

ENGINEUITY TUTORIAL



The Challenge



The Challenge

ENGINUITY is a unique and inspirational learning experience, giving participants, grouped into teams, the opportunity to compete against each other to see

WHO CAN RUN THE MOST SUCCESSFUL GLOBAL CONSTRUCTION BUSINESS



Each competing team is thrust into the same simulated 'virtual world', and are given the challenge of running their own Global Construction Business for a number of simulated years, where success is measured by key performance indicators published on a league table.

It will not be easy, with stiff competition for work, a dynamic jobs market, and external world events that can impact upon the business just like the real world.

Developing a successful business strategy is essential, as is being able to work effectively as a team, make key decisions, and solve problems as they arise.

Ultimately there can be only one winner, but everyone also wins if they can grow a successful business.



The Challenge



To run a successful business in these uncertain and challenging times, it is more important than ever that team members, often working from remote locations, have the communication and collaborative skills to form an effective team able to make key business decisions.

The **ENGINUITY Competition** develops and enhances these key people skills in a unique business management challenge that pits participating teams against their colleagues and peers from across the globe.



The Challenge

A UNIQUE MANAGEMENT CHALLENGE

WORLD EVENTS INCORPORATED



Political turmoil, higher interest rates and cost of living crisis in the UK

Affects of the Russia-Ukraine war on energy supplies for the world economy

Construction work for major events, such as the FIFA 2026 World Cup in North America

Continued civil unrest in the Middle East

Global shortage of skilled labour

Climatic affects, such as extreme hot weather, flooding etc

Using a sophisticated computer simulation, competing teams are given the task of managing a fledgling UK-based **GLOBAL CONSTRUCTION BUSINESS** from 2024 onwards.

Operating in a dynamic global economy based upon the 'real world', there are **WORLD EVENTS**, economic, political and environmental, that can impact upon the business, and the **ENGINEUNITY NEWS NETWORK (ENN)** provides the latest world news headlines.

There are jobs, clients, rival competitors, risks and people worldwide, and the **success or failure of the business** depends entirely on the decisions each team makes in a number of key business areas.



The Challenge

Information is critical for re-evaluating business strategy, and world news, based upon current and future world events, is available from **ENN**, the **ENGINEUITY NEWS NETWORK**.

Enginuity News Network
Period 5

ENN WORLD NEWS

2023 (Q1)
Jan - Mar

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ECONOMIC

After inflation in the UK climbed sharply during 2022, its highest rate for almost a decade, driven largely by rising fuel and energy prices as a result of the Russia-Ukraine war, and global supply issues, pressure is continuing to mount on the Bank of England to raise its interest rates even further in the near future.



CONSTRUCTION

FIFA North America 2026, the publicly funded body established in 2021 to oversee the delivery of the 23rd FIFA World Cup, are about to announce plans for the construction of new training facilities in Dallas, Texas in the United States.

The design work has already been completed for the 11m contract using a BIM model, and the job is expected to last 9 months, and suitable contractors will be invited to bid for the work in the second quarter of 2023.



ENVIRONMENTAL

The construction industry is the top global consumer of raw materials. The industry generates between 25 to 40% of the world's carbon emissions. This volume of natural resource utilisation is not sustainable and could compromise the environment for the sake of growth.

Climate change and water management are two environmental issues that pose a growing challenge to the construction industry. Achieving targets for global carbon dioxide emissions reduction will be a major challenge for the construction energy in rapidly developing countries like India and China.



CONSTRUCTION

Rumours in press reports suggest that Iraq based Sharami International, in their quest to extend their operations globally, are very interested in bidding for the 18m offshore wind farm development on the outskirts of Vandalia, Ohio in thr United States for First Wind USA, and they are expected to be very competitive on price.



POLITICAL

Continued civil unrest across Syria has raised concerns about delays to construction projects in the country with a shortage of materials, and labour.



CONSTRUCTION

A spokesperson for the contractor working on the construction of a modern three storey call centre in Andover in the United Kingdom for Madison Bank has raised concerns that the job, now in its third quarter of a planned year long build, is facing imminent delays due to ongoing personnel issues believed to be related to overtime payments.

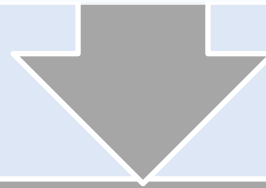


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The new management team will be making their first decisions for period 5 (2024 Quarter 1), and then for subsequent periods (6,7 etc) involving **further timeframes**.

Early Years

The **competition for jobs comes from a number of simulated companies**. Each one has their own unique profile and bidding history, and a careful assessment of the opposition is required to formulate an effective procurement strategy.



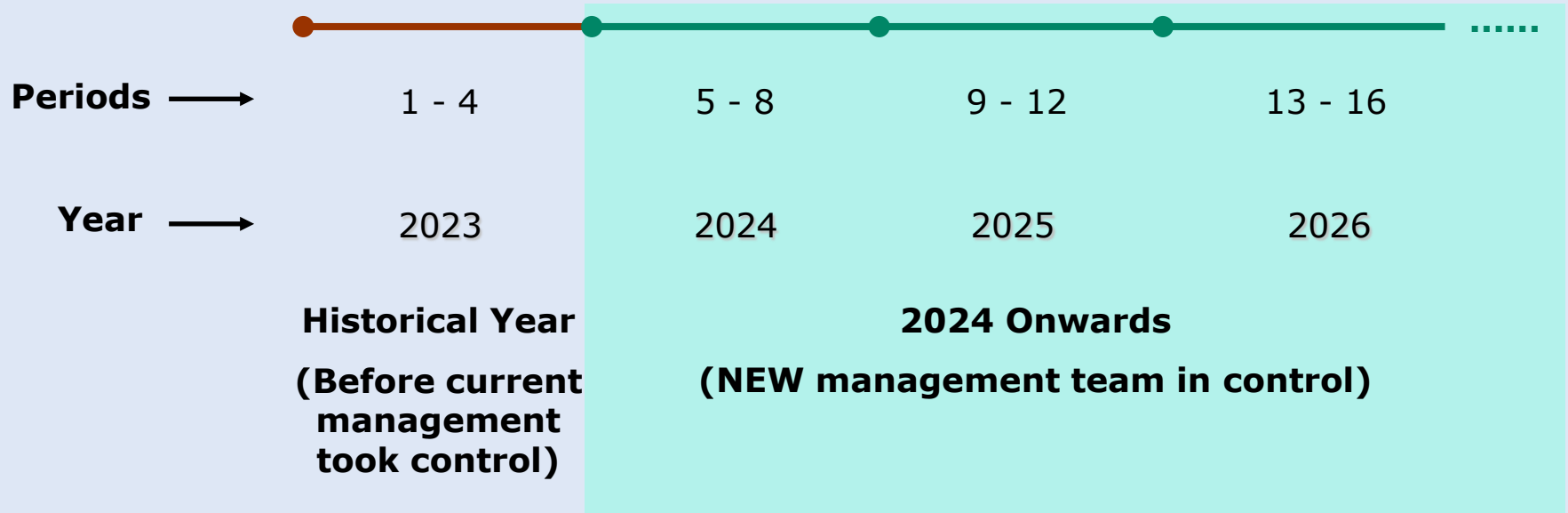
Later Years

During the later years the **teams compete against each other for work**. This creates an even more uncertain and pressurized environment in which the skills and team dynamics formed in the early years are really put to the test.



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Decisions are made for a **period**, representing 3 months, or a quarter, in the real world.





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IDENTIFYING NEW WORK

The company will not grow without new work.

The Marketing Department identify new jobs that the company can bid for in different :-

- Locations (UK/Overseas)
- Sectors
 - Industrial
 - Building & Commercial
 - Transport
 - Energy
 - Water & Sewage



WINNING NEW WORK

The Procurement Team bid for jobs identified by the Marketing Department, which involves :-

- Assessing the bidding strategies of rival competitors
- Identifying risks and costs, and setting margins to bid competitively



PROGRESSING JOBS

Jobs secured need to be successfully completed by the Construction Team.

This involves :-

- Allocating appropriate resources to progress jobs, such as project managers and labour
- Effective risk management
- Overcoming problems that occur during the construction, such as job delays



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SHAREHOLDERS

The company is owned by shareholders who expect a return on their investment in the form of a dividend.



DIVERSIFYING

To reduce costs in the core business (build and risk costs), the management can invest in other companies.



INFRASTRUCTURE

To achieve enhanced growth the company's infrastructure (capital base), in the form of fixed assets such as plant, can be expanded.



OVERHEADS

Staffing the support services sufficiently will enable to company's strategy for identifying and progressing work to be carried out.

The support services departments are :-

- Marketing
- Head Office
- QHSE
- Measurement



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The performance of each team each round is measured by **10 Key Performance Indicators**.

End of period	Status	Year/qtr	Turnover	Gross profit to Turnover	Operating Profit to Turnover	Company Value	Capital Employed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction	Total
4	History	2022 (Q4)	40	170	120	170	130	80	70	100	70	50	1,000
5	Early Years	2023 (Q1)	59	203	199	190	161	114	115	160	94	76	1,371
6	Early Years	2023 (Q2)	68	202	203	197	175	119	110	154	94	90	1,412
7	Early Years	2023 (Q3)	77	220	235	215	187	124	124	165	115	111	1,573
8	Early Years	2023 (Q4)	85	225	247	232	200	139	142	175	131	141	1,717

During a competition, each team's performance relative to each other is displayed on a **league table** published at the end of each round, which only shows the overall KPI score of each team.



Enginuity 2023 Competition

TEAM LEAGUE TABLE

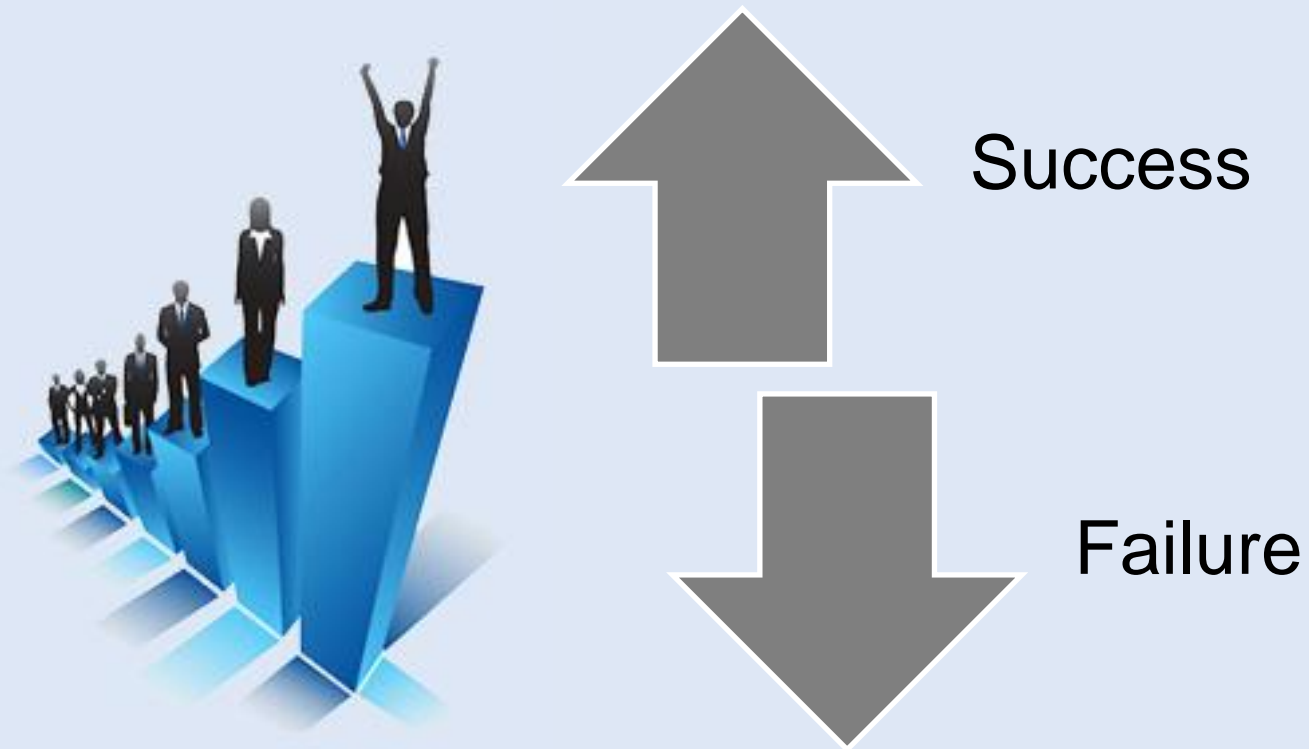
At the end of period 8 (Early Years)

Position	Name	Sponsor	Location	Total KPI	PERIOD MOVEMENT		
					Improvement	From	Change
1	Hammer Time Co	Arcadis	Australia	1,717	9 %	2	1
2	Whatever It Takes	Stantec	Italy	1,716	11 %	6	4
3	Enginuity State of Mind	Jacobs	US	1,691	8 %	3	0
4	Glasgow ES&T	Jacobs	UK	1,688	10 %	7	3
5	briJ	Jacobs	India, UK	1,673	12 %	19	14
6	Stantgether	Stantec	Australia	1,657	13 %	32	26
7	Pixies	Stantec	India	1,651	7 %	8	1
8	Yaycobs	Jacobs	Ireland/UK	1,646	7 %	9	1
9	StanWreckers	Stantec	UK	1,633	12 %	37	28
10	Jacobites	Jacobs	UK	1,631	19 %	67	57
11	Stanchievers	Stantec	United States	1,623	4 %	5	-6
12	The Decision Box	Cundall	UK	1,604	5 %	10	-2
13	Minimum STANdards	Stantec	Australia	1,599	1 %	1	-12
14	Top Gun	Jacobs	Switzerland/UK	1,586	5 %	14	0
15	Barely Managing Globex Corp	Arcadis	Australia	1,582	11 %	46	31
16	WSP's Dream Team	WSP Australia	Australia	1,577	8 %	38	22
17	Stantec upon Tyne	Stantec	UK	1,572	16 %	75	58
18	Shark Tank	Jacobs	Poland/South Africa/India	1,571	6 %	22	4
19	HatchCon	Hatch	South Africa	1,565	7 %	34	15
20	SCART	AECOM	UK	1,563	4 %	17	-3



The Challenge

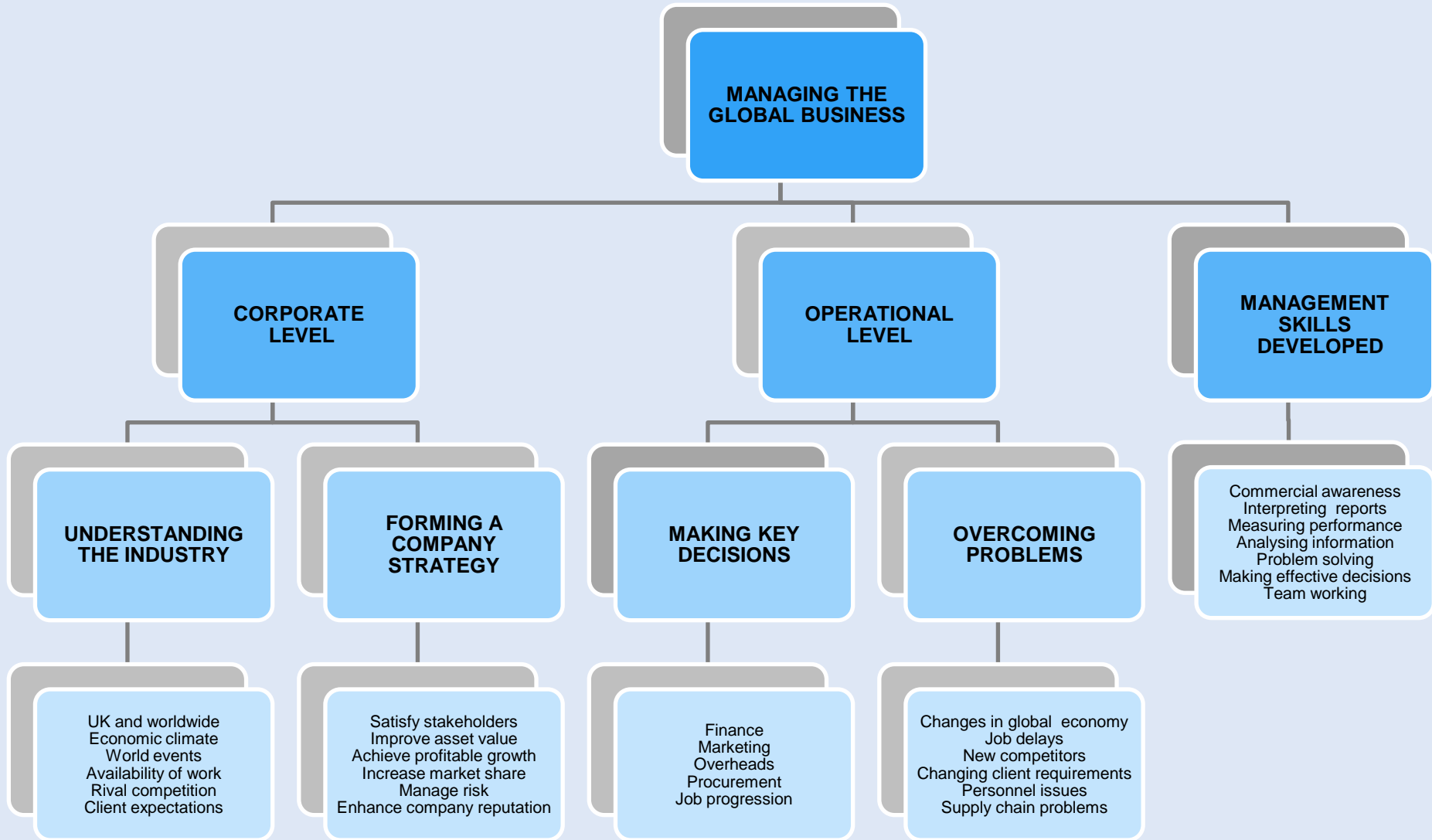
The fate of the company, lies in the hands of the new management team.





The Challenge

ENGINUITY exposes participants to the key aspects of managing a global construction business.



The Challenge

ENGINUITY 2024



Participants' Module

Select Company Database

ENGINUITY 2024



Tutorial

Practice
Makes
Perfect

SOFTWARE

The **Participants' Module** is the software used by participants to take part in a competition, and enables :-

- **Decisions** to be made for each period
- **Company performance** to be measured and assessed
- The **global economic environment** to be analysed

HELP TOOLS

A **set of help tools** are available to learn how to play Enginuity :-

- A detailed slideshow tutorial
- An on-line learning zone

LEARNING HOW TO PLAY

the best way to learn about Enginuity is to have a go, and there is the opportunity to practice making decisions and analysing the results, known as **trailing**, prior to the start of a competition.