MAGICLOGIC OPTIMIZATION INC.

Cube-IQ Service-Oriented Architecture

Load Planning Software: Cube-IQ

MAGICLOGIC CORPORATE COMMUNICATIONS

An Overview of the Cube-IQ Service-Oriented Architecture

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Document r1.1, November 2006

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1

A Keystone in Your Logistics Operation?

Your logistics operation is as complex and as unique as your fingerprint. Where and how does Load Planning fit?

Fitting into a niche is never easy; after all, it's there for one very good reason: no-one has been able to fill it successfully before. Load Planning and Load Optimization is such a niche: it is usually a detail in a much larger operation, and as such can sometimes have difficulty making it off the starting blocks.

This is not to belittle the potential returns on such a "detail," however! Efficient load planning can form the keystone of an efficient operation. It helps you plan, save time and streamline an operation in an ever-increasingly competitive business world.

Why you should read this

This document hopes to demonstrate why this often overlooked part of your operation should be considered as part of your overall logistics strategy, and how MagicLogic's flagship Load Planning product, Cube-IQ, can help.

Filling the niche: *Small , often overlooked details can still form a keystone component in your operation.*

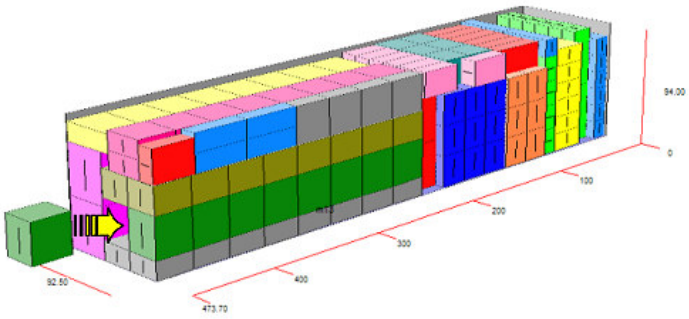


Figure 1. A highly-mixed furniture load run through the Cube-IQ Load Planning software. Improvement over the manual load was 8.4% resulting in a saving of thousands of dollars on the overall shipment. Cube-IQ also

ensured that complete furniture sets were grouped, and that fragile items were safely stowed in the top of the container.

So what is Load Planning?

Load Planning encapsulates the process of selecting products, selecting containers, and efficiently combining both into a safe, accurate and cost-effective load. In the simplest case this could be loading a selection of products onto a pellet or into a truck, but the principle extends to complete automation of product and container selection, optimization and even physical loading.

This document will discuss how load planning can fit into an existing logistics operation, and introduce Cube-IQ as a proposed solution or enhancement for your Load Planning requirements.

Scattered throughout our discussions you will find various icons and pull-outs which you may find useful when planning your research.

ICON KEY	
	Valuable information
	In-depth knowledge

This document is structured such that executive summaries can be found at the beginning of each section, followed by detailed discussion, and finally technical information for integrators and developers at the end of each chapter.

Introducing the Cube-IQ Load Planning SOA

We hope to show you how our focus on a Service-Oriented Architecture can directly improve your bottom line, and on the way explain exactly how Cube-IQ can adapt itself to your particular load planning and optimization niche.

What is Service-Oriented Architecture?

The term Service-Oriented Architecture (SOA) expresses a perspective of software architecture that defines the use of services to support the requirements of software users. In an SOA environment, resources on a network are made available as independent services that can be accessed without knowledge of their underlying platform implementation.

One of the fundamental design principles that drove our development was that we needed to have a Load Planning product that was extremely flexible, customizable and friendly to other systems. The SOA paradigm fits the bill admirably, enabling us to split our systems into a number of "services" each of which perform an essential part of Load Planning, but can be implemented quickly, easily and in either a centralized or distributed way to maximize our fit with any existing systems out there.

The Cube-IQ loading algorithm is already recognized to be the best on the market. Over ten years of continued development have resulted in the most performant algorithm of its kind. Side-by-side tests continue to prove that our system handles the most complex loading rules, provides the most features and above all, loads the most!

Yet its license fees are not prohibitive at all. In fact, in a very short time, Cube-IQ will be paying you back – over and over. We'll see exactly how presently, but of course first we have to make sure that you can use the system in your existing operation.

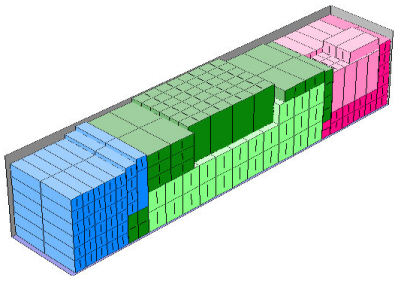


Figure 2. A load built in drop-sequence. Blue items are delivered to location 1, green items to location 2 and pink items to location 3. Cube-IQ can be set up to load in drop sequence as shown here, or can optionally adhere to pick-sequence to streamline your warehouse routing. It's all just a click of the mouse away.

Adaptable and Friendly

The Cube-IQ Service Oriented Architecture grew from a simple premise: our customers know what they need, and what they need is a system that works seamlessly with what they already have. These requirements can be distilled into a number of core attributes that will make or break your integration project:

Customizable. Our business is thriving on the enhancement and tuning of our products to meet our customers' exact requirements.

Flexible. The system you buy needs to be configurable to your needs. Cube-IQ **works** with you, whether that's in a WMS/TMS environment, or intense cartonization operations, or the guy on the loading dock scratching his head over a 5,000 SKU order. In each case your unique requirements are met by Cube-IQ's flexible, intuitive rule set.

Scalable. Where do you see yourself in five years' time? Cube-IQ **grows** with you. Our architecture is specifically designed to fit the bill from a single CPU to a network of super-servers. No additional software is required as you grow your operations. The system is self-tuning, self-balancing and fast.

Easy to implement. You and your team don't have the time to customize your existing applications to work around new applications. Cube-IQ can be setup to work with any system out there that can generate XML data. Your system integrators will be up and running in a few days with our straightforward yet powerful API.

Easy to look after. Most operations nowadays are 24/7 and expect five nines availability[1]. Downtime must be minimized or obviated where possible. Cube-IQ includes diagnostics and self-monitoring tools. The optimization engine is the enterprise solution you expect, installing as an NT service.

Speaks the right language. Cube-IQ utilizes the industry-standard of XML for data transfer. Of course we also support CSV, XLS, SOAP, SQL and direct API calls. Our standalone system is built right around a powerful SQL-compatible relational database.

Portable. Cube-IQ **goes** with you. We provide web-based software to help you work wherever you are. We leverage the power of Sun's Java to ensure that you can run on any platform too.

Well supported. MagicLogic has been in business since 1995, and has shown consistent growth, year in, year out. We provide fast support, regular software updates and a dedicated, professional team.

Has the answer! Cube-IQ knows its business: your business. We have implemented a feature rich product which can adapt to your specific business rules and practices, right out of the box.

[1] Five nines is 99.999% availability, which translates to 5 minutes downtime per year.

Chapter

2

An Overview

We take a look at how Load Planning software can work alongside your existing systems.

So where does Load Planning fit? Certainly it is a process that can be applied to a number of stages in order fulfillment. Therefore a good, enterprise strength load planning application must have a rich set of features to support such a diverse selection of requirements. No two operations are ever quite the same, of course, but logistics operations can be broadly split into a number of categories:

- Order Handling
    - Order Taking: pricing, cost estimations, packing lists, improved order fit.
    - Order Generation: improve Less-Than-Load quantities, perform fast "what-if" exercises, fill out containers.
- Order Fulfillment
    - Picking: follow warehouse routes, plan routes
    - Palletization: build pallets
    - Cartonization: picking, packing, e-tailing operations
    - Truck / Trailer / Railcar loading
- Distribution Planning
- Planning cargo space reservation and usage
- Warehouse Management (WMS) / Transport Management (TMS)

The Cube-IQ Load Planning engine *can already be found built right into leading WMS and TMS systems from such tier 1 providers as HighJump, Swisslog and Visalign.*

So, you will find Load Planning requirements in 101 places in the enterprise: on the screen of the person taking an order over the phone, telling the client that more may be ordered for the same transportation cost. The same business then requires the system to actually plan the physical load once the order is completed.

You will also find systems working behind the scenes to help give real-time shipping costs to e-tailers' clients via their web sites.

Warehouses optimize loads for re-consolidation, and a number of railways web sites assist the client in reserving the right equipment for a shipment via load planning algorithms.

Freight forwarders optimize loads to arrive at a lower quotation.

And of course, in each case, creation of a successful, efficient, safe load can be a daunting task. Mathematics tells us that there are literally billions of ways to load even just a few products into a container. Factor in possible orientations, stacking rules, weight limits, balance, bracing, safety…

Fortunately, experience and human intelligence guides us in the right direction, but the sheer volume of data which needs to be handled means that this is an ideal job for an intelligent, automated software solution.

All this, and more, is smooth, fast and automated with Cube-IQ.

But Joe on the loading dock…

… does a great job, right?

Sorry Joe… but any good load planning system would be expected to out-perform a manual load by several percentage points. Experience certainly does count for a lot when planning a load, and that's why we have built years of experience into the Cube-IQ system.

One of the real advantages of load planning software is that you can run many variants of the same load through the system from the comfort of your office chair. You can play around with the numbers, work the system, even move the products around with your mouse until you get everything locked down just right.

Then you click the button and your load report is emailed to head office, your manifest is faxed to your shippers… and your picking list and load plans are wirelessly transmitted to good ol' Joe's hand-held down there on the loading dock.

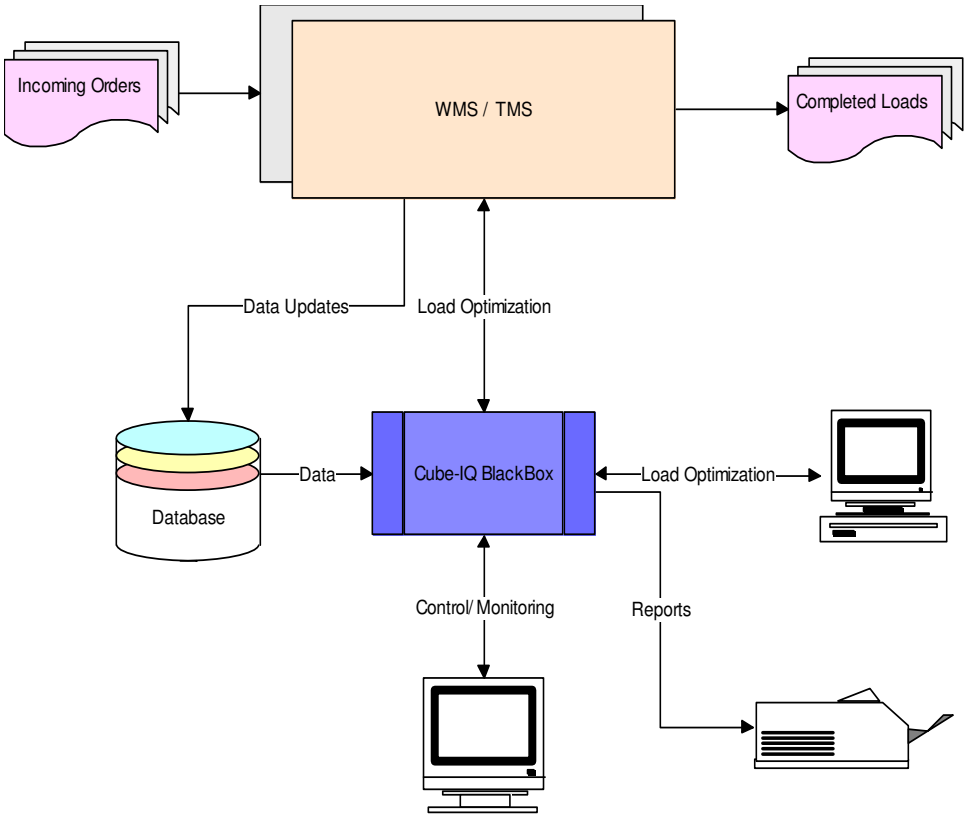


Figure 3. A typical WMS/TMS integration showing the Cube-IQ BlackBox optimizer playing its role in load planning during the order fulfillment process. Both batch optimizations and interactive sessions are supported concurrently.

The Cube-IQ SOA presents a complete load planning solution that can be used directly as a standalone system running interactively with a comprehensive graphical user interface, or alternatively the system can be implemented as a plug-in that is compatible with every WMS / ERP system on the market… today - and tomorrow. This is due to the extremely flexible and configurable interfaces provided by the Cube-IQ systems and services.

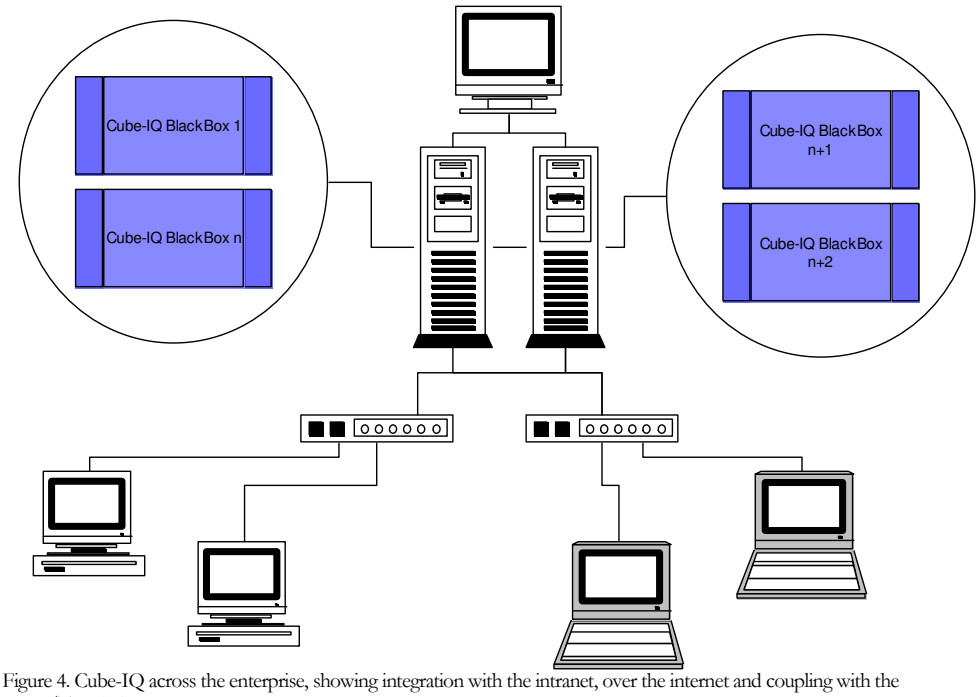


Figure 4. Cube-IQ across the enterprise, showing integration with the intranet, over the internet and coupling with the WMS/TMS infrastructure.

The above diagram helps to show you where Cube-IQ can fit in your operation. The short answer is: everywhere. From local workstations in your head office, to your divisions across the world, to your reps on the road.

All interfaces are well-documented, and include file specifications, XML schemas and DB schemas as appropriate.

You can find all this information downloadable from our website at http://www.magiclogic.com/downloads

Chapter

3

Cube-IQ In-Depth

Exploring the capabilities of the Cube-IQ Load Planning product suite.

In this section we take a close look at the Cube-IQ system, and explain how it can meet your requirements for Load Planning. Let's start with the basic functions of the system. The following diagram exemplifies the core functionality of Cube-IQ.

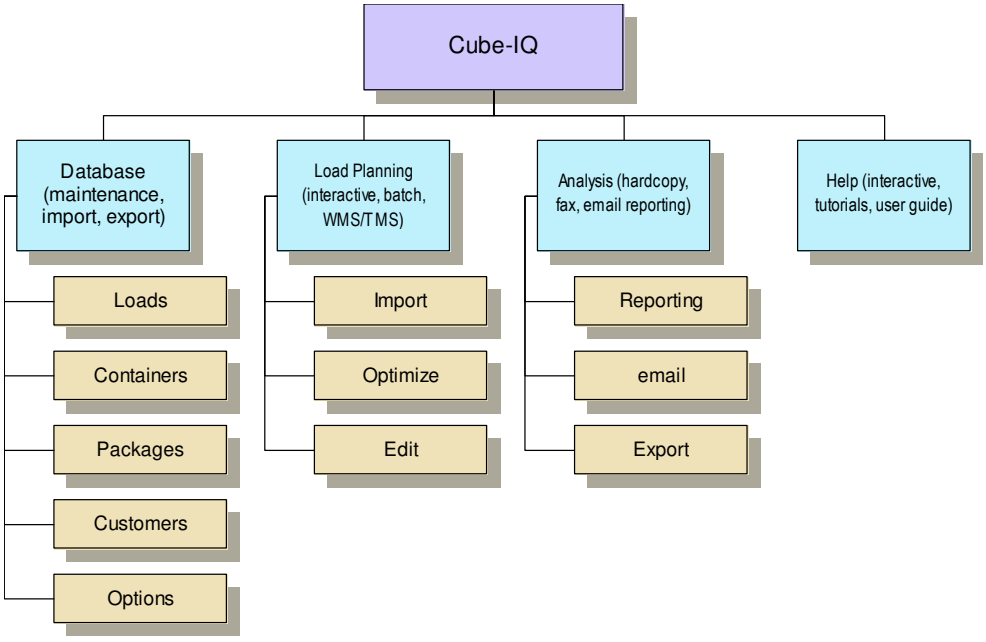


Figure 5. A functional view of the Cube-IQ system.

Unique Features

Despite presenting a sleek, simple face to the outside world, Cube-IQ boasts a vast range of abilities under the hood. The following sections briefly describe some of the features which set Cube-IQ above and beyond similar systems. In many cases these features are not simply "better" or more effective than those of the other

systems – they are singular to the Cube-IQ system and address requirements that cannot be met anywhere else.

Proprietary Loading Algorithms

Central to the system is, of course, the loading algorithm utilized by Cube-IQ. This is a proprietary algorithm developed exclusively by MagicLogic. It is the result of years of experience and intensive research in the field of Combinatorial Optimization.

Already recognized by many leading systems providers and integrators as "best of breed," you can find our algorithms licensed and built into software provided by many tier 1 logistics service providers, as well as on the desktops and servers in some of the world's largest operations.

Container Selection, Cartonization

It is perfectly feasible to have Cube-IQ make your container selection automatically, based on criteria of volume, weight and even shipping cost. Simply provide the system with the selection of containers from which to choose, and it will pick the most efficient combination. This is a life-saver in e-tailing for example, where high volume, highly mixed products are to be loaded – a classic cartonization scenario.

Loading Zones

In order to create safe, "do-able" loads, it is important to consider the product we are handling and the transportation medium as a combined whole. This holistic approach leads to a more natural way to work with the system, and tends to help address real-world situations rather than merely solving an abstract mathematical puzzle.

Certainly abstract solutions are not always practical in the real, gritty world. This is why Cube-IQ has numerous features to help present real, practicable, safe solutions.

In this example you can see a typical railcar. The arrows below show how Cube-IQ can be set up to load towards the central door by defining three loading zones. The load will be built so that products are placed in the order dictated by the arrows.

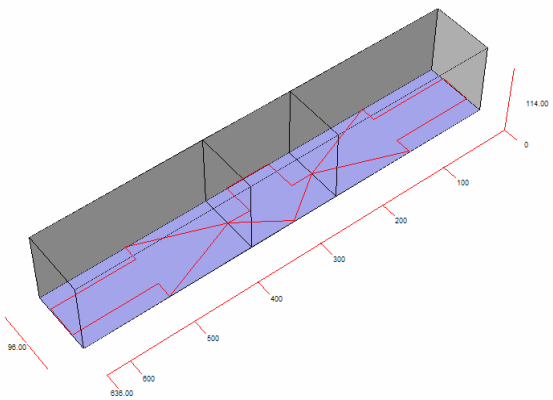


Figure 6. Loading Zones: a Rail Car modeled using three loading zones to ensure the load is built towards the central door.

Door fit is automatically taken into account, as is bracing and roof curvature.

Other benefits of our loading zone approach are significant. You can define weight limits per zone, lock certain products to specific zones, for example perishable goods to a refrigerated area, dangerous goods to safer areas of the container, or (for example) loose cartons close to the container door only.

There is no limit to the number of zones that can be assigned, including overlapping zones in order to model extremely complex and demanding scenarios.

Product Configurations

Cube-IQ allows the user to define multiple 'configurations' for a given product, so that the system can select automatically between for example loading loose units, boxes of ten units, or pallets of two hundred. Each configuration can even be given a priority/preference.

Rolls, Cylinders and Tubes

One of the most challenging loading scenarios is that of loading cylinders, rolls or tubes on their side. They settle, roll away, or just don't ever seem to want to fit!

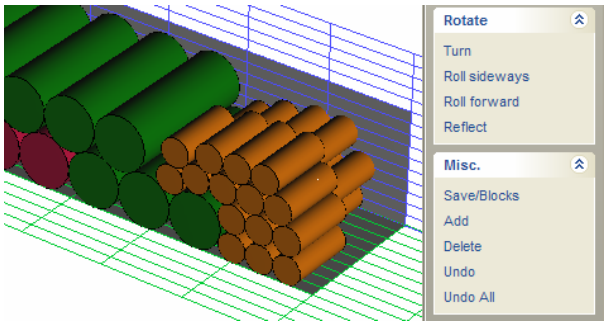


Figure 7. Detail: Cube-IQ's sophisticated roll / cylinder / tube handling.

Balance, interleaving and stability all play a key role in the success and above all safety of this type of load. The loading algorithm can be tuned for paper rolls, drums, and many other cylindrical products.

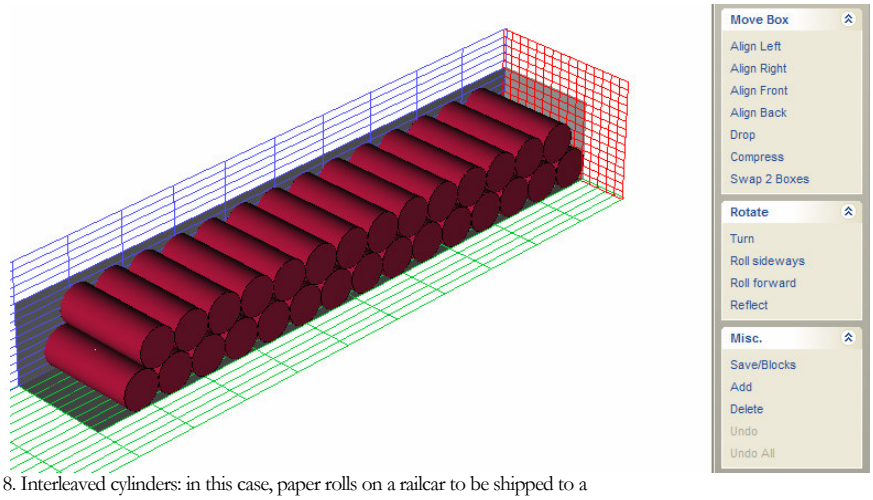


Figure 8. Interleaved cylinders: in this case, paper rolls on a railcar to be shipped to a

L Shapes, T Shapes

Originally developed specifically for the furniture industry, this module understands how to pack challenging shapes such as sofas and chairs to minimize dead space.

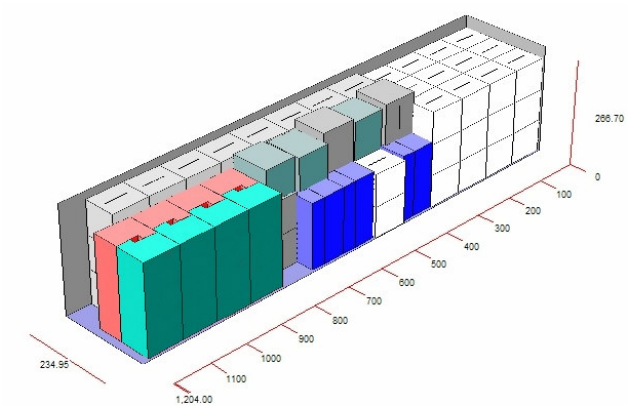


Figure 9. Mixed furniture load showing grouping, load balancing and interlocking sofa shapes.

This concept has been extended to allow for definition of complex shapes by utilizing our unique "object configuration" interface, covering requirements such as nesting, interlocking and grouped items.

Coming soon

Trapezoidal shapes – for instance nesting packing crates.

Difficult Items, Grouping and Complex Loading Rules

Take those glass table tops. Put them in the truck… wait, they can't go at the bottom of the truck, they'll break. Wait, they have to be stacked on their sides, unless they're the topmost item in the load, then they **can** go flat. Wait, you can only stack three of them together. Wait, they need a margin around them for padding… wait… wait…

Does this sound familiar? Chances are, we've heard it before too, and made sure that Cube-IQ understands how *your* products need to be handled. Our interface allows you to define complex rules for each of your products. In fact we go several steps beyond that – allowing you to specify how single products, groups of products and pallets of products should be prioritized, picked, padded, loaded, braced and unloaded.

Products can also be grouped with partner items (for example as a table and set of six chairs) to ensure that orders are not split across containers.

ULD's and COG's

Unit Load Devices (ULD's) are a particular challenge to Load Optimizers. As can be seen from their unique shape, stacking items into such a container is no longer an exercise in aligning to vertical or horizontal edges.

This is yet another unique part of Cube-IQ's capabilities. Handling of these and other irregular-shaped containers is automatic and usually results in a significant improvement over manual attempts. Any shape of container can be defined within the system for maximum fit to your physical containers.

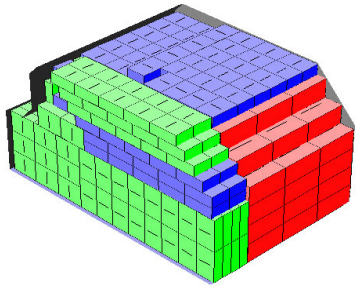


Figure 10. ULD with refrigeration unit showing Cube-IQ's effectiveness at building a truly efficient load within difficult spaces.

No matter what type of container you load, Cube-IQ maintains an impressive list of additional abilities. A well-balanced load is vital. While several systems on the market are able to report the Center of Gravity (COG) for the load, Cube-IQ goes the extra mile and is able to build the load around user-definable tolerances that ensure the COG is where **you** need it to be. This can be extended to ensure that axle weight limits and weight ratios – as many axles as you need – are honored.

Prioritization and Sequencing

Prioritization lets you build a load which is guaranteed to contain all the essential products that you require. This can be followed by non-essentials that nevertheless make good sense to load – utilizing the maximum space and minimizing costs whenever practicable.

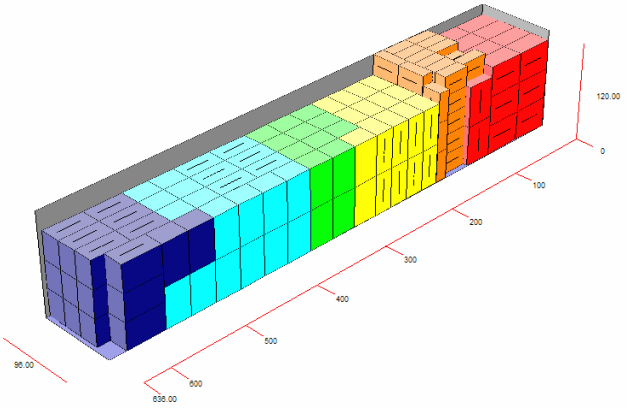


Figure 11. Sequenced loading showing how products are grouped so that they can be unloaded in the correct sequence at each stop during a multi-drop trip. In this case a six drop trip is shown, demonstrating how the load is built so that all items are accessible at the right moment.

Do you pack by picking sequence? Pick by packing sequence? Load by drop sequence? Cube-IQ can be driven by your requirements, or can help you define them.

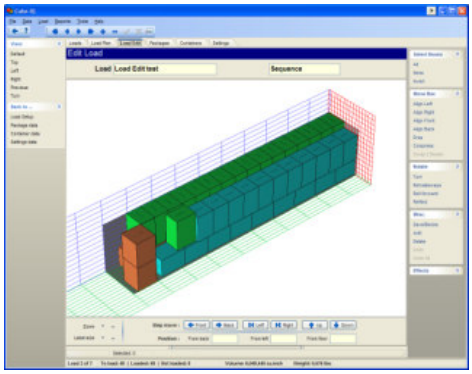
Products can be arranged to ensure the load is put together – or taken apart – in the sequence that you need.

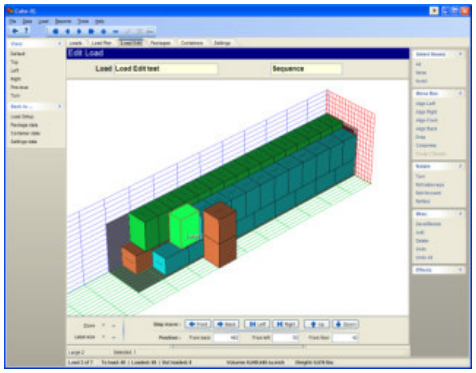
True 3D Drag & Drop Load Editing

Edit your loads in real time, in true 3D, with Cube-IQ's fully interactive load editing module. Spin the load around, grab boxes and drag them to a new location, add and delete products… Cube-IQ will update the load plan as you work.

Here we are going to reorganize the doorway of a loaded truck. First we *click & drag* the brown boxes out of the way to give us some space and *select* the single green box that we would like to work with:

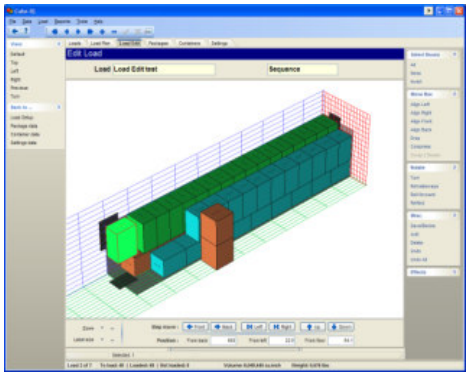
The Load Edit *toolbox contains intuitive functions to select, turn, tip, align and swap products around, all with the click of your mouse button.*

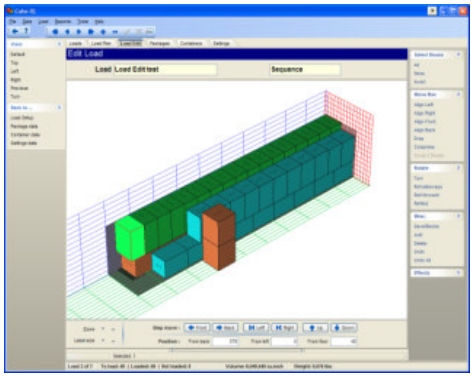




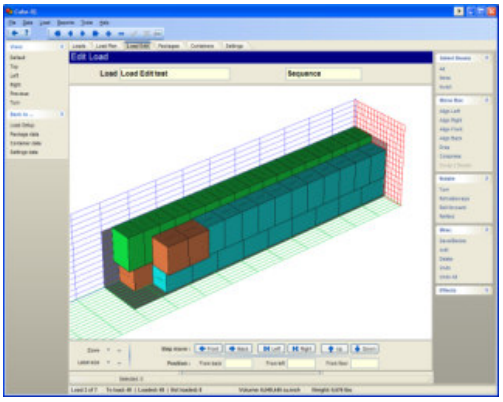
Movement and alignment is a snap – literally. Simply *click & drag* the box to the approximate position that you require and let Cube-IQ do the hard work of precise alignment, snapping boxes into the correct place as you work.

Here we see how, with three clicks of the mouse, the green box is turned and lined up with its buddies – *turned*, *aligned-left* and *aligned-back*.

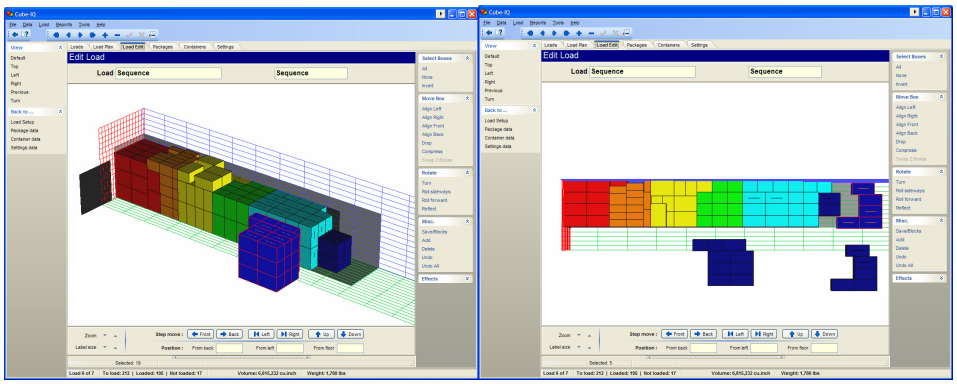




Finally we decide to un-stack the two last boxes. *Turn*, *lift*, *align*… the job is done! This whole process took just a few moments.



Of course, true 3D editing means being able to work with any view that you require. A simple mouse gesture repositions the container to the viewing angle you require for the clearest possible view of the load as you work. This is all accomplished in *real-time* thanks to our powerful graphics engine.



Please refer to our website for animated demos and tutorials on our ground-breaking 3D Load Editing feature.

Translation and local terminology

The Cube-IQ software suite can already be run in many languages. Additional languages can be added without new software releases. In fact, the entire system can be translated on-the-fly. Reports can be created in a secondary language via a simple language selection menu.

Every term can also be localized to work with your internal terminology and jargon. For example, you can switch Cube-IQ's default term "container" for "pallet" or "skid" automatically.

Languages currently available: English, French, German, Dutch, Italian, Spanish, Portuguese, Polish, Chinese, and Japanese. Other languages are available on request.

Units

The Cube-IQ software suite can work in multiple units that can be switched on the fly, or even mixed. It is perfectly feasible to maintain your database in inches / cubic feet and pounds, yet plan a load into a metric container dimensioned in centimeters, cubic meters and kilograms. 100% accurate conversions are maintained between units, and can be switched back and forth in the system for easy visualization.

Reports can be switched into units appropriate to the locale where the load is to be physically built.

Cube-IQ Application Suite – the SOA Deconstructed

By now you should have a reasonable idea of what Cube-IQ can do for your particular operation.

By its very nature, an SOA is comprised of multiple components that can be coupled together in various configurations in order to provide the required services. Let's now look at how the architecture itself has been designed and focus on the key components one by one.

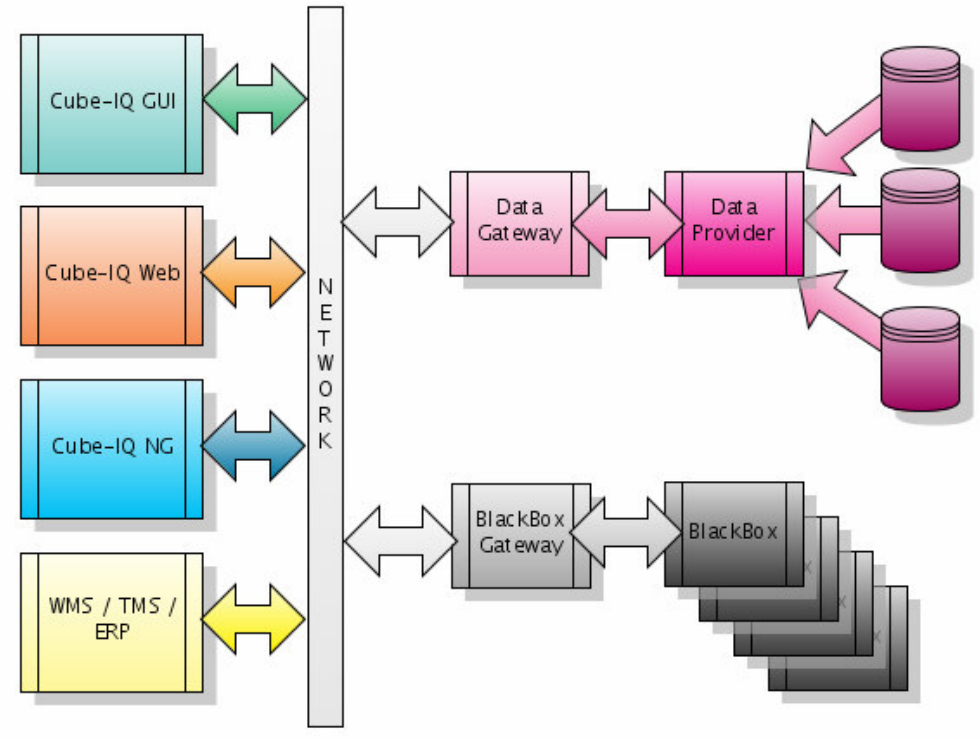


Figure 12. The SOA layout, showing the Cube-IQ User Interfaces, SOAP servers, data providers and BlackBox instances.

Please take a look *at our Cube-IQ User Guide for in-depth description of the capabilities of the GUI. The guide, alogn with a complete working system, can be downloaded from* www.magiclogic.com

The Cube-IQ Graphical User Interface

First and foremost is of course the graphical user interface (GUI) that Cube-IQ presents to the user.

The Cube-IQ GUI is delivered in a number of configurations depending on your requirements. We provide applications written either in

- Pure Java[2] to work on every platform (Cube-IQ Next Generation)
- Pure native Windows code (Cube-IQ 3.5)
- We even have a GUI that works right in your Internet browser, deployable to your road warriors, sales staff or your customers for that matter! (Cube-IQ Web)

The screenshot below is the main load setup screen for our Cube-IQ NG GUI. This is a 100% Java application for true portability.

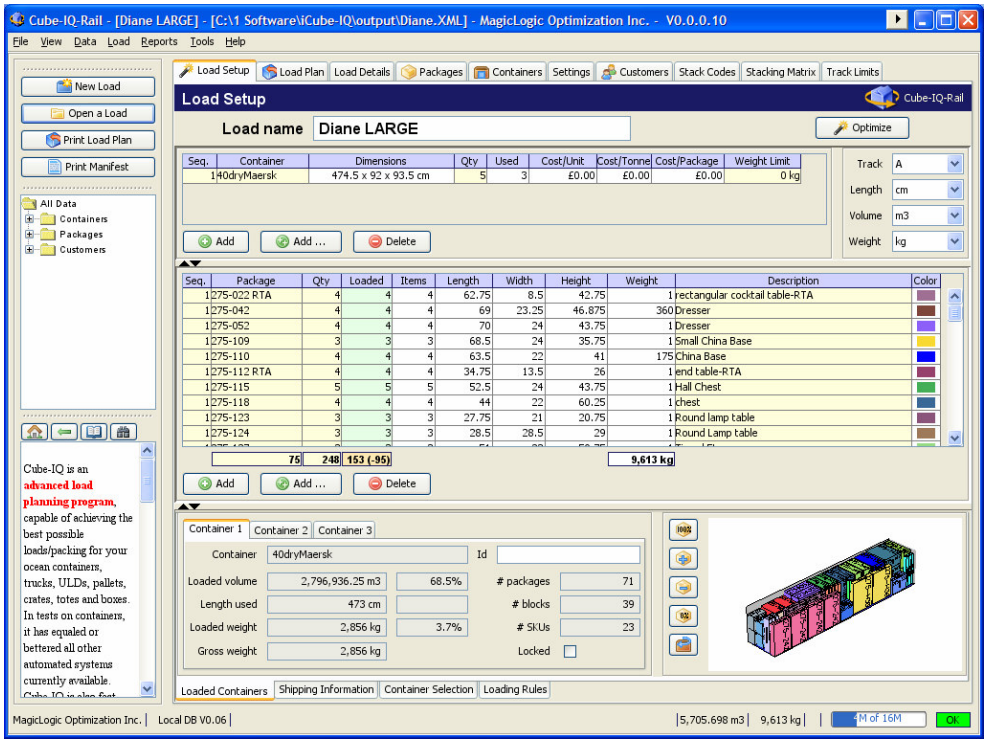


Figure 13. The Cube-IQ NG GUI shown here is 100% Java, meaning a truly portable , enterprise-strength application.

As with all of our products, the Cube-IQ GUI is constantly being refined to bring you the most intuitive, user-friendly product on the market today. Creating a load is just three clicks away, yet every detail and every rule you need to use is available when you need it.

[2] Cube-IQ NG does not rely on any native methods or 3rd party libraries to function.

The GUI can be run on any PC as a standalone application, and provide Load Planning services right away with its built-in optimizer.

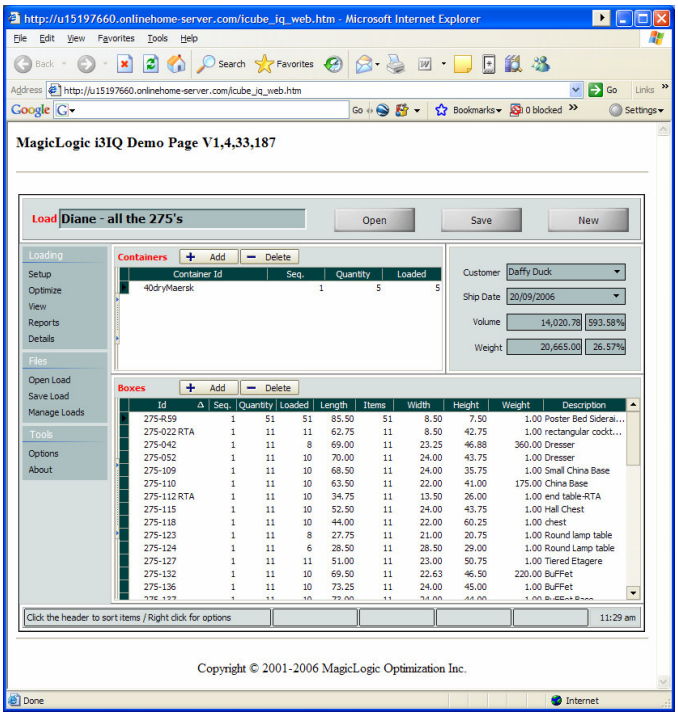


Figure 14. The Cube-IQ web interface runs directly inside Internet Explorer.

The Cube-IQ Gateways (Data Gateway, BlackBox Gateway)

These gateways are the glue which holds the systems together. They provide services to upload and download the data from the central server to the users who are running the Cube-IQ GUI, and of course load optimization services to everyone who needs them.

In order for the Cube-IQ system to perform in an SOA environment, we utilize industry standard protocols built around XML and SOAP. Secure, fast and reliable, they bring our SOA capabilities to the intranet and internet in order to support your entire operation.

The BB is the racing engine of the SOA. *This application is responsible for analyzing and creating the load plans from the user input and data provided to it.*

The Cube-IQ BlackBox (BB)

At the center of the Cube-IQ suite of software programs lies the Cube-IQ BlackBox.. This is the main load optimization algorithm, packaged as a callable module either from within the encompassing Cube-IQ system, or from your own systems.

> **BlackBox**
>
> A system in which only the input and output characteristics are of interest - without regard to its internal mechanism or structure.

The following section discusses the BlackBox interfaces in some depth.

The Cube-IQ BlackBox is an application which not only fits like a glove in our own architecture, but in yours as well. In order to achieve maximum deployability, the BB has an extremely flexible mode of operation. These modes are discussed briefly below.

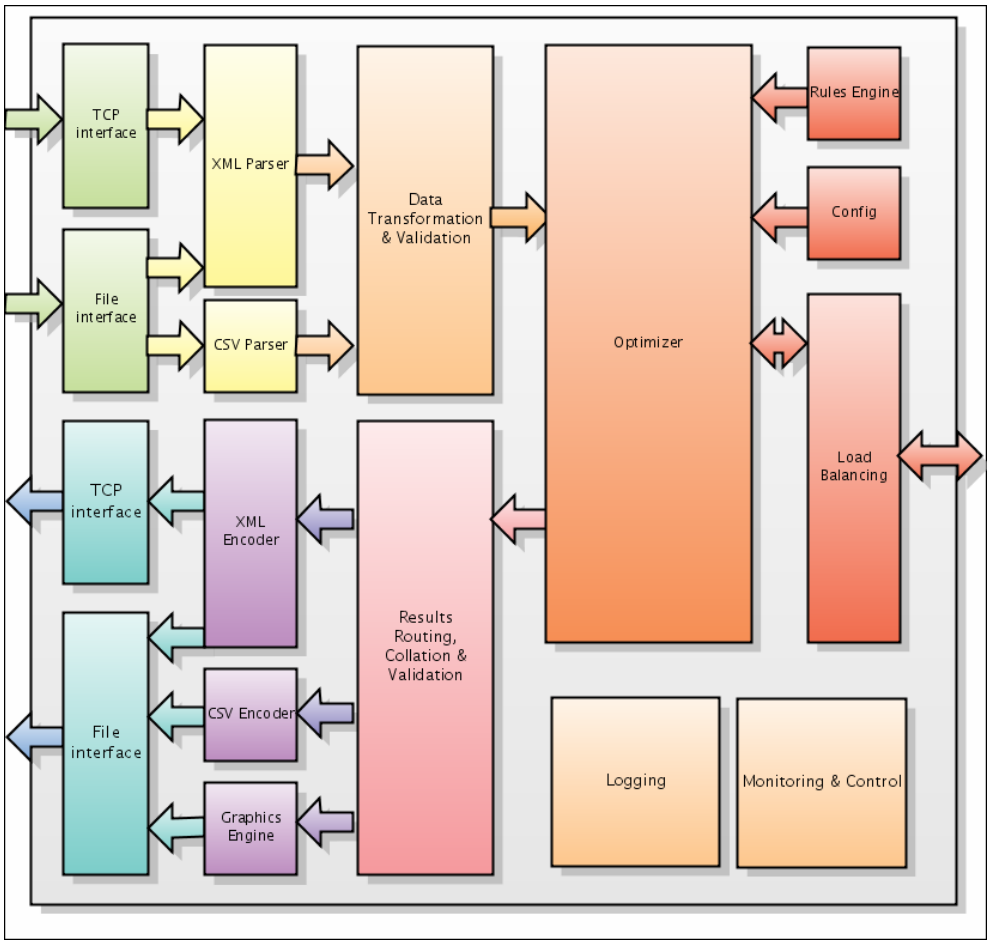


Figure 15. The internal structure of the BlackBox showing data flow.

Single-use mode - simply specify an input and an output file. The BB will run, process the input file, create the solution in the output file and exit. Input and output files may be CSV or XML, and may be mixed if required.

File mode - the BB constantly monitors a nominated directory. This can be local or on a remote server via a shared network drive. Any loading case files placed in this directory are automatically detected and processed by the BB.

To increase throughput it is perfectly feasible to launch a number of BB processes and direct them all to monitor the same directory. File locking and synchronization is automatically handled by the BB's themselves.

On completion of processing, the BB writes an output file to another nominated directory. Large files or slow servers are handled by an additional semaphore file which indicates to the caller that the file has been completely written. Files may be CSV or XML, and may be mixed if required.

TCP sockets - the BB acts as a TCP server, meaning that it will accept connections from external source that are able to transmit and receive via the TCP protocol. Clients have two choices as to how the optimization is performed:

1) Synchronous calls: data is transmitted and the client is blocked by the BB until the load is completed, and the data is returned immediately.

2) Asynchronous calls: data is transmitted and the BB frees the client connection immediately. Optimization continues on the BB, and the client re-connects later to collect the results.

Both approaches can be used simultaneously. Data must be XML.

SOAP - when combined with the BB Gateway (as described above) the BB can also act as a SOAP server. As in the case of the TCP sockets approach, optimization can be performed synchronously or asynchronously.

All of the above processing can be taking place simultaneously thanks to the BB's advanced multi-threaded design. In addition, the system provides a client queue so that an unlimited number of incoming connections can be made and data transmitted in a timely manner. Clients are processed by the next available thread within the BB, much in the way a printer server will send print jobs to the next available printer.

Threads are configurable to allow the system to be tuned for the specific environment in which it is to be used. This also means that an extremely large and complex loading problem will not block other incoming loads.

Finally, the BB can also generate graphical load plans for each load, or can trigger load plan generation only if the resulting load exceeds some pre-defined level of complexity.

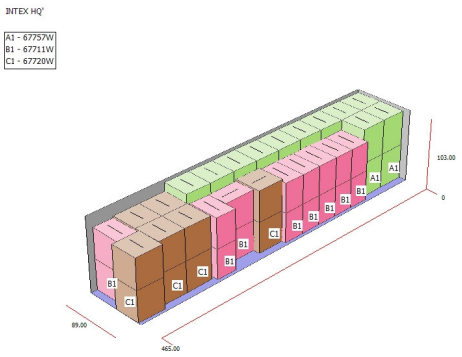


Figure 16. Sample output from the BlackBox, generated via its internal graphics engine. Output can be created in jpg, bmp or pdf format.

Output can optionally be split by product so that clear easy-to-follow step-by-step loading plans can be generated.

The Cube-IQ Database

The Windows versions of Cube-IQ ship with an industrial-strength Relational Database built right in, or available via our sophisticated web services. The database is fully multi-user, and ODBC-compliant. It supports standard SQL statements and can be maintained either via the Cube-IQ interface, or externally from your Admin systems.

All the data your operation will ever need is right at your fingertips, and can be synchronized with external systems. Data can be imported and exported in a number of formats, including XML, CSV, XLS or via direct SQL statements.

Chapter

5

In Summary

Where we re-cap all the details

We hope you now have a multitude of good reasons how and why your operation can reap significant benefits from implementing or extending your Load Planning operations.

Customization

MagicLogic specializes in extending, enhancing and customizing its products to "fit the bill." A large proportion of our business comes directly from consultancy to businesses who wish to leverage the power of the Cube-IQ optimizers and software, but have specific requirements. Over 50% of our clients are using versions of Cube-IQ that were specifically modified for them.

Examples of our recent customization work include:

- Enhanced reports
- New import / export filters
- Loading rules
- Buddy-stacking for pallets
- Weight limits and axles ratios

Features Comparison

	Cube-IQ Web	Cube-IQ 3	BlackBox	Cube-IQ SOA
Tight budget / low volume usage	☑			
Desktop user	☑	☑		
Enterprise	☑	☑	☑	☑
Cartonization			☑	☑
Integration with other systems			☑	☑
Load Editing		☑		☑
Roll Loading		☑	☑	☑
Furniture		☑	☑	☑
Lumber[3]		☑	☑	☑
ULDs		☑	☑	☑

Finding out more

Contact us now to leverage the power of Cube-IQ in your operation. We have a worldwide network of agents and offer support across every time zones in the world.

Call us for details and contact information for your nearest agent.

Our Challenge to You

Evaluation versions of our products are freely downloadable from our website. Take Cube-IQ for a test drive today and compare our results with your existing manual loads or Load Planning system. And, by all means, compare our loads with those produced by our competitors. You will be surprised by the difference.

Contact us for assistance in loading your own data into the system. Your personal account manager will be pleased to demonstrate the system on-line for you.

If your company is implementing a WMS or TMS, and you need enhance loading or cartonization capabilities, ask your supplier to contact us. The Cube-IQ BlackBox can be integrated in all third party systems.

[3] MagicLogic provides special versions of its software specifically tailored for the Lumber Industry

References

MagicLogic has now spent four years as one of the Top-100 Logistics IT service providers[4].

The company was set up in 1995 to provide optimization services and software across a number of industries, including transportation and logistics, cutting, scheduling and interactive training. Our products include Cut-IQ, Plan-IQ, CarpetCutter, PickPack and TKL.

MagicLogic's flagship product, Cube-IQ, was introduced in 1996 and is now in daily use by over 550 clients in 40 countries.

MagicLogic is situated close to Vancouver, British Columbia, Canada, with satellite offices in the UK and Switzerland.

Customer recommendations, case studies and evaluation copies of our products are available by request.

For more information please contact us:

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[4] Source: Inbound Logistics magazine 2001, 2003, 2005, 2006