, changing a hierarchy, adding a new type of plan, or changing a calculation is reflected immediately in dashboards and reports. This allows for more rapid iterative changes to models, thanks to the Hyperblock™ calculation engine. And only Anaplan has a full change history—not only for the numbers, but for all model changes for analysis, auditing, and even recovery of past model versions.

Unlike other vendors, the Anaplan platform enables business applications (apps), to be created and exchanged. Anaplan empowers business users, consultants, and partners to create apps by easily defining sophisticated models and the needed UI with no programming or scripting. The apps can then be exchanged on the Anaplan App Hub to share best practices and speed up implementations. There are over 200 Anaplan and partner-created apps on the App Hub as of May 2017. Look for other vendors to follow in Anaplan's footsteps at some point in the future, but in a very limited fashion, and

focusing on point solutions in certain domains like financial planning, but without the ability for the business to easily create apps.

To support these wide-ranging use cases, Anaplan is designed to integrate any data from any source. Data integration can be self-service to allow the business to get started quickly via the Anaplan UI. ETL (extract, transform, load) tools and other automated methods like Anaplan Connect provide more sophisticated, scalable options. Predefined, bidirectional Anaplan connectors with MuleSoft, SnapLogic, Informatica, and Boomi ETL tools quickly connect the Anaplan platform to SaaS applications like Salesforce.com, Workday, and NetSuite, as well as ERP vendors like SAP and Oracle. Customers can also build custom integrations via Anaplan's REST APIs. Unlike other planning vendors, Anaplan lets you quickly link your various Anaplan models together, allowing you to, for example, integrate sales and finance with supply chain. This avoids the data integration projects mandated with other vendors to integrate their point solutions, not to mention Excel® spreadsheets.

Anaplan's real-time user experience

What makes the Anaplan user experience so unique? To start, all changes to plans or the model happen in real time for Anaplanners. This breaks the traditional planning routine of waiting minutes and hours, if not overnight, for plan changes and interrelated calculations to process. After changing a cell, there is no extra button to click to save or submit changes, and the numbers impacted by the change, like revenue or inventory, update immediately. This is a tremendous paradigm shift in user experience due to Anaplan's unmatched architecture. Likewise, changing a model definition or master data becomes a welcomed swift event.



User interface differentiators	Benefits
Immediately render plan and model changes to all views	Understand impact of plan, master data, and model changes in real time without additional clicks.
Combined planning, reporting, and analytics	Simplified user experience allowing planning and analysis (and master data maintenance) to occur simultaneously on the same view. Reduced training time.
Interactive pivoting for planning and reporting	Allow business users to pivot their views for planning, reporting, and dashboarding for ad-hoc analysis and planning at multiple levels. Avoid redefining multiple sets of views.
Single, consistent, business user-friendly UI	Simplified user experience and reduced training time with one UI for planning, modeling, and administration. Allow business users to entirely own and maintain the application.
Model Map visualization	Build, understand, and update models more quickly.

To support this immediacy, Anaplan has a single consistent UI that allows Anaplanners (with the right permissions) to make model changes and view dashboards and reports at the same time. This is enabled via the Hyperblock™ calculation engine. Imagine changing your hierarchy definition via drag and drop or changing a complex KPI definition, and seeing the impact on your dashboard immediately.

To make models easier to understand and update, Anaplan offers its innovative Model Map to visually explore, zoom in, analyze, and change planning models—this is equivalent to being able to visualize Excel® formulas within a workbook and across multiple workbooks. You no longer need to sift through tabular pages in web UIs of traditional applications and write down notes to understand model and calculation interdependencies.

To further simplify the user experience and accelerate planning and decision-making, there is no separation of planning and dashboarding/reporting Uls. An Anaplanner can change numbers (given the right permissions) on any view as they do analysis and reporting, and even pivot the data interactively without designing a secondary view—avoiding the all-toofamiliar user experience and training nightmare of having to navigate from a dashboard view to another part of the UI to recreate a new but identical view for planning (making a change), and then navigating back to the dashboard to understand the impact. Other applications on the market have completely separate UIs in this case (and sometimes different URLs for access) and also have a delay—sometimes hours or days—to see changes via analytics. Master data changes, such as adding a product or customer, are also possible from this single view. The Anaplan UI lives up to the name, fusing analytics and planning into one entity like never before.

Conclusion

We have entered a new era of planning and performance management—and Anaplan is driving that change. Leaders can now impact the future of their business—within and across departments, at strategic, tactical, and operational levels—without compromising on ease of use, flexibility, ease of model changes, the sharing of best practices, and the speed to assess the impact of planning scenarios.

According to Constellation Research,³

"...the growing strength of Anaplan is the platform, which lets you take advantage of an agile, consistent planning approach across Finance, Sales, HR, Operations and a growing number of industryand task-specific use cases."

Anaplan's hundreds of customers are a testimony to the power and value of this groundbreaking platform that has freed them from countless spreadsheets and standalone applications. Driving a new age of connected planning, this unrivaled platform is enabling enterprises to plan and pivot faster and more often, make more impactful decisions with real-time data, and maximize the high-value work of their employees.

Appendix

A handy checklist of what to look for in a planning solution that will help you continuously improve your business.

Technology

Cloud deployment model

Multitenancy

In-memory computing

Horizontal scaling

Real-time calculation on large data sets

Modeling and planning

Use cases across the business: CPM, SPM, S&OP, SCP, Workforce planning

Integrated planning across all use cases

Real-time model adjustments

Excel® formula-like calculation

Text values over time

Real-time hierarchy management

Scenarios on plans and master data

Model and data change history

App building

App exchange (App Hub)

User experience

Immediate rendering of plan and model changes

Fusing of planning, reporting, and analytics

Interactive pivoting without design mode

Consistent business user-friendly UI

Model Map visualization

Notes

- 1. Travis, Tad, "Magic Quadrant for Sales Performance Management," Gartner. Published January 21, 2016.
- 2. Lervolino, Christopher and Van Decker, John E., "Magic Quadrant for Strategic Corporate Performance Management Solutions," Gartner. Published May 31, 2016.
- 3. Constellation Research "Anaplan Scales Up, Adds More Apps" https://www.constellationr.com/content/anaplan-scales-adds-more-apps. Accessed June 17, 2015.

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About Anaplan

Anaplan is driving a new age of connected planning. Large and fast-growing organizations use Anaplan's cloud platform in every business function to make better-informed plans and decisions and drive faster, more effective planning processes. Anaplan also provides support, training, and planning transformation advisory services. Anaplan is a privately held company based in San Francisco with 16 offices and over 150 expert partners worldwide. To learn more, visit anaplan.com.

Plans by Line of Business

