DATA SCIENCE SERVICES (DSS)

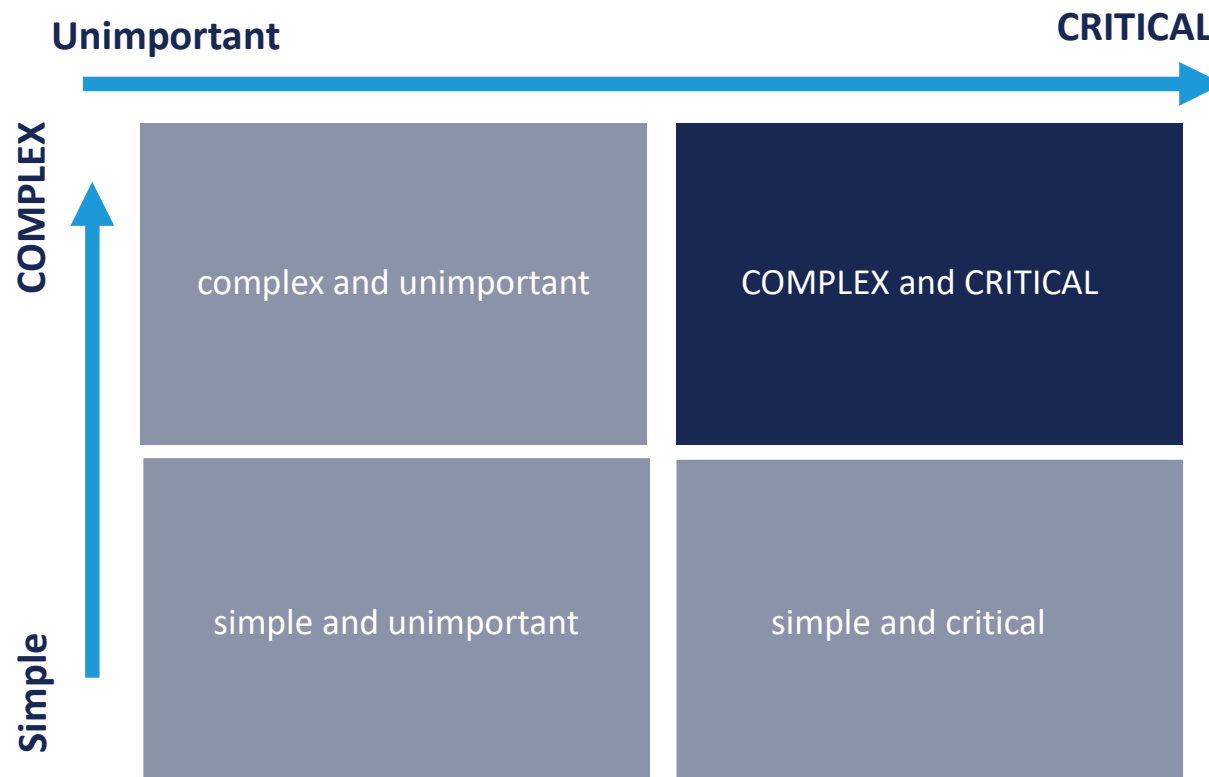**SEPTEMBER 2020**

—Mission

Use sophisticated data science models and methods to

SOLVE COMPLEX AND CRITICAL BUSINESS PROBLEMS

	Unimportant	**CRITICAL**
COMPLEX	complex and unimportant	COMPLEX and CRITICAL
Simple	simple and unimportant	simple and critical

— Valedor's Data Science Team

GEORGE DANNER

- George uses the very latest scientific techniques and methods to improve the performance of mid-size and large organizations through problem-solving, the optimization of existing practices, and advanced forecasting

- 37 years of experience in corporate strategy, specifically operational and financial analysis, across a wide variation of industries

- Author of the best-selling books, "Profit from Science" and "The Executive How-To Guide to Automation"

TRIPP LYBRAND

- Director of Services

- Strong desire to see teams work together to create results that are greater than any one person could produce on his own

ALAN SAVOY

- Technical Architect

- Responsible for system design, configurations, and finding solutions to complex client requirements

BROOKS LYBRAND

- Front-End Engineer

- Architects and develops user interfaces and data visualizations that help clients interact with models

DAVID TOTH

- Front-End Developer

- Designs client-facing applications and data visualizations that help companies record and view their data

EDWARD KRUEGER

- Data Scientist

- Develops, tests, and deploys statistical, machine learning, and simulation models

—Data Science Spectrum

EXCEL-BASED MODELING AND MANAGEMENT

Most companies make key decisions using Excel or other off-the-shelf products with severe limitations, including:

- Not interactive, allowing immediate experimentation (as in sliding a slider)
- Doesn't handle time dynamics (you can't "animate" a spreadsheet)
- Doesn't link to data sources in a high-fidelity manner
- Lack of 3rd party open source libraries to enhance Excel's functionality
- Error checking is poor
- Version control is not a native feature

DATA SCIENCE

Advances in modeling and analytical techniques combined with powerful and ever-growing tools (primarily software) allow forward-thinking companies to solve critical problems and dramatically upgrade their business performance with reasonable costs, short time frames, and resultant high project ROIs

BIG DATA, AI, AND BLOCKCHAIN

While there are certainly applications for these techniques in certain companies, these terms and appropriate uses are often misunderstood and misapplied. This can result in high-cost, low-impact projects. We understand the appropriate uses of these tools, and apply them selectively, and only after specific goals have been identified, and we are confident that the ROI will be measurable and meaningful for our clients.

— Where DSS Applies

Is your business model under pressure or in need of a transformation?

Applying data science to the architecture of a business model often yields surprising and actionable insights. Especially relevant for companies in sectors undergoing tectonic shifts.

Is a particular business process not as efficient as it could be?

Often, we find that relatively modest investments in automation and/or analytics can generate significant and immediate efficiencies/increases in profitability.

Is your current infrastructure in need of optimization?

Valedor's data sciences team has significant experience in optimizing physical assets. This often occurs without requiring significant additional capex and in some cases allows for the reduction of assets while maintaining the same output.

SAMPLE PROJECTS BY DEPARTMENT/TYPE

Finance: Stress testing; Forecasting; Cost Efficiency

Models: Visualization; Simulation

Operations: Optimization; Supply Chain & Logistics; Manufacturing & Production; Merger Integration

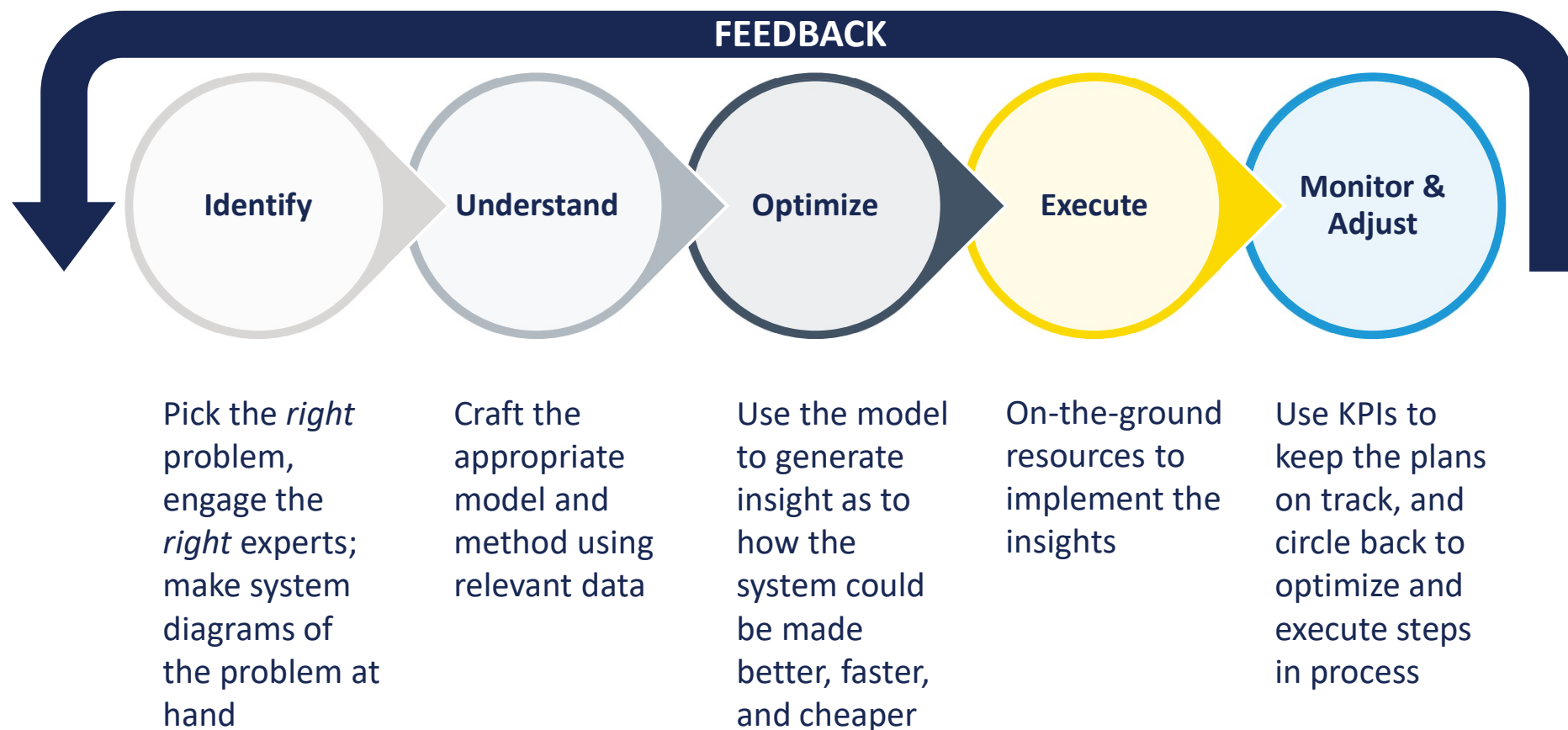**Automation**: Algorithms; Digital Twins; Machine Learning

Decision Analysis: Scenario Planning; Business Continuity; Optionality

Representative Project Matrix

	Business Model	Business Process	(Physical) Assets	Operations	Models	Automation	Finance	Decision Analysis
Airline Jet Fuel				●	●		●	
Biotech Merger		●	●	●	●			●
Specialty Chemicals				●	●	●		
Oil Field Services	●			●	●			
Well Sequencing				●	●			
Marine Logistics/Chemicals	●		●	●	●	●	●	
Turn-Around Simulation		●	●	●	●		●	
Healthcare Operations	●	●		●	●		●	●
Trading Model		●			●		●	●
Commercial Real Estate			●		●		●	
Port Traffic Analysis			●	●	●		●	●

— Process

FEEDBACK

Identify	Understand	Optimize	Execute	Monitor & Adjust
Pick the *right* problem, engage the *right* experts; make system diagrams of the problem at hand	Craft the appropriate model and method using relevant data	Use the model to generate insight as to how the system could be made better, faster, and cheaper	On-the-ground resources to implement the insights	Use KPIs to keep the plans on track, and circle back to optimize and execute steps in process

Key Tools and Features

Diagrammatic representations of systems, processes, and assets to provide clarity on the underlying problem

Simulation models (digital twins) of real operations to get a "day in the life" understanding of performance under a variety of conditions

Visualization to see the impact of business processes and gain buy-in across organizations

Data science to gain understanding of important patterns in the data

Automation to reduce the labor content in every critical function

Third party and open source software tools to provide a platform for sophisticated computing

Cloud platforms to house the models and data in a convenient and secure manner

Integration with corporate data sources to keep the models "live" long after the developers leave the scene

Deliverables

1 Full set of diagrams, documents, and data used to construct the models

2 The models themselves, located in a secure cloud or on premises

3 Experts available to help manage models throughout the engagement

Case Study 1: Plant Optimization

A company in the specialty chemicals business acquired a 70-year-old facility for making a base chemical. Operations and finance were completely disconnected, leaving money on the table for the owner.

Problem	Manual scheduling of the facility's many processing units resulted in poor market timing of production against market swings up and down.

Action

- Created a diagram illustrating the systemic vulnerabilities of the operations
- Zeroed in on optimal scheduling as an antidote to poor market performance
- Designed and created the model with substantial involvement of the company SMEs
- Developed a list of strategic uses of the model beyond scheduling to involve capital expenditures, contract analysis, and logistics changes

Outcomes

- Clearer picture of plant economics under a wide variety of conditions
- Reduced product volume sold into unfavorable spot market pricing
- Optimized schedule, streamlining throughput of the plant

Case Study 2: Marine Logistics

A major refiner was planning the addition of a large chemical facility within the same physical complex.

Problem	The additional chemical production facility will likely put greater stresses on the existing refinery's marine logistics system that brings inbound materials and ships finished products.

Action

- Mapped the current logistics system and the protocol for moving shipments into and out of the attached port facility
- Overlaid the demands from the new chemical facility to determine the capacity gaps
- Conducted deep analysis of the frequency of supply disruption when both facilities are operating in parallel
- Created a simulation model of the logistics system, both the current configuration and also possible future configurations
- Engaged in scenario planning with additional dock space and altered vessel protocols

Outcomes

- Insight into precise capital needs to support new chemical facility
- Moved from inefficient vessel handling to a more efficient, safer model
- Stress testing of company strategies against operations

— How to Engage with Valedor Data Sciences

If you are unsure of the precise nature of the problem(s) to tackle…	**Start with a business diagram.** Let's jointly create this and see where the bottlenecks, problems, and opportunities exist to re-construct or tweak dials.
If you have a good handle on a range problems to be solved…	**Give us your top 2 or 3 pain points** to distill into a solid problem statement.
If you have many simultaneous problems to solve at once…	**Consider our services "menu."** Review Valedor's work history and case studies to select an area of focus or specific project type.
If you have a well-known, glaring problem…	Let's **craft a project plan** and start right away.

— Engagement Structure and Pricing

A typical **small** project is 6-8 weeks in length and involves a solution to a focused problem in a one-off manner.

A **medium** project uses visualization and scenario planning and provides a platform for the users to conduct a myriad of what-if experiments. The model is treated as an institutional asset that is preserved for years. The typical duration for these projects is 12-14 weeks.

A **large** project has enterprise-wide implications and forms the basis of a long range corporate strategy. Large models can involve the integration of many sub-models and large data sets. These projects can last 6 months or more.

The cost of these projects can vary greatly. Valedor Partners is open to alternative pricing models that involve a pay-for-performance arrangement.

Most all projects regardless of size begin with an initial 3-4 week design effort involving a 2-3 day onsite whiteboarding exercise. Valedor charges fees between $15,000 and $20,000 for these initial steps.

— Frequently Asked Questions

1) **How soon can you start after I commit?**
   This depends on our team's availability, but generally speaking, we can begin within a week of your commitment date.

2) **How much time do you need from my staff?**
   We will require some amount of time for "upfront" fact-finding in the facilitated sessions. Thereafter, we leave your busy executives alone for the most part, save for a few follow-up questions.

3) **Why shouldn't I just do this internally?**
   Your people are likely too busy, unprepared, and too steeped in the details of the business itself to provide a meaningful outward perspective for an emergency response. We channel the knowledge and experience we have gained working with other clients into our plan and work alongside your leadership and functional teams to deliver results more efficiently.

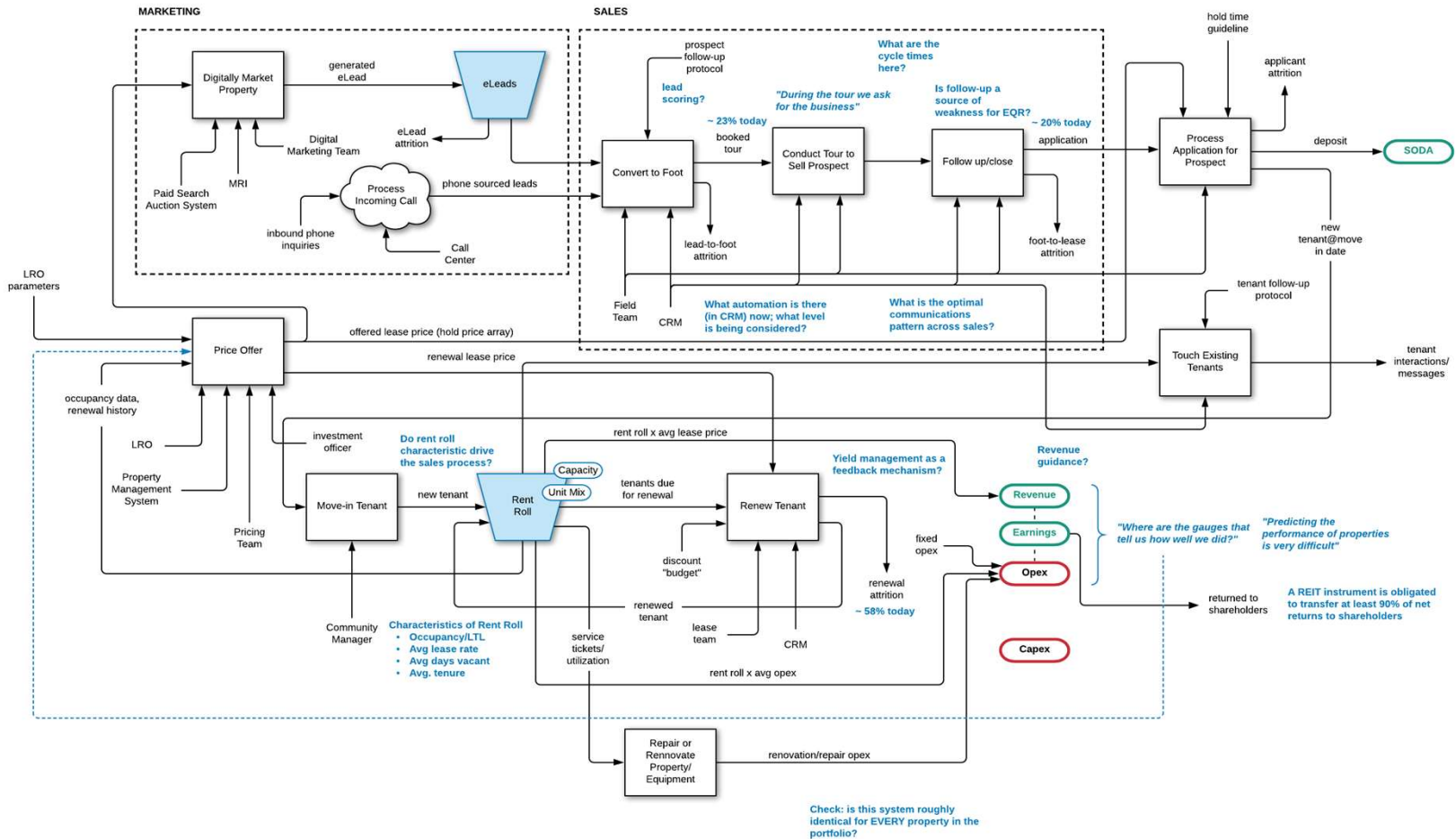4) **X, Y, or Z firm is claiming to do this already. Why should I hire you?**
   Valedor is a small, highly experienced team that acts more like Seal Team 6 than Patton's 3rd Army. We have successfully managed through many different challenges as business owners, and our analytical orientation means that you get data and facts, not opinions.

5) **How do I know you aren't just going to extend this into a long-term project?**
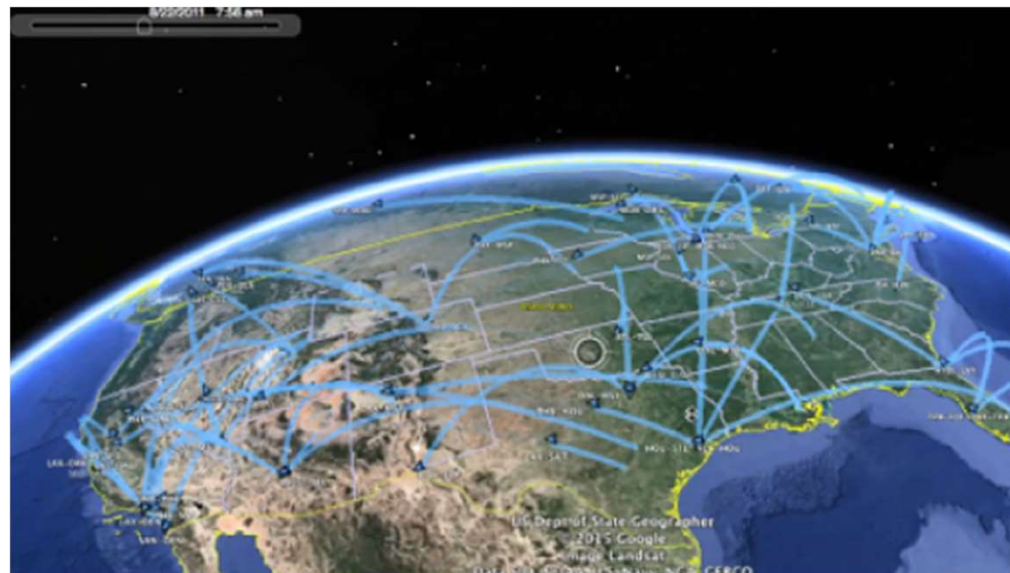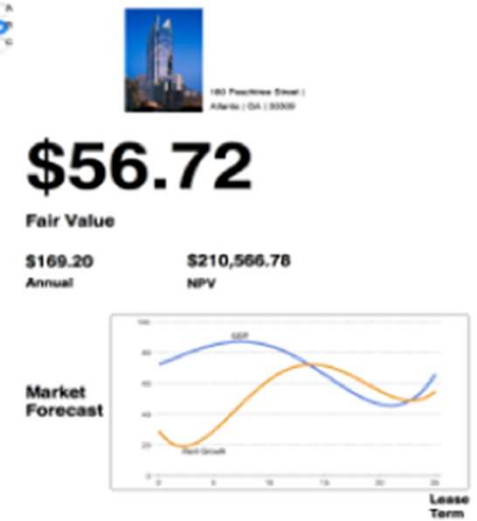   We appreciate this concern, so we scope projects with a firm beginning and end.
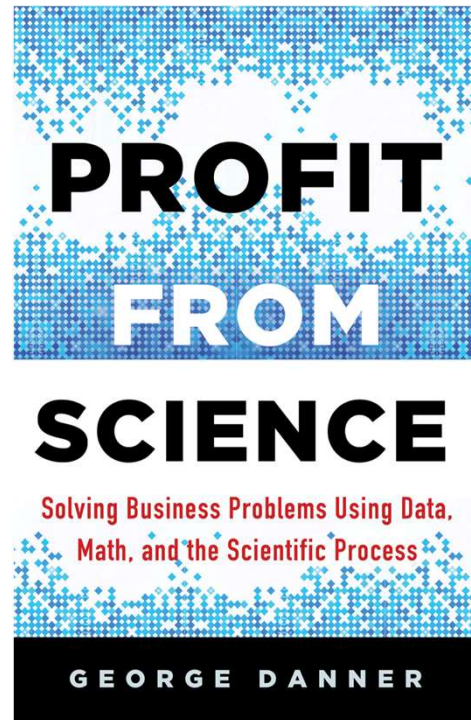
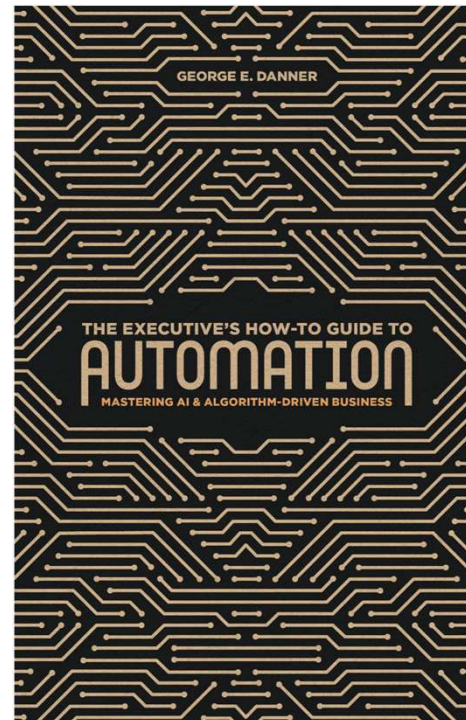# — Appendix B. - Visualization

— Appendix C. - Clients

- Motiva
- The Laura and John Arnold Foundation
- TD Ameritrade
- Quintiles
- CrownQuest Petroleum
- The Government of the United Kingdom
- Western Power Distribution
- NationalGrid
- Ascend Performance Materials BP
- Forja de Monterrey (div. of Quimmco)
- Transocean
- 2H Offshore
- Schlumberger
- Equity Residential
- Star Mountain Capital
- Manpower

- FMC Technologies
- Oxy
- Rackspace
- TIAA CREF
- The National Health Service (UK)
- AstraZeneca
- Xactly, Inc.
- Vopak
- Enterprise Products
- Devon
- Just Energy
- Port of Houston
- US Autologistics
- The Government of Canada
- Calumet Specialty Products
- US Air Force

— Appendix D. - Our Books

2015

2018

—Contact Us

Advisory

Gardner Dudley
gardner@valedorpartners.com
(m) 713-256-7473

Barbara Palmquist
barbara@valedorpartners.com
(m) 713-304-1338

Data Science

George Danner
george@valedorpartners.com
(m) 281-830-3333

Private Equity

Shawn Patterson
shawnp@valedorpartners.com
(m) 713-857-5593

Venture

Dag Syrrist
dag@valedorpartners.com
(m) 650-222-8169

General Inquiries

David Bloch
david@valedorpartners.com
(m) 917-628-7894

Collins Kuper
collins@valedorpartners.com
(m) 210-865-8282

Jeremy Radcliffe
jr@valedorpartners.com
(m) 713-851-1729

Logan Walters
logan@valedorpartners.com
(m) 832-367-3077

www.valedorpartners.com

4265 San Felipe, Suite 970
Houston, Texas 77027

— Disclosure:

This presentation is being furnished on a confidential basis to a limited number of parties for informational and discussion purposes only and does not constitute an offer to sell or a solicitation to purchase any security. The information set forth herein does not purport to be complete and is subject to change. This presentation does not constitute an offer or solicitation in any state or other jurisdiction to subscribe for or purchase any securities. Recipients of this presentation agree that Valedor, its managers, partners, agents, affiliates, and assigns shall have no liability for any misstatement or omission of fact or any opinion expressed herein.

The information contained herein must be treated in a confidential manner and may not be reproduced, used, or disclosed, in whole or in part, without the prior written consent of Valedor, is not intended to be relied upon as the basis for a decision, and is not, and should not be assumed to be, complete.

Valedor, its managers, partners, agents, affiliates, and assigns make no representations or warranties whatsoever, nor are any such representations or warranties to be implied, concerning the accuracy, completeness, or correctness of the information supplied hereunder.

Calculations and economic illustrations presented herein are based on various assumptions, including forward-looking expectations, but Valedor, its managers, partners, agents, affiliates, and assigns do not make any representations, warranties, or guarantees as to the future financial performance or the economic returns that any recipient can expect, including when such forward-looking statements are made. As stated above, this document is not intended to be relied on as the basis for a decision.

In considering any performance data herein, each recipient should bear in mind that past performance may not be indicative of future results, and there can be no assurance that actual results will reflect the valuations assumed as actual results will depend, inter alia, on future operating results, the value of the assets in issue, market conditions, any related transaction costs, and the timing and manner of realized results, all of which may differ from the assumptions herein. Results herein may be subject to subsequent adjustment. Except where otherwise indicated, the information herein is based on matters as they exist as of the date of preparation of the information and the delivery of this presentation shall not create an implication that the information contained herein is correct as of any later date. Valedor, its managers, partners, agents, affiliates, and assigns undertake no obligation to update or revise any forward-looking statement, whether as a result of new information, future events, or otherwise. Due to various risks and uncertainties, actual events or results or actual performance may differ materially from those reflected or contemplated in such forward-looking statements. Any information in this presentation about prior activity is provided solely to illustrate experience. Prospective results included in this presentation may not take into account fees, costs, or other charges. Each recipient should consult its own attorney, business advisor, investment advisor, or tax advisor as to such matters concerning the information contained herein.