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# Braiins

Braiins is Financial Reporting.

## Braiins is the tool to enable accountants to save the world

#### How?

Financial Reporting is a key part of the Accountability of all Organisations to all of their stakeholders.

As Prince Charles said in an [address to the International Forum of Independent Audit Regulators 2012](http://www.accountingforsustainability.org/hrh-the-prince-of-wales-address-to-international-forum-of-independent-audit-regulators-2012" \o "Video of Prince Charles' address to the International Forum of Independent Audit Regulators 2012) "It is accountants [and Financial Reporting] who are going to save the world". A transcript of Prince Charles’ address is included as Appendix 1.

Yet Accountants are struggling to meet this lofty goal, in part because their tools have not been up to the task.

As Jacob Nielsen (Usability guru of the Nielsen Norman group) said in his newsletter of 8 July 2013 when commenting on the death of Dr. Douglas C. Engelbart, the inventor of the mouse “But Engelbart’s deeper goals have yet to be realized, since most computers end up wasting our time as opposed to truly allowing us to have better insights.”

That is especially true of most financial reporting despite the plethora of standards and regulations.

Braiins breaks through the complexities and transforms the process of producing Financial Statements, providing the tool for accountants to release the insights and reach the lofty goal of saving the world.

# The Problem Braiins Solves

## The Challenges facing Accountants and Businesses

Major environmental, legislative, business and technical changes in quick succession are resulting in the biggest upheaval to the process methodology and content of financial reporting EVER.

### Environment

The world at large expects more of organisations in the 21st Century. The address by Prince Charles presents the expectations eloquently, and clearly defines the role that accountants and financial reporting can play for the betterment of all, if they deliver.

### Legislative Reporting Framework

* Creation and adoption of international standards (International Financial Reporting Standards or IFRSs) which are fundamentally different in approach or philosophy from previous GAAP (Generally Accepted Accounting Principles) based standards, causing major changes in regulatory reporting world-wide and in the UK in particular.
* Despite the success of the IASB (International Accounting Standards Board), the body responsible for the IFRSs, in creating and gaining international acceptance for IFRS, universality has not been achieved, and is not likely to be achieved in the foreseeable future. US GAAP isn’t going away any time soon. Even in the UK, where the IASB is based, we are faced with UK IFRS i.e. a UK specific version of IFRS.  
    
  So accountants and financial reporting will continue to need to cope with multiple standards, which can even involve different philosophies for determining what is “true and fair” e.g. IFRS v GAAP.
* Increasing requirement to report for multiple jurisdictions and multiple standards like those mentioned above e.g. US GAAP and IFRS and or UK IFRS  
    
  The differences between standards can in the worst case involve the production of completely separates sets of accounts from the raw data onwards, which is an obvious cost (waste) and potential source of error and confusion.
* Requirement to produce all reports in computer readable form – (i)XBRL

### Business Environment

* Global impact – more businesses operating across multiple countries
* Interconnected supply chains and outsourcing
* Real time reporting and the increasing stakeholder readership
* Decentralised structures and increasing homeworkers, virtual workers, outsourced work
* Ever more sophisticated internal reporting systems; simple ledgers giving way to complex ERP systems
* Increasing competition – from other companies, technologies, industries and countries. Now, even your published accounts form part of your competitive armoury.

### Technologies

* Cloud computing (also known as SaaS - Software as a Service)
* Mobile always on computing with more people wanting, and companies allowing or even encouraging BYOD (Bring Your Own Device)
* Web 2.0 going to Web 3.0 or the Semantic Web
* Business Intelligence (BI) systems
* XBRL which was a laudable 1998 fresh start attempt to cope with some of the issues mentioned above, and with a lot of effort and commitment by many has been adopted around the world in consequence. As a result of learning and all the other changes in progress, XBRL has also been evolving “on the job” which, while good, has imposed its own set of keeping up issues. Tuples came and went, the calculation linkbase is being replaced by the formula linkbase before many have even caught up with the calculation linkbase; the table linkbase has arrived recently, and so on. How many accountants even know what a linkbase is anyway?
* BigData which is one of the current buzzwords, even if you are not the NSA. Much BigData work has been for marketing purposes, mining social website posts for example, but it also is being used in BI applications e.g. SAP’s HANA. Financial Reports when properly available in truly comparable semantic form will be a most useful applicable of BigData techniques.

## The Failure of Financial Reporting Systems to Keep Up

By and large Financial Reporting Systems have not kept up with the changes and needs very well. The complexities and constant changes have led to evolutionary change that has mostly involved tacking more on to what was there before, albeit with a prettier face.

Whereas an entity's general ledgers are controlled double entry environments, the financial statement reporting complexities mean that many entities, especially larger ones, use a multitude of Excel spreadsheets and Word documents that are pulled together to produce the financial statements. This has led to numerous errors, some quite serious, resulting in major and embarrassing restatements.

Such approaches, using tacked on afterthoughts and accounts hand crafted via Word and Excel, are past their use by date. With only such limited tools in their tool-box accountants and financial reporting will continue to fall short of what the modern world needs and expects.

# The Braiins Promise

Braiins transforms the process of financial reporting to provide accountants with the tool to allow them to “Save the World” in line with the vision of Prince Charles.

The following sections describe how Braiins delivers on this promise.

## The Braiins Design

Braiins has been designed to:

* Provide a zero capital cost, high value, pay as you go, fast, easy to use and understand financial reporting system for use by accountants and business people, accessible to any (authorised) user, anywhere, anytime, on any internet capable device, for any entity, with continuous improvement without any upgrade hassles, by embracing and enabling cloud computing in business and accounting financial reporting language.
* Free users from financial or data lock in. There is no contract and data can be exported in open formats or be deleted fully as required.

Simplify all parts of the process from guided fool-proof data entry, to intuitive report customisation, so that:

* it is not necessary to become an expert in computers, XBRL, Taxonomies, Excel/Word integration to produce, analyse, and use financial reports
* study of complicated and difficult books such as “XBRL for Dummies” or wading through a 65 slide PowerPoint slide show on "How to Use Dimensions" are not needed to understand and use any part of the system
* all that is required is understanding of financial reporting (accounting and standards where applicable) and use of an internet browser
* Eliminate duplicated data, effort and potential errors so that companies or groups operating in multiple countries/jurisdictions can re-use common data to generate accounts for each different set of statements/reporting standards/taxonomies.
* Reduce errors from lack of control over a mishmash of data from various sources.
* Handle all sizes, types and structures of entity.
* Eliminate all range restrictions e.g. on number of subsidiaries or directors.
* Report over multiple jurisdictions, even within one Entity or Group.
* Exchange data (import or export) with other systems whether cloud based or not.
* Make all information and reports available in semantic web form.
* Handle changing standards, additional disclosure requirements, including data upgrades, seamlessly, with no effort by users other than getting up to date with the new rules.
* Handle Restatements (Prior Period Adjustments) properly with all directly and indirectly affected values able to be shown in a different style.
* Include smart input/editing optimised for accuracy and ease of use with intelligent prompting, and validation at the point of input/editing, rather than provide for basic repetitive data entry key punching speed as links to general accounting systems (Cloud or In-House) will provide the bulk of the required data.
* Keep data indefinitely – until specifically deleted.
* Automate the entire process from Record to Report.

Operate with speed and style, from input to final reports:

* Input is fully prompted and validated, with HTML5 local storage used to keep it snappy
* Report generation is remarkably fast thanks to the Braiins design, coding, and servers. Braiins handles all the sophistication described here yet still spits out a 50 page set of accounts in under a quarter of a second, effectively on demand, allowing users to focus to completing the job without being distracted by the “coffee break” syndrome of some systems due to the wait for accounts to re-generate after an edit
* Braiins generates good, compliant non-verbose HTML with CSS3 to add customisable style and class to the accounts, with all of this optionally carried across to FTP documents
* Meet regulatory XBRL or iXBRL reporting requirements, initially in the UK for FRS 102, then for other standards and countries.
* Use a financial information model and processing engine developed by Braiins called the Standardised Information Model (SIM) for categorising (describing) and storing financial data that automatically handles much of the processing, accounting relationships, error checking, control (what is sensible/allowable, who can do what, and who did what when), and complexity management, “behind the scenes” without intruding on actual use.

Use the Braiins Semantic Financial Reporting (SFR) front end to SIM which

* includes a Report Generator that is easy to understand, use and maintain
* provides smart searching and analysis to ‘release the insights’

For more information on how Braiins meets these demanding goals see Appendix 2 The Details.

## Key Concepts of Braiins

The key concepts of Braiins come down to:

1. Cloud based to provide accessibility, interconnectivity, reliability, pay as you go cash flow flexibility, and development continuity, all with no lock in.
2. Highest overall quality from a company focussed on Financial Reporting alone, driven by people passionate about the role of Financial Reporting in the world.
3. Dedicated financial accounting engine. Key to the program’s power is a conceptual redesign of all the major components. They have been amalgamated seamlessly in to a financial accounting engine that incorporates levels of automation, integration and intelligence beyond anything achievable in any conventional FR program. This simplifies the accounting and regulatory reporting, whilst ensuring accounting integrity, all supported with complete, fully detailed data trails.
4. Principle of fully explicit relationships – if one piece of information is related to other pieces of information then their full relationship to each other is declared and controlled within the program.
5. Making XBRL output for regulatory or other requirements easy without any knowledge of XBRL details, or need to descend to things like XBRL manual tagging.
6. Creating, storing and organising all data in a standardised form for cross entity/jurisdiction compatibility via SIM (Standardised Information Model) with access to that data via SFR (Semantic Financial Reporting). The SFR-SIM combination is potentially a unified financial reporting system for “everything”.  
     
   The development and use of SFR-SIM enables Braiins to access financial information from virtually any computerised accounting system, and output across multiple regulatory jurisdictions even for one Entity or Group from one set of raw data.

The first five points above could be seen as desirable features of any modern, advanced Financial Reporting program, with the difference that Braiins can really deliver them thanks to the complete re-think of the whole process represented by point 6.

The 6th point, the “iceberg beneath the water” (SFR-SIM), is the truly revolutionary aspect of Braiins.

## What Braiins Is and Is Not

Braiins is a wide ranging Financial Reporting system to allow All Organisation report fully to All Stakeholders, for quarterly or annual reports.

Braiins works from general ledger and other external data onwards to produce financial statements and business reports.

Braiins can work from the simple TB of a micro business, the detailed GL of an SME or even manage massive amounts of data for a group e.g. for hundreds of subsidiaries/associates/join ventures. (No matter how big the volume of data stored, it remains fast and responsive. In fact everything about Braiins is fast.)

Braiins is not a general or management accounting system i.e. it is not intended for sales ledger, stock ledger, VAT/GST, payroll etc. processing. Rather it works with such systems to specialise in the Financial Reporting “end product” or Final Accounts as they are called in the UK.

## Braiins and XBRL

Braiins is not a direct replacement for or alternative to XBRL. Braiins works with XBRL. Charles Hoffman, the “father” of XBRL, and the hundreds or thousands of people around the world who have worked on XBRL Taxonomies and on fostering the adoption of XBRL have done sterling work. XBRL is well on its way towards ubiquity as a result of their good efforts.

Whilst we see that XBRL has contributed a lot, and will continue to do so, in our view it should be more of a behind the scenes technology, like databases say, which an accountant or business person should not need to know about in detail if his FR system is up to the task. XBRL can become very complicated. In our view the expectation of recent years that all accountants should become XBRL literate is unnecessary and misguided. In our opinion the FR should do all the XBRL work for a business person or an accountant in business or practice.

Thus Braiins presents everything in accounting and business speak with nary a mention of XBRL, doing everything in the background to automatically handle the XBRL work. If we have been able to achieve this, it is because we have been able to see further thanks to standing on the shoulders of giants, to quote Isaac Newton. We acknowledge the debt that Braiins and its concepts owe to XBRL.

If there was interest from the financial reporting community, we in turn would open source SIM which might be viewed as the basis for a possible global standard in much the same way as SBR and XBRL-GL. At all times we remain open to working with XBRL.org, regulatory bodies, and standards bodies, in addition to our customers to see Braiins and Financial Reporting continue to advance.

# End Result

The end result of the Braiins re-think of the Financial Reporting process is:

All computer, XBRL, and semantic web complexity is handled transparently by Braiins

Control is returned to the Accountant in a way that allows him/her to concentrate on just the accounting, and the insights contained within the accounting data and its connections/comparisons

True inter-entity comparability

True cross taxonomy/jurisdiction accounts from one set of raw data

* Complete integrity and transparency of all data

Semantic web integration = full reporting of the whole impact of a business, environmental as well as financial

Full business reporting service and inter entity/country comparisons to any level of detail and sophistication for public company information, and for any other entities which choose to participate with privacy preserved

* Clearer, better, less error prone accounting and reporting for all

which enables Accounting and Business Reporting to be as it can and should be in the 21st century given the computing power now available to all thanks to the cloud

which means that Braiins is the tool that will empower Accountants to save the world.

**David Hartley** and **Charles Woodgate**  
Braiins Ltd.  
July 2013

# HRH The Prince of Wales Address to International Forum of Independent Audit Regulators 2012

Video link, caption, and transcript to be entered here.

# The Details

The Braiins Promise is very demanding, so how does Braiins achieve it?

The key concepts which enable Braiins to deliver are:

## Better Structure – Standardised Information Model (SIM)

Conventional Financial Reporting (FR) programs take the various components – data import, GL codes, tables and schedules, report generator and latterly (i)XBRL output - and bolt them all together like a toolbox for a user to assemble each entity’s financial reports on your in-house computers, or increasingly, via cloud services.

But we asked ourselves this question? In this changed reporting and IT environment, if you were to design a brand new Financial Reporting program would it be constructed like any of the existing programs? We concluded “No”. So Braiins starts with a clean design and a fresh perspective.

In the nearly 40 years since FR programs started to appear (HAPAS, HArtley Professional Accounting System launched in 1975 being one of the first), the accounting and IT worlds have changed dramatically. It is time that FR program concepts did also.

FR program developers face the question of how to organise the data, which typically involves a Chart of Accounts (CoA) in some shape or form. Three very different ways are:

* Try to make the Chart(s) so comprehensive that they have a code or multi-level sub code for every possible piece of accounting and disclosure information, both double entry, and schedule in nature, which could ever be required. This can mean having multiple Charts according to the target taxonomy, jurisdiction, and entity type, with each running to many thousands of Codes. This becomes a nightmare for all concerned, especially if additional disclosure requirements come along which don’t fit the coding structure plan, as has happened all too often.  
    
  One attempt at developing a new chart targeting IFRS contains 35,000 accounts, but even that monster just scratches the surface, as the theoretical number of variations via the IFRS XBRL Taxonomy runs into the hundreds of millions.
* Dispense with an internal CoA in the FR system and link information directly from the entity’s own GL CoA, then add schedules produced in Excel and/or Word.  
    
  This approach has its niceties, and demonstrates well, so is beloved by Marketing, but it also has problems due to entity GL variations, and the complete lack of any structure for the schedule information, meaning that much control, logic and accounting integrity is thrown away with the internal CoA.
* The advent of XBRL Taxonomies was initially seen by some as the way out of the mire, by using the XBRL concept codes (names) directly as the CoA codes, which would then make the generation of XBRL financial statements easy.  
    
  Unfortunately, things didn’t quite work out as hoped, as XBRL is designed to describe the result (the financial statements), not the input data. Often there is no direct one to one match between an entity’s GL and the XBRL Taxonomy. XBRL Taxonomies do not use double entry concepts or control accounts. Thus, attempting to transfer data into an XBRL code based FR system from an entity’s GL would require some operations similar to the manual XBRL tagging that people have to resort to when converting Word or other non-XBRL accounts to XBRL. Not very good!  
    
  Charles Hoffman has wondered why accounting software does not use XBRL directly. This would seem to be why. As far as we know, the apparently tempting option of a pure XBRL “chart” is not used by any real world FR system.

FR systems that have evolved from last century’s simple 3 then 5 digit code charts have tended to go the first way, with ever more complicated and messy charts.

The trend in the market for newer systems seems to be towards the second more flexible “marketing driven” option, as the first all-encompassing chart is perceived as being too messy, too difficult, and not “user friendly”.

The Braiins fresh start has allowed us to take a different, and we believe, smarter approach.

The Standards Information Model (SIM) equivalent of a CoA maintains all the accounting details and integrity in a tree structure of only one thousand “account” codes, which have names to make then easy remember or search for. The names are similar to XBRL names but tend to be shorter, far fewer in number, and intended for standardised cross taxonomy/jurisdiction/entity type use.

### Braiins Report Objects or BROs

The "accounts" themselves are actually smart objects called BROs or Braiins Report Objects which embody within themselves

the knowledge of what sort of data they can hold – money, integer number, number with decimal fraction, text, shares, percentage, ratio like 77:81 for a share split, image, video, attachment

whether, for money, if the data is Double Entry in nature (posting to the BRO has to be part of a balancing double entry journal) or schedule (single entry) in nature

what sums (additions) should be performed with numerical data if any

what properties (next section) can be used to further describe any data item

what additional checks if any should be performed with the data

how to convert the data for export and output

how to compare the data

* how to convert that data to XBRL output.

One BRO can hold lots of data. BROs at the base or core of Braiins prevent many errors ever getting started. Higher level checks are performed using a version of the Braiins report generator, as a kind of super formula linkbase, but one which can be easily extended and augmented for various entity types and taxonomies/jurisdictions.

### Properties

In addition to its BRO code in the tree, any item of financial or other information can be further described if desired by adding to it as many properties as are needed to fully describe that piece of information, using properties permitted for that BRO. The concept is similar to the tagging of blog post and other web pages so that web search engines can find and organise the information. SIM does the same for the data in Braiins, but in a controlled way, so that many possible errors are eliminated right at the start.

Properties are a bit like XBRL dimensions, but both broader and simpler. Properties are grouped into Folios, a bit like XBRL hypercubes. (Different names have been used deliberately to avoid confusion.)

Properties describe a value to any desired degree of detail. SIM includes dynamic properties e.g. Officer.BondJ or Sales, Asia, HK, Entity.WongAndCo. In this way the short and simple "chart of accounts" can handle any degree of detail or complexity. People, Entity, Address, and Contact details are held in the database just once but can be referenced as properties, with any edits to the DB values flowing through to wherever that property is used.

The property system is flexible and open ended e.g. there is no 40 Directors limit as in UK-GAAP and UK-IFRS, or for anything else. (The limits still apply, of course, when outputting XBBRL for a given taxonomy, but there are no limits within SIM itself.)

There are two forms of dynamic property to replace XBRL tuples or typed dimensions and the X for extensibility of XBRL. There is no need to start trying to think in terms of n dimensional hypercubes (huh?) as with XBRL. Just attach whatever properties are needed or desired to describe a particular value (within controlled limits as per the BRO's knowledge), and Braiins via SIM sorts it all out.

In short, Braiins and SIM are “properties all the way”.

An example should make it clear.

BS.Assets.PPE could be the code for the Property Plant and Equipment assets BRO. (Tangible Fixed Assets in older terminology.) That’s it - one BRO (one code) for all PPE assets.

A particular asset class could be tagged as ‘Land and Buildings’, and a transaction affecting it tagged as an Acquisition or a Disposal, or Depreciation or Impairment etc. SIM knows how these relate to one another and which combinations are valid. SIM automatically performs Start/End (Opening/Closing) calculations using movement postings. SIM automatically sums the PPE assets by class (tag group), and for all PPE assets. A TB can show full details, intermediate sums, or just the total sums e.g. all PPE Assets. Similarly an SFR report (and report writer) does not need to be concerned about summing PPE assets or groups of them. That all falls out via the tag groups used.

SIM would prevent a PPE entry being tagged as something silly for a PPE Asset like ‘Special Purpose Entity’. (XBRL tagging systems cannot prevent all such silly postings due to the broader ways in which XBRL Taxonomies are defined, so ‘valid’ XBRL can sometimes be accounting nonsense. SIM keeps the lid on that can of worms.)

### SIM Breadth and Depth

Over the last few decades accounting standards have become ever more complicated, and despite the best efforts of the IASB with IFRS, there are still many international/jurisdictional variations in effect, and this is likely to remain the case. SIM is designed to cope with this, whereas other structures are not.

SIM’s data types and dynamic properties (tags) make it possible to handle information relating to different

Taxonomies (standards)

Jurisdictions

Industries

Entity legal status

Information type

without having to duplicate common data or structures.

Whereas an entity's general ledgers are controlled double entry environments, the financial statement reporting complexities mean that many entities, especially larger ones, use a multitude of Excel spreadsheets and Word documents that are pulled together to produce the financial statements. This has led to numerous errors, some quite serious. This complicated area is often referred to as Record to Report. SIM brings that whole situation back under control, without inhibiting flexibility, or making things complicated. In fact, it actually makes it all easier.

### SIM and XBRL

XBRL adoption is widespread throughout the world, and is well on its way to becoming ubiquitous. So Braiins must and does speak XBRL.

Given that, why SIM?

The SIM concepts are not incompatible with XBRL, let alone competing. On the contrary, they are derived from concepts used in XBRL taxonomies. We have just refined and extended them, and applied them to the very core of the program, rather than leave them as extended add-ins as is done by many conventional accounts production programs. In short, we have taken XBRL to its financial reporting logical conclusion.

The aims of XBRL are laudable: machine readable accounting/business data that is standardised and comparable across entities. (No XBRL system yet provides for cross jurisdictional comparisons.)

The originators of XBRL and all those who have much put much effort into it over the years are to be congratulated on their success.

However, in practice XBRL has become complicated and intimidating. In part this is the "arrow in the back" consequences of XBRL evolving on the fly e.g. tuples came and went, the calculation linkbase is being replaced by the formula linkbase before many have even caught up with the calculation linkbase; the table linkbase has arrived recently, and so on. And how many accountants even know what a linkbase is anyway? The Braiins contention is that they do not need to know.

What started barely 10 years ago with the intent of providing a universal business/financial language has now become diverse and fragmented. This is compounded by the difficulty in translating between the taxonomies.

XBRL Taxonomies can provide a measure of checking when the accounts are output in XBRL form via the Calculation and Formula linkbases, but not all Taxonomies make use of these facilities. The UK ones do not, for example. The UK regulatory authorities, and others, make the assumption that the systems used to generate the accounts provide accounting integrity. That was once the case in simpler days, but is no longer necessarily true. Bolting on XBRL to older systems designed for the pre XBRL world, the demand from marketing departments to allow editing on the face of the accounts, plus the widespread use of Excel and Word as "accounts generation" tools, mean data integrity and control has been lost. In most cases, complete nonsense can be entered, and even be verified as valid XBRL by XBRL gateways.

The common use of the X (eXtensible) feature of XBRL to add entity specific tags, especially in the US re US GAAP, has reduced the utility of XBRL data. Thus the data isn’t as comparable across entities or as “semantic” as is desirable.

So, in some respects, despite all the advances in computer power and sophistication, and the advent of XBRL, accounting and business reporting has gone backwards. Further, it appears to us that too much of the XBRL complexity intrudes on the accounting.

Braiins via SIM reverses these negative trends, while retaining the benefits of XBRL, so taking a giant leap forwards again, in a non-intimidating way. In fact Braiins is deceptively simple and easy. Accountants and business people can understand it without having to study a difficult 400 page book like "XBRL for Dummies" or wade through a 65 slide PowerPoint slide show on "How to Use Dimensions".

With SIM everything just works in a natural way, with clear choices at every step, and the XBRL “stuff” happens automatically in the background.

One approach to making use of XBRL and of coping with its complexities, is for accountants to study it. XBRL courses are available and accountants can become XBRL certified.

Braiins takes a different view and via SIM hides the XBRL detail, freeing the accountant to focus on the accounting and business insights, working just with natural, guided inputs that make sense without any specific study of certification being needed beyond understand of the accounting principles and standards in use.

Any computer system tries to hide the XBRL details, but with varying degrees of success. At least one system even offers editing on the face accounts for both accounting/layout and XBRL. Awful! Many or most systems end up with some need for manual XBRL tagging.

Braiins and SIM go all the way – XBRL benefits retained with all XBRL detail and complexities hidden.

## Semantic Financial Reporting (SFR)

Semantic Financial Reporting (SFR) is the part of Braiins which uses the SIM data to

Generate reports in plain HTML, sematic HTML, iXBRL, XBRL, or PDF

Provide validity and consistency checks

* Analyse and compare data

Producing financial reports with correct, validated content for the target standard/taxonomy in the desired presentation style that is paginated and cross referenced, and now also in iXBRL can become incredibly complicated.

The Charts and Formats which specify the output report structure, content, and style quickly become larger and more complicated that the program itself, and consequently consume ever increasing resources, both from the supplying software house and the end user if they have done any customisation.

Braiins keeps this potential mess more under control than ever before thanks to SIM building in power and taxonomy knowledge (control) at the lowest levels, so that the high level reporting via SFR can be simpler, more intuitive, and less prone to error with regulatory change.

### Report Generator – powerful, simple and intuitive

The Braiins report generator can produce any desired report as HTML, sematic HMTL, iXBRL, or in PDF format.

The report generator is powerful yet easier to use than others because it works with SIM and SIM’s BROs that already have performed many of the required summations, and which know where they can or should not be used, because of their inbuilt knowledge e.g. a Revenue BRO could not be wrongly used in a Balance Sheet report. It is also fast, very fast. (Report formats are compiled into PHP code that runs on the server in native mode like any other program.)

Restated figures are kept track of so that every value in the comparatives of a set of accounts that is affected by restatements can be shown in a different style for example.

Schedule tables for notes fall out easily.

Graphs and images can be embedded.

### Validation and Consistency Checks

As has been mentioned, SIM starts the validation process by controlling what can be entered where, with checks defined at the BRO level.

Further broader validation and consistency checks are performed using the report generator, which has access to all the data via SIM plus any required degree of logic and programming. A person writing validation or consistency check formats does not need to be a programmer to do this, however, as formats can use functions written by Braiins programmers to handle the IT stuff.

Because report generator formats are compiled to PHP code, they can use functions written in PHP code. Creating and adding additional PHP functions to the library of functions for use in validation formats is easy and quick for Braiins programmers. The library of such functions will become extensive and powerful, so enabling the validation and data consistency checks to also be extensive.

### Analyse and Compare Data

In a similar way to validation, the report generator can be used to analyse and compare data.

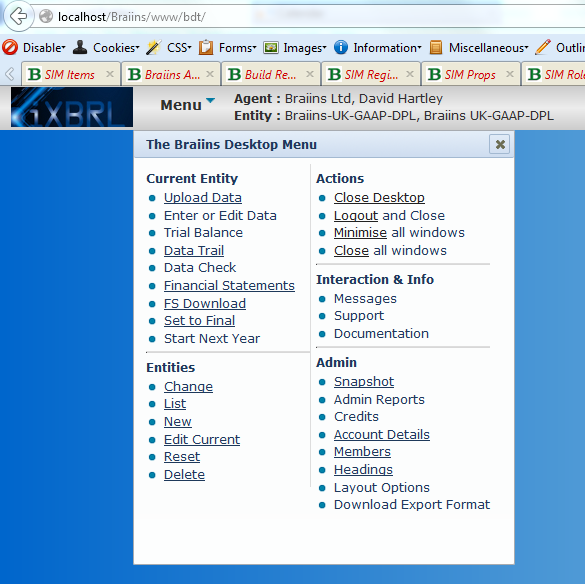
Initially this will be restricted to data for entities of the agent or group stored within Braiins. However, it is planned to broaden this to entities of other agents or groups within Braiins with permission i.e. for agents or entities who agree to allow data comparison, and then finally to entities whose information is public via the internet i.e. at the end of a url, whether in XBRL or SIM format.

## Braiins Website and Braiins Desktop

The Braiins website (Braiins.com) is where it all happens.

The main site provides information (marketing), sign up, and login for Members. (Users of Braiins are called Members.)

Members access all of the Braiins functionality via the Braiins Desktop or BDT:



## The Technology

Braiins is built upon the following technologies and design decisions:

Data - any and all data appropriate to wide ranging financial reporting:

* Data described, categorised, and made “intelligent” using SIM
* Data stored in Journals within DataSets
* Data is Financial Reporting focussed i.e. it is NOT a complete transaction based ledger, but a record of the final balances and any edits made to them
* No limits by year i.e. data is kept until specifically deleted
* No limits on numbers e.g. of officers or subsidiaries
* 4 periods per year for quarterly reporting. (Not monthly as Braiins is not expected to be used for monthly management reporting)
* Data exportable
* Data deleteable
* Data importable in various formats according to source, list will keep growing as needed
* Data types:
* GL data in whole dollars or pounds etc i.e. cents or pence are not stored
* Additional financial disclosure numeric or text data
* Non-financial ancillary environmental text or other data
* Optional related data dynamically (live, in real time) brought into play, or removed as desired according to the report being produced e.g. accounting information specific to corporation/income tax.  
    
  This kind of data is stored using DataSets and Journals with the SIM properties (tags) defining exactly what aspect the data applies to e.g. Income Tax Status  
   - Allowable (default)  
   - Disallowable  
    
  The types of data that is allowable or disallowable will vary from country to country, but is not related per se to a Regulatory Accounting Taxonomy. Braiins’ ability to work with different jurisdictions as well as different taxonomies allows to cope with such differences dynamically i.e. without manual intervention or re-posting
* Data organised by Agent (Accountancy Practice) or Group, and any number of Entities within that Agent or Group.
* Entities, people, contacts, and addresses DB information are available to any entity of the Agent or Group, including being used to describe other data e.g. the remuneration of BondJames from Entity XYZCorp. This use of DB references to describe data is a part of SIM that is natural but powerful and not available in XBRL.

SIM (Standards Information Model) involving DB data, Folios, Properties, and Property Items (somewhat similar to XBRL Hypercubes, Dimensions, and Dimension members but more flexible and natural with no need for a tuple equivalent and without limits as to numbers anywhere) to describe the data, and BROs (Braiins Report Objects) to store it, provide intelligence, and perform some automatic validation and processing

SFR (Semantic Financial Reporting) front end to SIM to provide the Braiins Report Generator, plus Analysis and Validation tools. Report Generator formats are compiled into PHP code as part of the process by which Braiins deliver its speed.

Cloud based using UK servers initially, later others but NOT USA ones

MySQL database running on a cluster of Linux servers, to become a Hadoop cluster as size increases

PHP 5 on the servers, optimised and compiled

* Client (user device) required is an internet connected device with a reasonable screen form factor able to run an HTML5 capable browser e.g. Chrome, FireFox or Internet Explorer 10. (Not IE before 10.) All modern PCs, laptops, plus most tablets and phablets are good. HTML5’s local storage and JavaScript are used.

OOP (Object Oriented Programming) built in to the heart of Braiins to implement SIM and in particular BROs within SIM

* Output reports can be HTML, semantic HTML, iXBRL, XBRL, or PDF

XBRL taxonomies which are published in XML form (103,000 nodes of XM for UK-IFRS), are converted from the XML to MySQL DB form for use by Braiins, then optimised again for SFR-SIM use as pure PHP code as another aspect of providing the Braiins speed

# Braiins Road Map

Launch for use by UK Agents (Accounting Practices) with FRS 102, Private Limited Companies, English only

Other entity types

Other taxonomies

Other jurisdictions

Comparative analysis across Braiins entity data for participating entities

Languages other than English

ResearchGate.com type network i.e. comparative database on a big and international scale

General Business Report System for companies as a web service tying in with the above