An Introduction to CadDo ESG

November 2020
The light on ESG is shining brighter than ever, yet there is a gap between expectation and reality. Investors need to view companies not only by financials...but by ESG Scores.

Sounds simple, but it’s a big challenge:

- Market providers only offer black-box calculations
- Conflicting raw-data, which keeps changing
- Bespoke solutions are costly, slow, and don’t evolve
- No market or government standards
- Ever changing consumer expectations
**The CadDo Service**

CadDo’s platform delivers concentrated intelligence on sustainability & ESG to Financial Services.

- It enables clear, aggregated ESG metrics and analysis across all investments.
- Data is weighted to each client’s assets giving a tailored, holistic view of holdings and portfolios.
- The platform gives asset managers and investors the ability to view their holdings with up-to-date, accurate ESG metrics, underlying data and trend information ...alongside existing financial performance analysis.

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**All the logic is your logic: no black-box calculations**

Underpinned by:

- SaaS “Preferred Solution” on Microsoft’s class-leading Azure platform
- A delivery team fully setup to work remotely, ensuring resiliency & agility
- World-class delivery partners, in ESRI and Microsoft (co-sell Partner)
It's all about the data

Open Data Integration
CadDo ESG is designed to work with your data providers

Open Data Sourcing
CadDo ESG is designed to take feeds from the host of data maintained by your analysts

Underpinned by our proven abilities to collate disparate data sources, and identify & manage inconsistencies and discrepancies
Able to provide a holistic view, needed to support new standards such as IORP II

- All Asset Classes
  - Equities
  - Funds
  - Bonds
  - Commodities
  - Illiquid Assets

- Non-Financial / ESG Metrics
  - Voting History
  - Engagements
  - Relationship Management
  - Screening Results
  - Outlier Identification

- Additional Information
  - Climate-related CapEx
  - ESG-related Initiatives
  - Related Subsidiaries
  - Geographical Spread
  - Climate-related Disclosures
Able to meet multiple reporting needs with the same underlying capability

The platform can meet any ESG reporting requirements, off the same underlying technology.

For instance, CadDo can deliver interactive Portfolio-manager toolsets alongside Investor-level reporting.
Step 1…Determine ESG Scores for base securities

CadDo ESG

The starting point for any solution, is the ability to produce meaningful and usable ESG Scores

...A single indicator of the overall ESG performance, in accordance with the priorities and preferences of you & your investors

CadDo ESG delivers that out-of-the-box

Live demo…
Step 2…Apply ESG Scores at Portfolio-level

Portfolio Management is complex

‘Direct’ ESG Scores can only be calculated for base securities (equities, bonds etc)

But investors buy funds to build their portfolios

Funds consist of mixtures of base securities & other funds…which in turn may own other funds…eventually getting down to base securities

How do you get from the client's portfolio, down through the layers of funds, to the base securities and their ESG Scores?

And then how do you roll that back up to a portfolio-level ESG score?
CadDo Calculate Solves The Problem

Our CadDo Calculate engine is designed, from the ground-up, to solve problems like this.

From parent-child relationships, to recursive allocations, CadDo Calculate delivers what’s needed.

We build bespoke models inline with your requirements, but based on our extensive experience.

All models run within our CadDo Calculate toolset meaning logic is auditable, controlled and visible.

Live demo…
And CadDo is also much broader than ESG

- **CadDo Transformation**
  Technical expertise in data integration and business modelling with unique cross-functional skills

- **CadDo Calculate**
  Class-leading calculation Software as a Service (SaaS) running on Microsoft’s global Azure platform

- **CadDo Analytics**
  Track record of helping clients improve business performance using Data Science methodologies

Underpinned by expertise in profitability & sustainability data, and analytics we help our clients in a broad range of areas, such as:

- Customer & Product Profitability
- Connecting Disparate Data Sources into a Single Version of the Truth
- Holistic Customer Investment

All delivered by a team of cross-functional experts across all these areas, allowing our 3-step model to be delivered efficiently without separate resources.
The flexibility to build a model that works for you

Define, Process and View data in one place

Define your drivers and logic

Build Scenarios & Hierarchies
## Our Solution

- Fully hosted. CadDo provide all the technology, management & support
- Fully customisable based on your changing needs & changing requirements
- Adaptive, enabling new features to be added quickly (days/weeks, not months)
- Fully scalable – the solution will grow and develop with you
- Client-specific reports, inline with your Marketing team’s requirements, with CadDo doing all development work

## Your Involvement

- Send your raw data as-is: no need to develop custom data extracts
- Your IT team can play as big or small a part as desired, from day-1 and into operational running
- Provide new requirements in a flexible way (mock-ups, drawings etc.): no functional specs!
- You focus on your business requirements, we do the rest
The process to go-live

**Design**
(weeks 1-2)

- Outline end-state reports
  (Fully remote via 1-3 design calls)
- Analyse required data
  (100% CadDo)
- Collate data, in currently available formats
  (100% client-side)

**Development & Go-Live**
(weeks 2-8)

- Build model
  (100% CadDo)
- Build reports
  (100% CadDo)
- Review & approve reports
  (Fully remote having calls as needed)

Iteratively move between design & development phases

Post go-live this agile development process continues to deliver new features
Reporting / Toolset Example Screenshots

Portfolio-manager Toolsets
The flexibility to see data by Portfolio, or the entire Universe of Issuers

See the whole universe of Issuers

...Or see a summary by Portfolio

See the ESG Score...or a score by E vs. S vs. G

Then drill into Portfolios & their holdings
The breadth to include a whole range of metrics and trend analysis

- Add extra 'leading' indicators
- See trend analysis
- Highlight key SDG metrics
- Drill through to see further details
The flexibility to define ESG Scores that suit your needs

Define multiple sets of criteria

Define your key metrics

Define your priorities by weighting each metric
Reporting / Toolset Example

Screenshots

Investor-level Reports
Easy-to-navigate interactive reports, with key Dashboards
Ability to drill to lower levels of details, dependent on the Investor's needs.
Architecture Summary
High-level Components

**CadDo Transformation**
A set of native SQL procedures, invoking SSIS for just the step of importing data from the Excel source files
SQL and SSIS steps follow our standardised and proprietary methodology

**OUTPUT:**
Clean data loaded into CadDo Calculate

**CadDo Calculate**
Multi-dimensional calculation engine, with all logical calculations in place
Application (coded in SQL) converts user-written simple formulae into native SQL which is executed against the database

**OUTPUT:**
All calculations performed and available for reporting

**CadDo Analytics**
Microsoft SQL Server Analysis Services (SSAS) reporting cubes sourcing data from CadDo Calculate
Power BI reports fed from the SSAS cubes
(Other reporting tools like Tableau, Click, Excel etc. also supported)

**OUTPUT:**
The end-user report
Fileshare (Windows 2019 VM)
Accessible via sFTP or browser-based
Users with VPNs can access fileshare via Windows Explorer

SQL Server 2019 (Windows 2019 VM)
Import from files (Excel, CSV, TXT etc.) using SSIS
Core ETL (data ingestion from remote servers, data transformation and data cleansing) runs using native SQL procedures. These are bespoke for each client, but follow CadDo’s standard methodologies & approaches
The standard CadDo Calculate application engine (SQL control logic with Java APIs) is installed on each client database, and accessed via a Web UI (Java)
Users configure all model/calculation elements through the Web UI. No Java or Stored Procedures or advanced SQL required.

CadDo Calculate acts to:
- Maintain the database (tables, columns, views, stored procedures, indexes, security etc.)
- Convert simple user-written logic into native SQL statements that execute the core calculations at the right time in the right order

Analysis Services 2019 (Windows 2019 VM)
Supporting both OLAP and Tabular models, though OLAP is the preferred route due to the maturity of the solution
No logic reside in this layer. It simply pulls data from the SQL database and presents to the final reporting toolset
**Multi-Tenancy**

Client-specific databases sit on shared SQL Server instance alongside other client databases.

No cross-contamination of data or functional procedures. Each database fully self-encompassing.

Client-specific fileshares

Client-specific reporting cubes on shared SSAS server

Only CadDo resources allowed back-end access

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**Dedicated Instance**

Client-specific databases sit on dedicated SQL Server instance on shared Virtual Machine.

No cross-contamination of data or functional procedures. Each database fully self-encompassing.

Client-specific fileshares

Client-specific reporting cubes on shared SSAS server

Client resources allowed back-end access

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**Dedicated Environment**

100% client-specific infrastructure (SQL Server, Virtual Machines, Analysis Services etc.)

Power requirements of dedicated VMs would be determined as part of scoping and pricing discussions.

Client resources allowed back-end access
Azure Virtual Network: Three Subnets (Front End | Back End | Domain Services)

- **Front End**
  - Fileshare VM
  - SSAS 2019 VM
  - SQL 2019 VM

- **Back End**
  - Monitor & Data G'way VM
  - Radius Server & Scheduler
  - SSAS 2019 VM

- **Domain Services**
  - Power BI Only Users
  - Azure Domain Services
  - Azure Monitor | Log Analytics | App Insights
  - Azure Storage Account

- **Gateway**
  - Power BI Embedded
  - Load Balancer

- **Clients**
  - S2S VPN
  - ConnetU

- **Users**
  - VPN Users (Internal Only)
  - Client Users (https)
  - Only Users

- Other components include:
  - Azure AD
  - Gateway
  - CompleteFTP
  - Power BI
  - Only Users
  - ConnetU
  - Azure Monitor
  - Log Analytics
  - App Insights