HealthCatalyst
ignite outcomes improvement™

"I already have a data warehouse. Can I use Health Catalyst applications with it?"

By Health Catalyst

You've already made an investment in an early-binding data warehouse. Can you still take advantage of Health Catalyst® applications and technology?

There are a number of options that will allow you to benefit from advanced technology and analytics applications while your current data warehouse continues doing what it does best. Here are just a few:

ADDING ADVANCED ANALYTICS: A LONG-TERM VIEW

Options vary for adding advanced analytics capabilities to your existing data warehouse platform - and so do long-term results. See how each option stacks up in terms of costs, expenses and apps.

$ = Cost to maintain   👤 = Effort required to operate   🔧 = Maintenance effort   ⚙ = App availability

	Cloud Data Warehouse	Parallel Platform	Custom Apps	Feeder Data Warehouse	All-New Platform
End Result	Old data warehouse running parallel to cloud-based solution	Two separate data warehouses that don't talk to one another	Old data warehouse in a shiny new cover	Old data warehouse feeding new data warehouse	Shiny new data warehouse

CUSTOM APPS: BUILD APPLICATIONS WITH ADDITIONAL FUNCTIONALITY ON TOP OF EXISTING DATA WAREHOUSE

Short-term resource impact: Low
Long-term resource impact: High
Time to value: Slow

Pros: Retains existing early-binding data warehouse while increasing functionality through the addition of advanced analytics apps; resulting analytics system is a custom solution

Cons: Custom solutions tend to be difficult and costly to maintain and may not give the results desired when advanced applications run on a platform for which they weren't developed or if the data required isn't available; developing new applications on an older platform may increase time to delivery for applications that require newer data sources

How it works: Information from the existing data warehouse is fed into new, third-party applications allowing health system to gain additional functionality and insight from the data already collected in a data warehouse. When needed, data from existing schema is adapted to work on new schema. Disruptions associated with initial implementation of this solution are minimal as the existing early-binding data warehouse continues to perform its job as usual and new apps are merely layered on top; however, longer-term maintenance overhead can be very high in terms of cost and time as this approach requires a custom retrofit to new applications, making upgrades more challenging.

FEEDER DATA WAREHOUSE: USE EXISTING EARLY-BINDING DATA WAREHOUSE AS SOURCE SYSTEM FOR NEW DATA WAREHOUSE PLATFORM

Short-term resource impact: High
Long-term resource impact: High
Time to value: Moderate

Pros: Adds enhanced analytics functionality to existing data warehouse, which may be beneficial

---

WHY YOUR EXISTING DATA WAREHOUSE MIGHT BE READY FOR NEW APPS

One of the challenges faced by early adopters of healthcare data warehouses today is determining whether an existing data warehouse is still effectively meeting an organization's needs. These early data warehouses were powerful tools, but the changing nature of the healthcare industry could be resulting in less optimal performance today and in the future. The following reasons help explain why:

Data is housed in multiple, standalone data marts; organization would like an enterprise-wide view of its performance. Data siloing is common – it occurs in many industries. But its problems are exacerbated in healthcare due to the power of the individuals who control those silos. For example, the Chief Pathologist may find an application he likes and adopt it for his department, which means all the data being captured will be formatted for use in that application. It is then left up to IT to determine how to make the application talk to others in the healthcare system. Another barrier is that individual departments may have different nomenclatures for the same information or different numbers for the same patient. The more each area acts as an independent entity, the more difficult it is to derive value on an enterprise scale.

---

when custom functions or custom-developed EMRs are a consideration

Cons: New tech advantages and platform not fully realized due to dependency upon existing early-binding data warehouse, which may also result in conflicts/incompatibility in data heritage, governance and lineage; employable only in environments with one existing data warehouse

How it works: To obtain broad-spectrum, advanced analytics functionality, a Late-Binding™ data warehouse platform is added, but remains dependent upon data fed to it from the existing early-binding data warehouse. If desired, existing data warehouse may continue to perform certain key, custom functions without the migration of data to new platform. However, full advantage of new platform can't be realized if existing data warehouse or data heritage is outdated. Long-term resource impact can become very high as two feeds need to be retained – ex: if a field is added to one data warehouse, it has to be added to the other platform as well.

PARALLEL PLATFORM: ADD A NEW FULLY FUNCTIONAL LATE-BINDING™ PLATFORM TO RUN PARALLEL TO EXISTING EARLY-BINDING DATA WAREHOUSE

Short-term resource impact: Varies, but typically low
Long-term resource impact: 2x current impact
Time to value: Fast

Pros: Allows immediate build out of applications required to perform new, needed functions while existing applications remain intact; new applications take full advantage of Late-Binding™ platform and technology and establish infrastructure that supports growth

Cons: Costs and staffing can increase as a result of maintenance of two systems and potential dual input and duplicate data integration; retaining two data warehouses reduces the value of a data warehouse as the single source of truth and may

Ongoing internal data warehouse initiative isn't meeting expectations. Internal software development projects can be complicated and easily fall off the rails when their results aren't meeting expectations. Couple that with the dynamic healthcare environment and it's easy to see how EDW projects can get bogged down. Most internal IT departments have little experience or expertise building complex data warehouses, so there tends to be a lot of trial and error along the way. All of these factors can slow the delivery process – or cause it to stall completely. For more information about factors to consider when building an EDW from scratch, read Build vs Buy a Data Warehouse.

EDW isn't delivering what users anticipated it would. The EDW may be successful from IT's point of view, but its overall usefulness is reduced if clinical users aren't getting the information from it that they feel they need to improve care and eliminate waste. This situation may be the result of an EDW that's incapable of scaling to meet the intense demand from data-hungry clinical teams, possibly because of lack of IT bandwidth, an inflexible early-binding architecture, too many users wanting to access the system, or because of aging technology platforms.

result in user confusion in regard which data warehouse should be used for any given function

How it works: Existing data warehouse(s) remains online performing its current functions while new platform is added to perform required and desired advanced analytics. Information for new Late-Binding™ platform is pulled directly from source systems, thereby eliminating any rules or other limitations of existing data warehouse. However, with two systems, users are required to remember which system performs which function. Users may also resist adopting the new system if an alternative exists on the old system. NOTE: May be used as a small-scale introduction to the new platform by piloting the development of one or two applications targeting specific areas of concern.

CLOUD DATA WAREHOUSE: ADOPT A CLOUD-BASED, HOSTED DATA WAREHOUSE TO RUN PARALLEL TO EXISTING DATA WAREHOUSE

Short-term resource impact: Low
Long-term resource impact: 2x the current impact
Time to value: Fast

Pros: Very fast deployment option without need to acquire capital equipment; both deployment and continued operation/maintenance are outsourced freeing up existing IT resources to work on other projects

Cons: Initial cost may be higher than other options but longer term, costs are reduced over time; security of data can be a perceived concern for organizations, although vendors offering this option should take all necessary precautions to ensure data is secure

How it works: As an alternative to a second on-premise data warehouse, a cloud-based solution can act as an additional data warehouse. Featuring a rapid deployment cycle, cloud-based/hosted solutions include hardware, software, maintenance, network bandwidth, backups, and warehouse management in customized packages. Hosting organization drives acquisition and rollout efforts and ongoing maintenance. While organizations offering a hosted option take efforts to ensure privacy, healthcare organizations will carefully want to review the efforts and options available.

ALL-NEW PLATFORM: MIGRATE DATA TO NEW LATE-BINDING™ PLATFORM WHILE PHASING OUT FORMER EARLY-BINDING DATA WAREHOUSE(S)

Short-term resource impact: Low, but may vary
Long-term resource impact: Low
Time to value: Fast

Pros: Scalable and agile solution that allows organization to take full advantage of advanced apps and flexibility that drives the new Late-Binding™ platform's technology; involves minimal risk while delivering value in a short amount of time. Long-term cost is significantly lower than other options as the speed and flexibility of the Late-Binding™ architecture reduce the overall cost per advanced application.

Cons: Migration over time results in full phase-out of existing data warehouse, which may be met with resistance from key stakeholders; higher short-term cost; adoption phase can seem disruptive if organization opts not to phase in over time

How it works: While this option does not retain the existing early-binding data warehouse, it provides users with the full advantages associated with the new Late-Binding™ data warehouse platform and associated advanced applications. New platform can also be developed to replicate key functionality of existing data warehouse, if desired. Offers increased adaptability and growth potential while eliminating limitations and/or shortcomings associated with existing data warehouse(s).

SUCCESS THROUGH ADVANCED ANALYTICS APPLICATIONS

These represent just a few of the options available for organizations wanting to add advanced analytics functionality to an existing data warehouse. Determining the one that's appropriate for a healthcare organization involves assessing its needs and goals relative to its current data warehouse solution. Include the following in your assessment:

Investment to date: While preserving the existing investment is an important consideration, it should NOT be the driving force behind a decision. It's more important to review long-term value. The total cost of ownership from the previous investment plus an investment in an additional or replacement data warehouse may be a better value than continued investment in a system that has outlived its capabilities and that carries with it a high investment cost per advanced analytics application.

Cost: Review both up-front costs and projected long-term costs for each option. What appears to be the best value at implementation may come at a high price over time, both financially and through maintenance resources.

Time: Consider the longevity of the various option relative to a healthcare system's specific needs and goals. Flexibility to grow and change is vital to success.

Apps: The number of apps readily available to make use of the data in the data warehouse should be a key component of the decision. Review the

options – including the potential and limitations of the existing early-binding data warehouse – in terms of cost per year as follows:

Cost/app/year

For example, a system with four apps that costs $4 million over the course of four years ($4mil/4 apps/4 years = $1mil/1 app/1 year) provides an overall lower value than a system with eight apps with a total cost of $6 million over the course of four years ($6mil/8 apps/4 years = $.75 mil/1 app/1 year. Consider, too that apps available should be viewed in terms of their contribution to the healthcare system. Additional apps are likely to enable a healthcare organization to more effectively use its data to make improvements.

While adopting a new solution is rarely an easy decision, selecting the right one will help make data more accessible for everyone in the organization – from clinical staff to analysts, financial teams and more. You can learn more about the Late-Binding™ data warehouse in our downloadable ebook, It All Starts with a Data Warehouse. Or contact Health Catalyst for an assessment of the solutions available to your organization. 〰

Resources

Ebook: It All Starts with a Data Warehouse
http://www.healthcatalyst.com/ebooks/healthcare-data-warehouse-ebook/

Article: Build vs Buy a Data Warehouse – Which Is Best for You?
http://www.healthcatalyst.com/best-build-buy-healthcare-enterprise-data-warehouse

White Paper: Late-Binding Data Warehouse Explained
http://www.healthcatalyst.com/late-binding-data-warehouse-explained/

For more information, contact Health Catalyst at www.healthcatalyst.com/contact-us for a demo of our products or to learn more about the solutions available to your organization.

ABOUT HEALTH CATALYST

Health Catalyst is a mission-driven data warehousing, analytics, and outcomes improvement company that helps healthcare organizations of all sizes perform the clinical, financial, and operational reporting and analysis needed for population health and accountable care. Our proven enterprise data warehouse (EDW) and analytics platform helps improve quality, add efficiency and lower costs in support of more than 50 million patients for organizations ranging from the largest US health system to forward-thinking physician practices.

For more information, visit www.healthcatalyst.com, and follow us on Twitter, LinkedIn, and Facebook.

3165 East Millrock Drive, Suite 400
Salt Lake City, Utah 84121
ph. 800-309-6800