Data & Analytics for the Hospitality Sector

How aggregating data within a single platform can help you make smarter decisions for your business.

Mike Shipley
Analytics and Insights Solutions Director
Fourth Ltd.

Executive summary

The concept of harnessing and interpreting the large volume of data that a business generates to drive better decision making has been around for some 20 years.

The hospitality sector, however, has been relatively slow or otherwise unable to take advantage. While some chains with a sophisticated IT infrastructure are seeing the rewards, others are only now beginning to dip their toes in these unfamiliar waters.

With the convergence of analytics software, cloud computing and mobile devices, the benefits of "big data" are more accessible now to just about everyone in the business. But it's not enough to just have the data. With so much information available, it needs to be aggregated smartly and concisely. Otherwise, many operators will end up spending all their time collating and combining data to create KPI reports instead of uncovering trends and acting on valuable insights. Today, adding an analytics solution to your existing IT systems can be cost-effective and give decision-makers across the business the evidence and insight they need to reduce costs, improve efficiency, enhance customer satisfaction and boost profits.
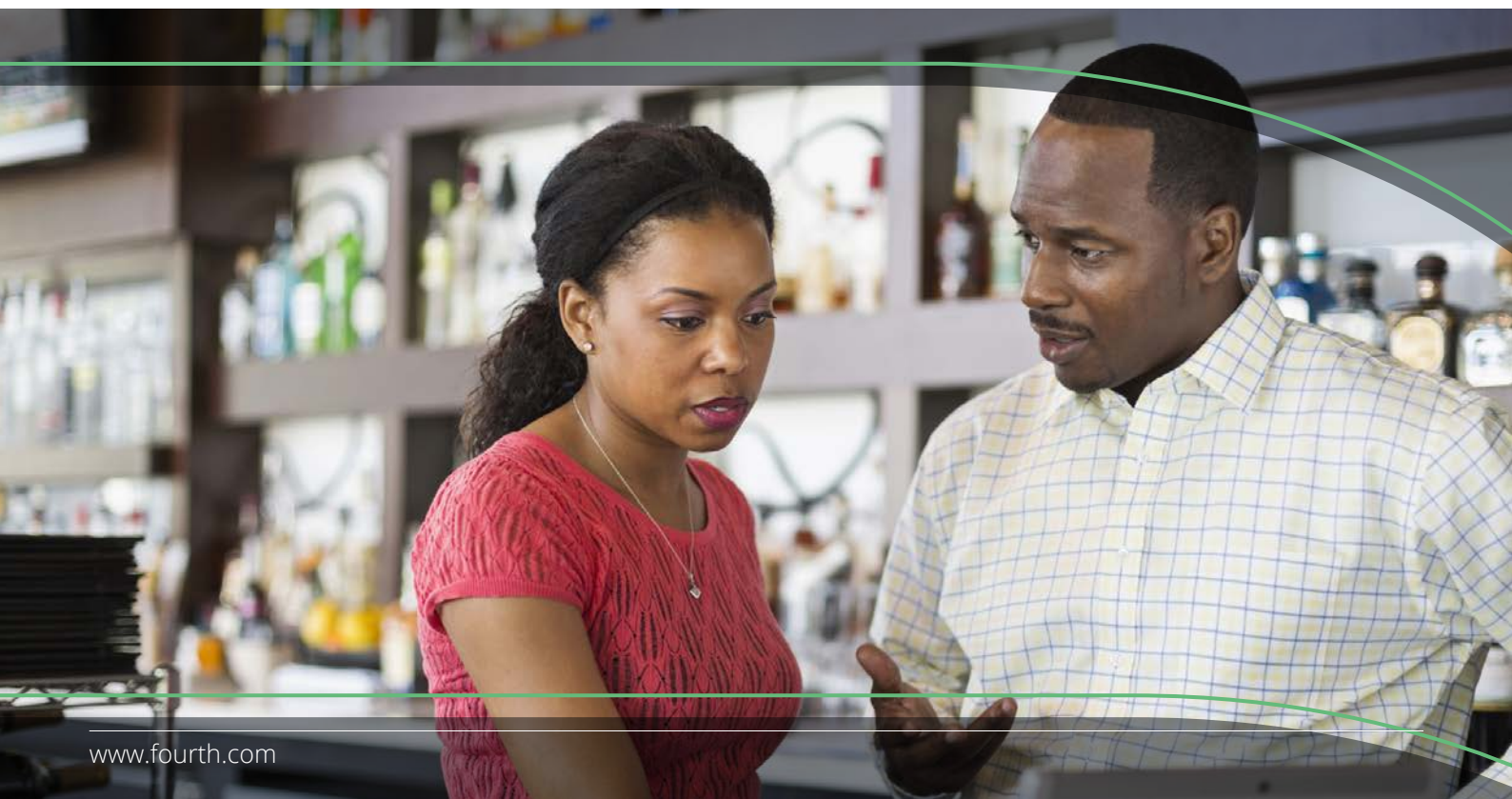
Introduction

These are uncertain times for the hospitality industry, as operators confront unprecedented cost pressures. From new minimum wage laws and rising labour costs, to fluctuations in supplier pricing, to rent increases, there are many external factors that may feel outside of your control. In order to get ahead and to stay profitable, the key is to fully understand your business so you can make better, more informed decisions. This begins with understanding the numbers.

Of course, success in hospitality has always depended on quantitative measurement. How much did we sell yesterday? Last month? This week last year? Which branch is doing best? What's our gross profit (GP) and which way is it moving? What's happening to our staffing costs and how quickly are they rising? And, based on years of experience, most operators have had a reasonable idea of the overall picture.

But a "reasonable idea" isn't enough. With increasingly razor-thin margins, businesses can't rely on "guestimates." The savviest operators understand the power of seeing the full picture. By knowing exactly what's going on, they can make informed decisions, adjust course where necessary, and better predict the future. By digging deep into their business insights and their customers' behaviour, they are equipped with what they need to adjust pricing, adapt menus, review purchases, change or better manage suppliers, improve employee training, set stronger schedules, and so on. Leveraging data is the key to success.

Beyond "Big Data" – how to best use the mountains of data at your fingertips

Drowning in data can be just as bad as not having enough. Many teams end up operating in silos, working off whatever data feels most relevant for them. For the hospitality industry especially, being able to tap into a wide variety of data sources – and, critically, integrate them – yields significant and almost immediate benefits. After all, it is impossible to see the whole picture when only looking at a handful of puzzle pieces. Since manually correlating this data is both time-consuming and prohibitively expensive, the right tool is critical for success (and sanity).
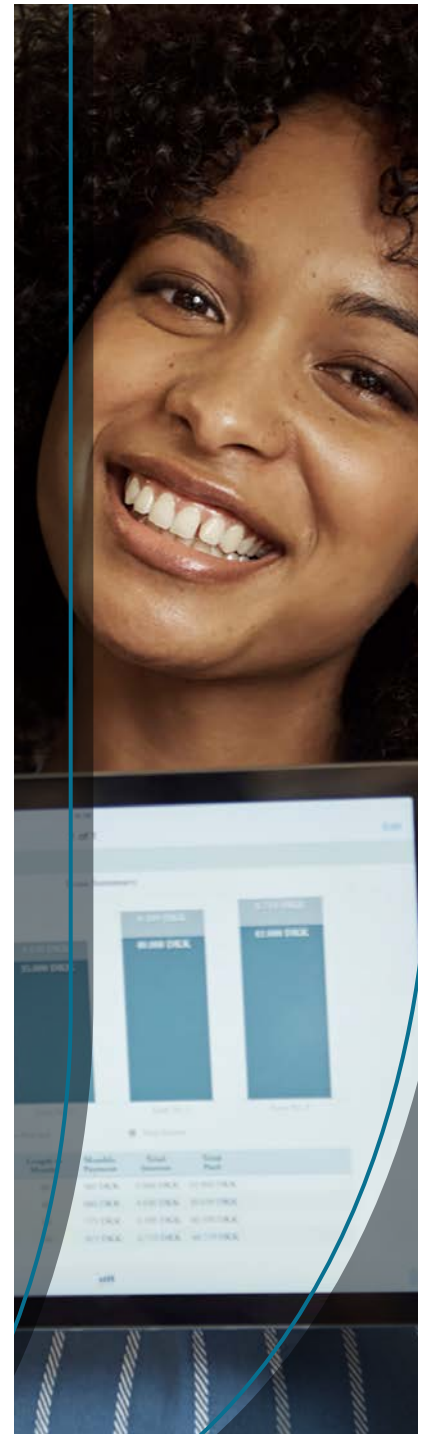
By using technology to quickly collate, analyse and understand huge amounts of data from different sources, you can transform the customer experience and operate more efficiently. What kind of data are we talking about? Just about anything a hospitality business generates, including, but not limited to:

- POS
- Property Management Systems (PMS)
- Kitchen Management Systems (KMS)
- Reservations
- Labour and payroll
- Staff scheduling
- Inventory
- Vendor performance
- Ingredient price fluctuations
- Menu item popularity and profitability
- Employee engagement levels
- Purchasing and invoicing
- Health and safety
- Internal audit

- Fixed costs/rents
- Industry trends
- Forecasting accuracy
- Weather feed
- National and local event information
- Competitor analysis
- Guest feedback
- Customer sentiment
- TripAdvisor
- Facebook
- Twitter
- Employee feedback and pulse surveys
- Campaign analysis

The right analytics software should seamlessly collate this information, to give you a holistic view of the business. For example, with POS integration, you'll be able to see not only what was sold but when, to whom and by whom, and what else was ordered. Combining data gives you a much clearer understanding of your underlying performance and the reasons behind it. In turn, this gives you the power to make informed changes. You can adjust almost anything on a company-wide or individual site basis. For example, you can map sales against employee costs, margins, customer experience ratings and more. You can examine the difference between actual and theoretical GP, identifying individual site performance. You can assess the influence of specific area managers, team members, and even ingredient pricing.

Most importantly, you can transform understanding into innovation. Using this data correctly can help you make the shift from analysing the past to forecasting the future. Understanding what you are going to sell and when (and who is needed to prepare or serve it) will allow you to better manage your inventory and schedule appropriately. This way, you'll always have the right people on the shift at the right time to deliver the optimal guest experience.
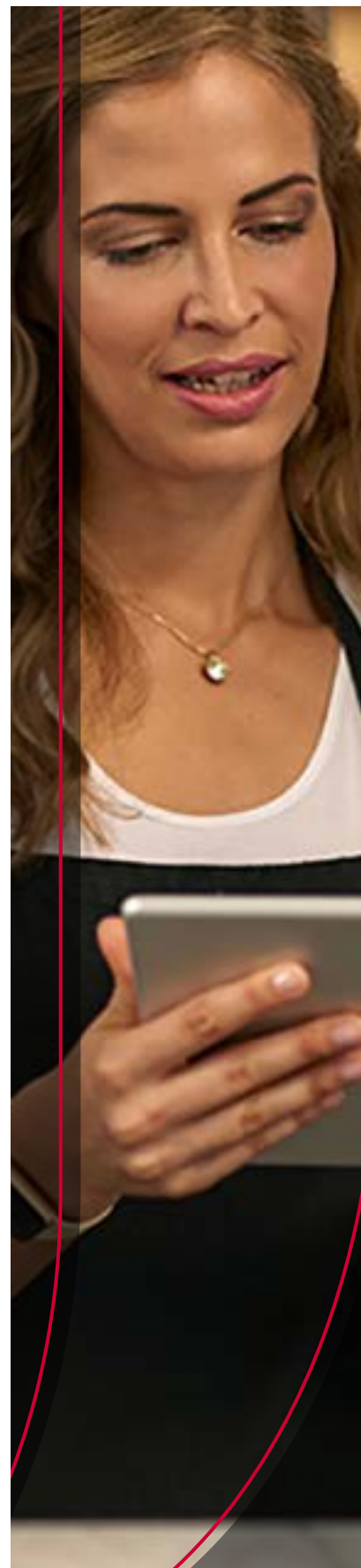
Information in the right hands

The new generation of data analytics is immensely powerful. It's a practical tool that brings relevant information and actionable insight
to the whole business, from senior executives to central services to
site managers.

By combining the speed and capacity of cloud computing with simple interfaces and interactive dashboards, it provides near-instant answers to the questions that matter: "Who's our strongest supplier? Who are our best-performing employees? What's our most profitable menu item? At what time of day? What do we need to adjust to reduce waste and increase profitability?" and so on.

By presenting the answers on mobile devices, it also frees managers from the back office. And because machine learning can automate approximately 90% of the everyday decisions a manager has to
make – "Do we need to order more tomatoes? Does our schedule for tomorrow match what we think we'll sell?" – your teams will have more time and energy to devote to the issues that only a human being can determine. It means your best managers spend less time at a desk and more time on the floor, where they can really make a difference.

Getting started

So how do you start gleaning insights from these heaps of data? How do you implement the infrastructure you need without getting bogged down in a huge IT project? We all know that many initiatives like this are poorly planned, take forever to complete and end up costing a fortune.

In fact, this typically happens when companies try to create their own solution without fully understanding the work that's needed. They often don't appreciate what front-end dashboards and content they will need, nor which specific data sources and information they should analyse. The most common result is that the system can't display all that potentially invaluable data, and the users can't understand or use it. This leads to operations staff losing faith and the project failing. Fortunately, there's a better way.
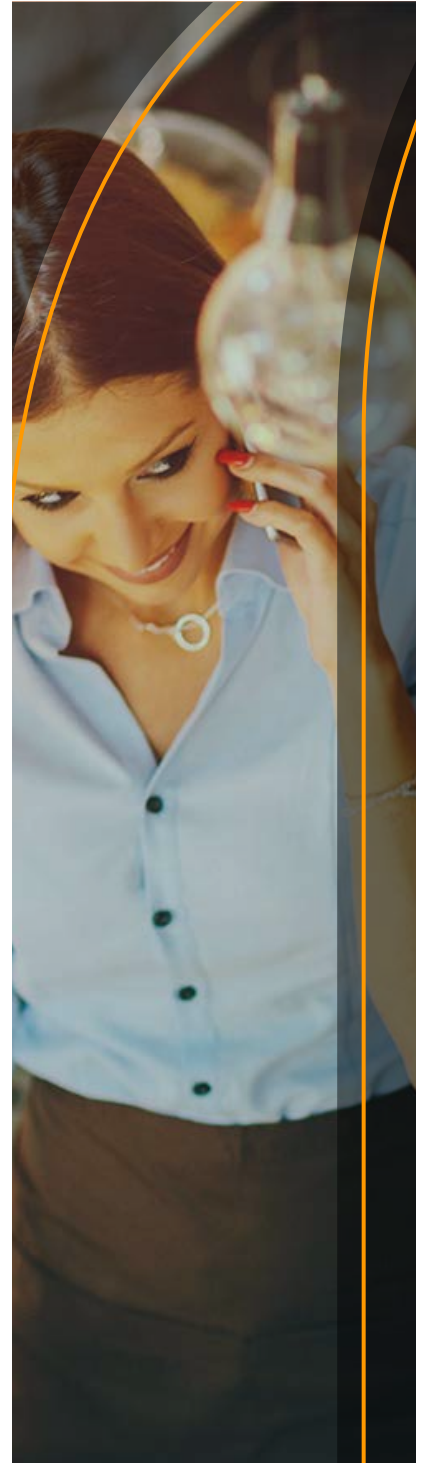
How Fourth can help you

Our Fourth Analytics solution collects, processes, analyses and interprets huge amounts of varied data, so you and your staff can understand the past, better predict the future, and take the right actions right away. We help provide a holistic view of your performance and give you the tools you need to make improvements. Fourth Analytics provides data and insight from our fully integrated Workforce Management and Purchase-to-Pay and Inventory solutions, and brings in a host of other integrated systems, while our library of APIs allows any technology partner to easily share data through the Fourth platform.

Our hospitality experts have built Fourth Analytics over the course of 15 years and have continually fine-tuned it so it's as relevant and engaging as possible. And as Software as a Service (SaaS), it's available out of the box and can start driving ROI and improving business performance almost instantly.

It's easy to set up (typically within a few weeks) and its intuitive design means we can train your staff to use it in just a couple of hours. Our support specialists are available around the clock; you won't need to employ specialist IT staff or business analysts. Nor will you have to invest in new hardware, since the web-based interface will work on any connected device. Best of all, it won't break the bank.

You can find more information on Fourth Analytics along with some examples of the type of dashboards and reports available, on page 6.

What's next?

Harnessing the power of your data is the first step in an exciting new journey. Soon, the distinction between transactional and analytical data will fade. The smartest operators will run agile businesses that make informed decisions based on a holistic, 360-view, allowing them to optimize their back-office operations in real time.

Efficiency will win. Activity that used to be managed on daily or weekly basis will be done by the hour or even more frequently. Site managers will be able to adjust variables just as easily as head office staff can. Pricing, offers, inventory, staffing, kitchen schedules and more will become powerful tools that are quick and easy to deploy across the business or in individual circumstances.

Above all, it will have a huge positive impact on the bottom line, while helping maximise top-line potential. For those who seize this opportunity, the rewards could be immense.
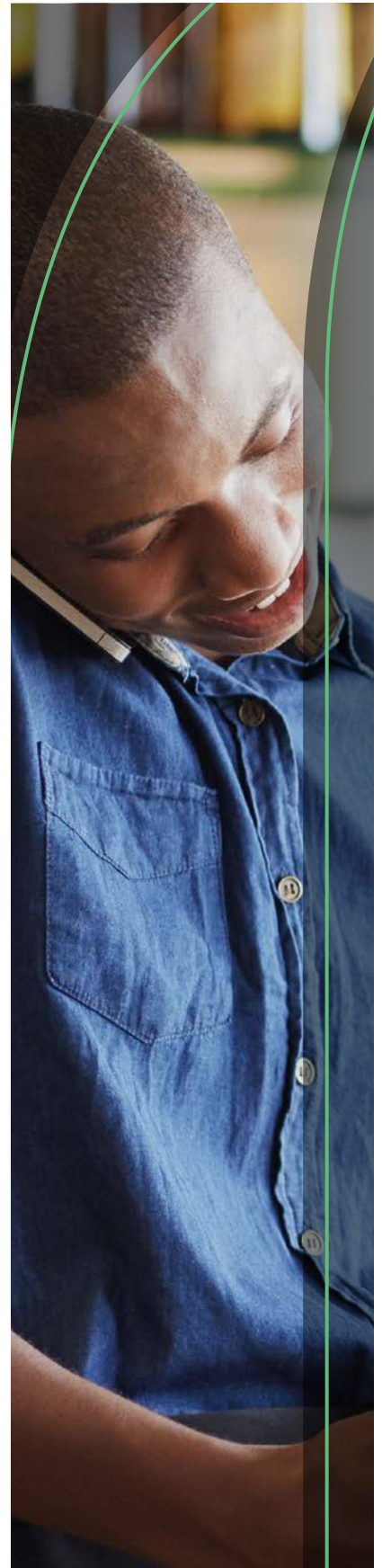
More about Fourth Analytics

Fourth Analytics offers a fully integrated analytics platform, which allows permission-based access anywhere and on any device. By bringing everything together in one place, laborious weekly reporting is a thing of the past. Flash P&Ls are now sent automatically to all the relevant team members, who can then take immediate action.

All data feeds are configured to quickly integrate and provide clear, visual dashboards, using vast amounts of internal and external data, easily designed to customers' unique requirements.

Critically, Fourth Analytics provides substantial additional reporting capabilities. Its external data gateway manages the integration of POS data down to full bill-level detail from any POS vendor. Fourth Analytics also manages the integration of other external data sources, such as TripAdvisor, social media, guest feedback etc. so all the information is in one place, and users can uncover previously hidden insights and drive better decision-making. By breaking down silos and pulling data from a host of different systems, Fourth Analytics allows for whole-picture visibility and actionable insights.

> "
> Wahaca sees the main benefit of Fourth Analytics to be the improvement in decision making. We now get all the important data across our Fourth solutions, from labour data and payroll to GP and sales, all in one place, automatically delivered to us for our weekly meetings. All this consolidated information presented via graphical dashboards makes it easy for both head office and the operation to see what can be improved and act fast.
>
> **Melanie Stephens**
> Management Accountant, Wahaca.
> "

Example dashboards and reports from Fourth Analytics

Flash Profit & Loss

Accurate, timely and at the click of a mouse. Saves one person two days a week…
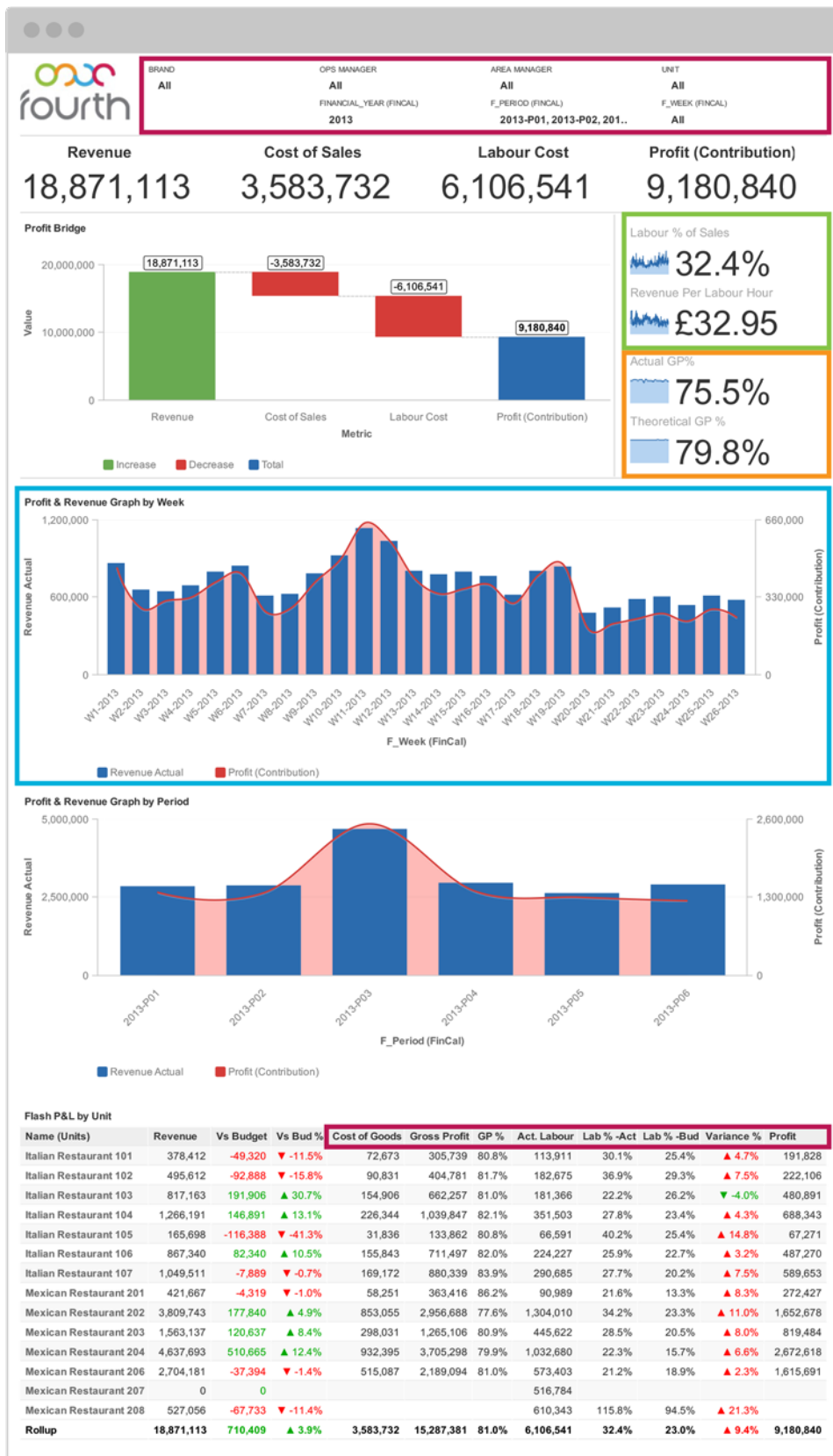
Filter your data any way you want

The power to interpret masses of data in a heartbeat

Measure your actual vs your theoretical GP

See how profit performs in line with sales

The power to interpret masses of data in a heartbeat

Allows you to focus on every key aspect of cost, whenever you want

Flash P&L by Unit

| Name (Units)	Revenue	Vs Budget	Vs Bud %	Cost of Goods	Gross Profit	GP %	Act. Labour	Lab % -Act	Lab % -Bud	Variance %	Profit
Italian Restaurant 101	378,412	-49,320	▼ -11.5%	72,673	305,739	80.8%	113,911	30.1%	25.4%	▲ 4.7%	191,828
Italian Restaurant 102	495,612	-92,888	▼ -15.8%	90,831	404,781	81.7%	182,675	36.9%	29.3%	▲ 7.5%	222,106
Italian Restaurant 103	817,163	191,906	▲ 30.7%	154,906	662,257	81.0%	181,366	22.2%	26.2%	▼ -4.0%	480,891
Italian Restaurant 104	1,266,191	146,891	▲ 13.1%	226,344	1,039,847	82.1%	351,503	27.8%	23.4%	▲ 4.3%	688,343
Italian Restaurant 105	165,698	-116,388	▼ -41.3%	31,836	133,862	80.8%	66,591	40.2%	25.4%	▲ 14.8%	67,271
Italian Restaurant 106	867,340	82,340	▲ 10.5%	155,843	711,497	82.0%	224,227	25.9%	22.7%	▲ 3.2%	487,270
Italian Restaurant 107	1,049,511	-7,889	▼ -0.7%	169,172	880,339	83.9%	290,685	27.7%	20.2%	▲ 7.5%	589,653
Mexican Restaurant 201	421,667	-4,319	▼ -1.0%	58,251	363,416	86.2%	90,989	21.6%	13.3%	▲ 8.3%	272,427
Mexican Restaurant 202	3,809,743	177,840	▲ 4.9%	853,055	2,956,688	77.6%	1,304,010	34.2%	23.3%	▲ 11.0%	1,652,678
Mexican Restaurant 203	1,563,137	120,637	▲ 8.4%	298,031	1,265,106	80.9%	445,622	28.5%	20.5%	▲ 8.0%	819,484
Mexican Restaurant 204	4,637,693	510,665	▲ 12.4%	932,395	3,705,298	79.9%	1,032,680	22.3%	15.7%	▲ 6.6%	2,672,618
Mexican Restaurant 206	2,704,181	-37,394	▼ -1.4%	515,087	2,189,094	81.0%	573,403	21.2%	18.9%	▲ 2.3%	1,615,691
Mexican Restaurant 207	0	0					516,784				
Mexican Restaurant 208	527,056	-67,733	▼ -11.4%				610,343	115.8%	94.5%	▲ 21.3%	
Rollup	**18,871,113**	**710,409**	**▲ 3.9%**	**3,583,732**	**15,287,381**	**81.0%**	**6,106,541**	**32.4%**	**23.0%**	**▲ 9.4%**	**9,180,840**

Actual v Budget labour cost variances

Easily monitor your actual labour cost vs hours worked

Operational gearing at a glance – your salaried vs hourly paid labour mix shows instantly how flexible your labour costs are
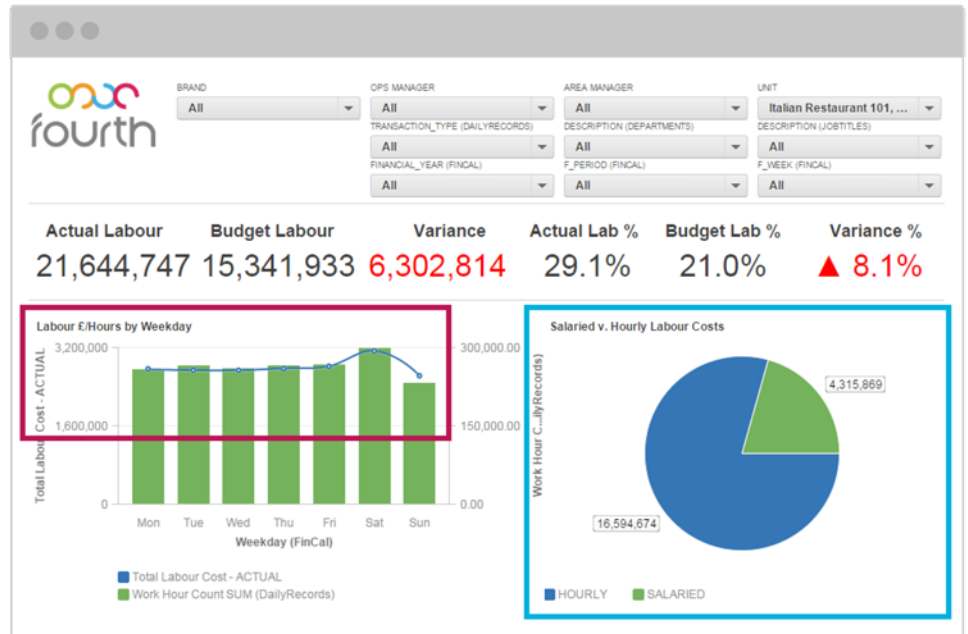
Labour trend analysis

Labour trend analysis
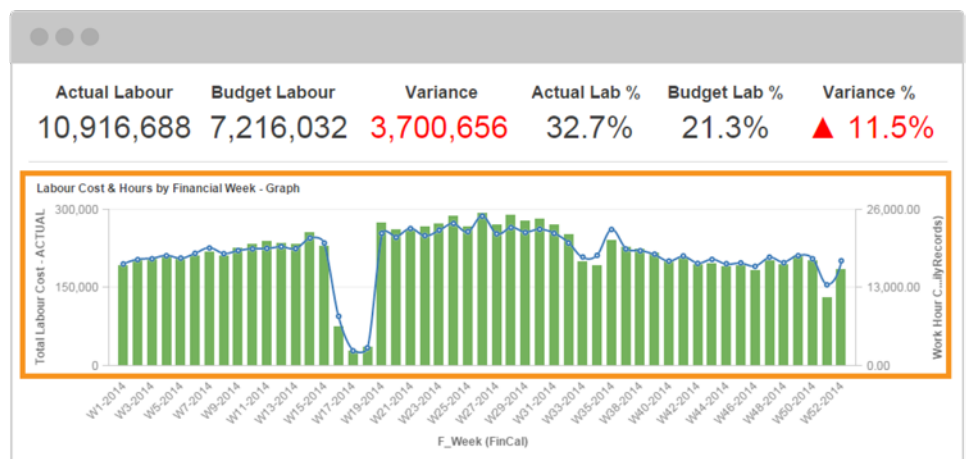
Payroll analysis

See gross to net pay history
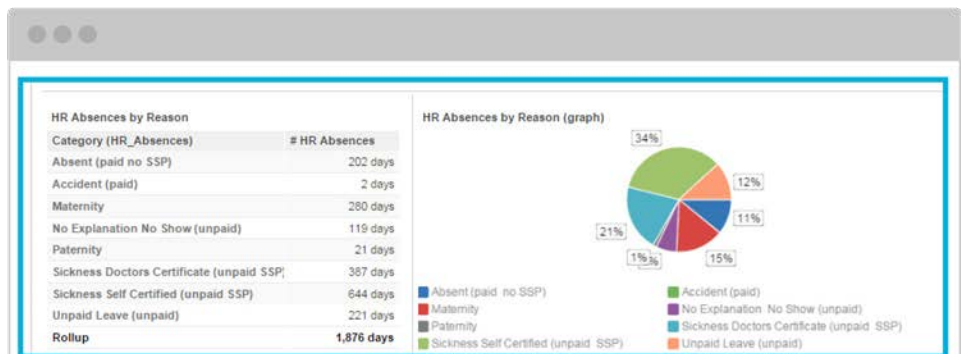
...and payment/deduction type history

Unit	Departments	JobTitles	Rate	Hours
Italian Restaurant 101	BOH	Head Cook	9.14	41.63
		Kitchen Assistant	7.17	27.62
		Kitchen Porter	7.01	31.38
	FOH	General Assistant	6.69	20.97
		Supervisor	8.28	34.61
		Team Member	6.83	26.59
	Hospitality	Cook	9.50	8.50
		Supervisor	8.84	8.73
		Team Member	7.21	8.42
Italian Restaurant 102	BOH	Cook	8.93	39.18
		General Assistant	6.00	39.53
		Kitchen Assistant	6.89	32.31
		Second Cook	7.28	22.04
	Cafe	Assistant Manager	8.75	16.92
		General Assistant	6.43	23.62
		Team Member	6.87	27.57

Benchmark your payrates against your competitors' – and are there links between pay scales and staff turnover?

Staff absence analysis

Track absences by reason

HR Absences by Reason

| Category (HR_Absences)	# HR Absences
Absent (paid no SSP)	202 days
Accident (paid)	2 days
Maternity	280 days
No Explanation No Show (unpaid)	119 days
Paternity	21 days
Sickness Doctors Certificate (unpaid SSP)	387 days
Sickness Self Certified (unpaid SSP)	644 days
Unpaid Leave (unpaid)	221 days
Rollup	**1,876 days**

Track absences by month
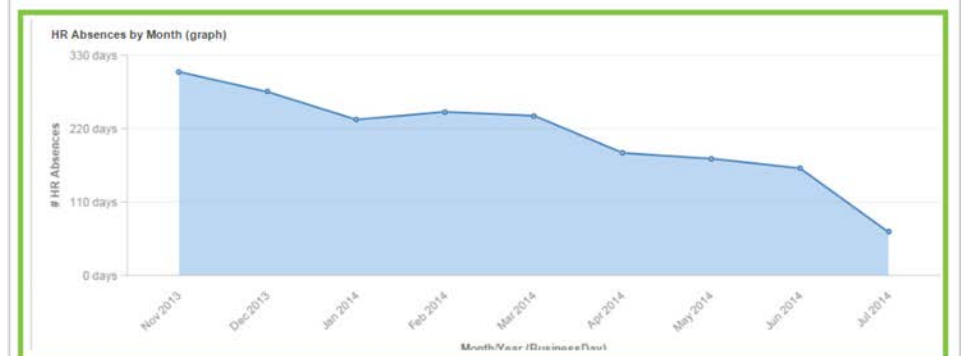
Track absences by length of service and employment type

Staff turnover report

Is this disparity in leavers' gender in line with the overall gender mix?

Why is Brand B losing more people than Brand A?
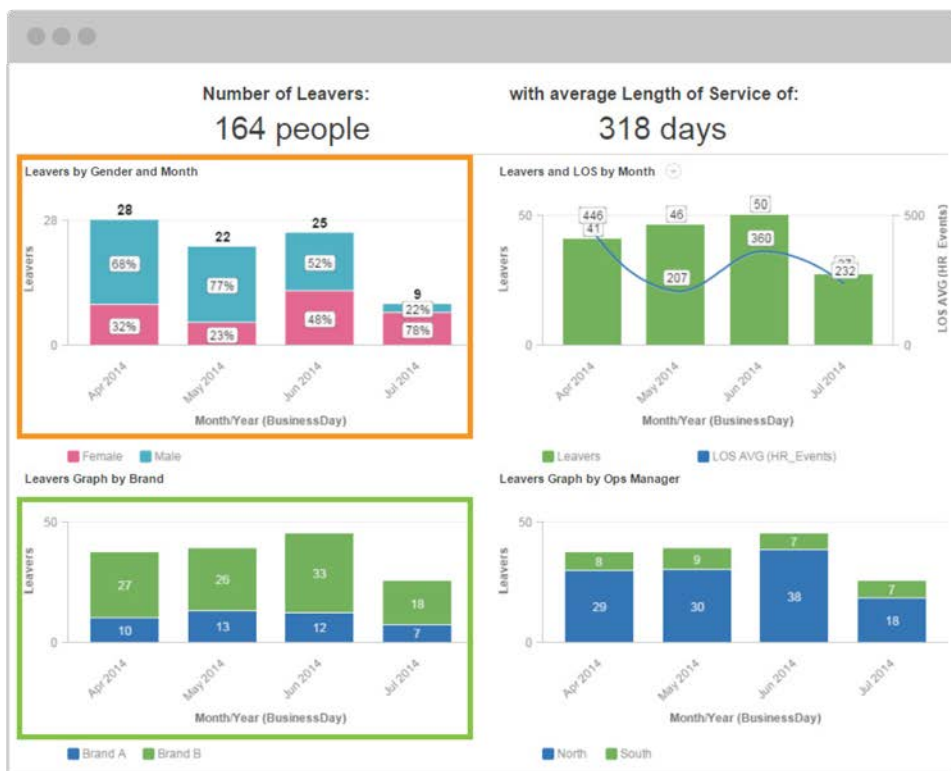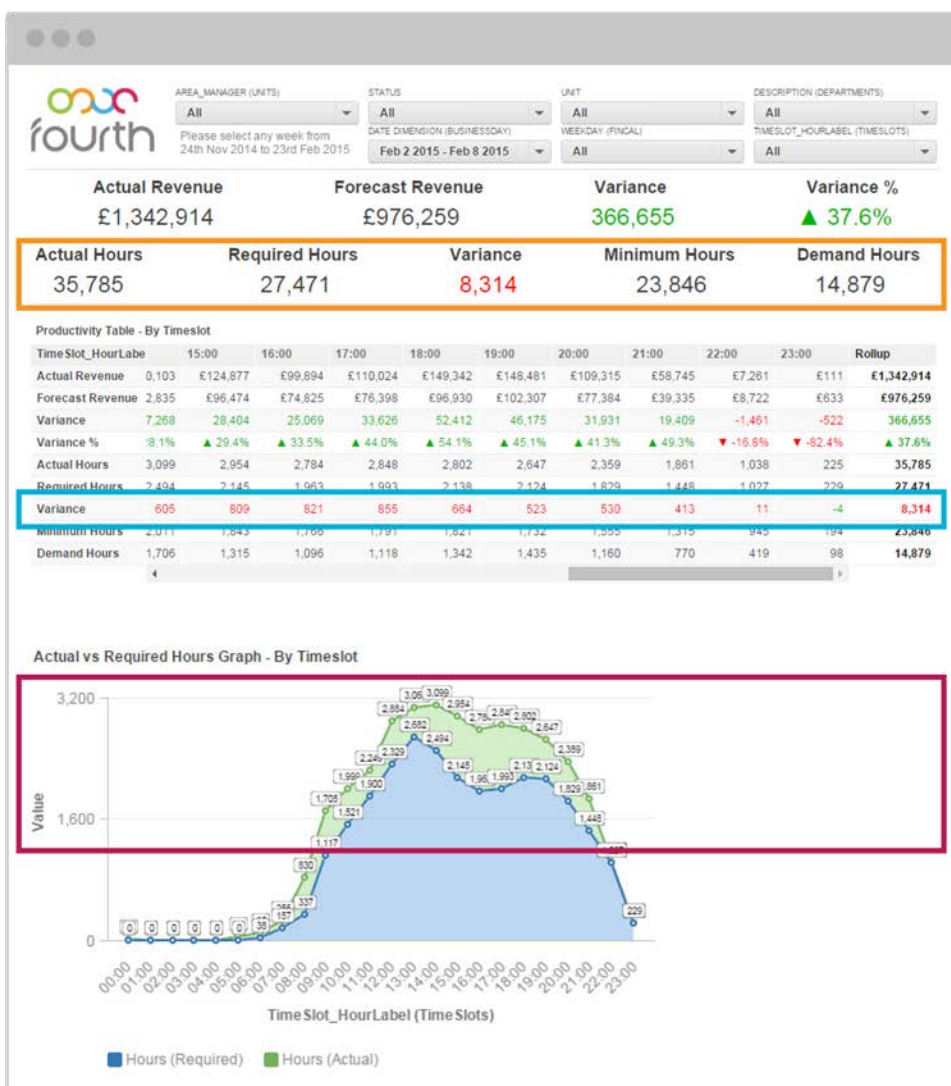

Daily labour productivity analysis

Easily see the variance between actual hours vs required hours to meet forecast demand

Highlight overstaffing by timeslots

See when the biggest areas of labour overspend occur

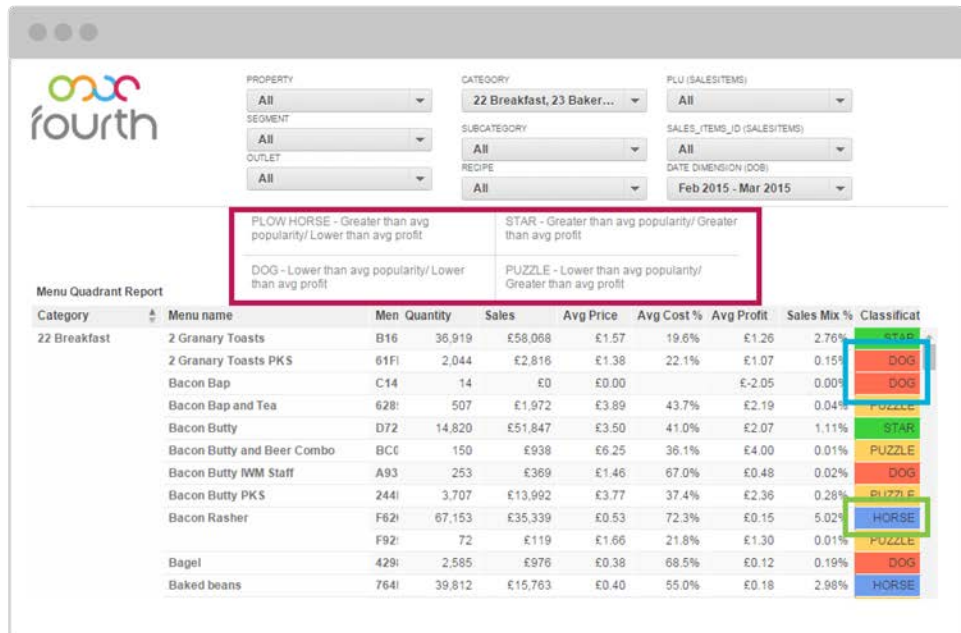See who the best – and worst – performing Area Managers are

Menu quadrants

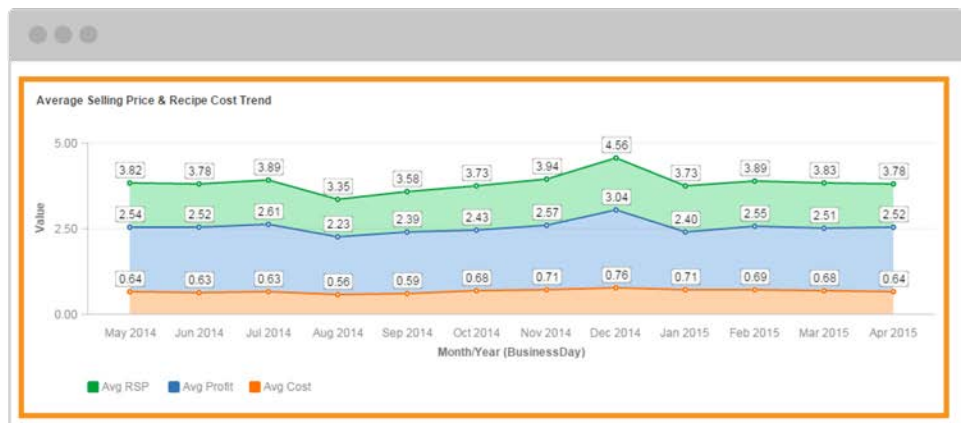Plots your menu items against each other by profitability and popularity…

…showing which menu items may need re-evaluating

…and highlights profit improvement opportunities by showing where selling prices are too low

Average selling price & recipe cost trends

Easily see whether profits are moving in line with cost increases – and where costs are too high

Waste analysis report

Track explained AND unexplained wastage by week, period or year

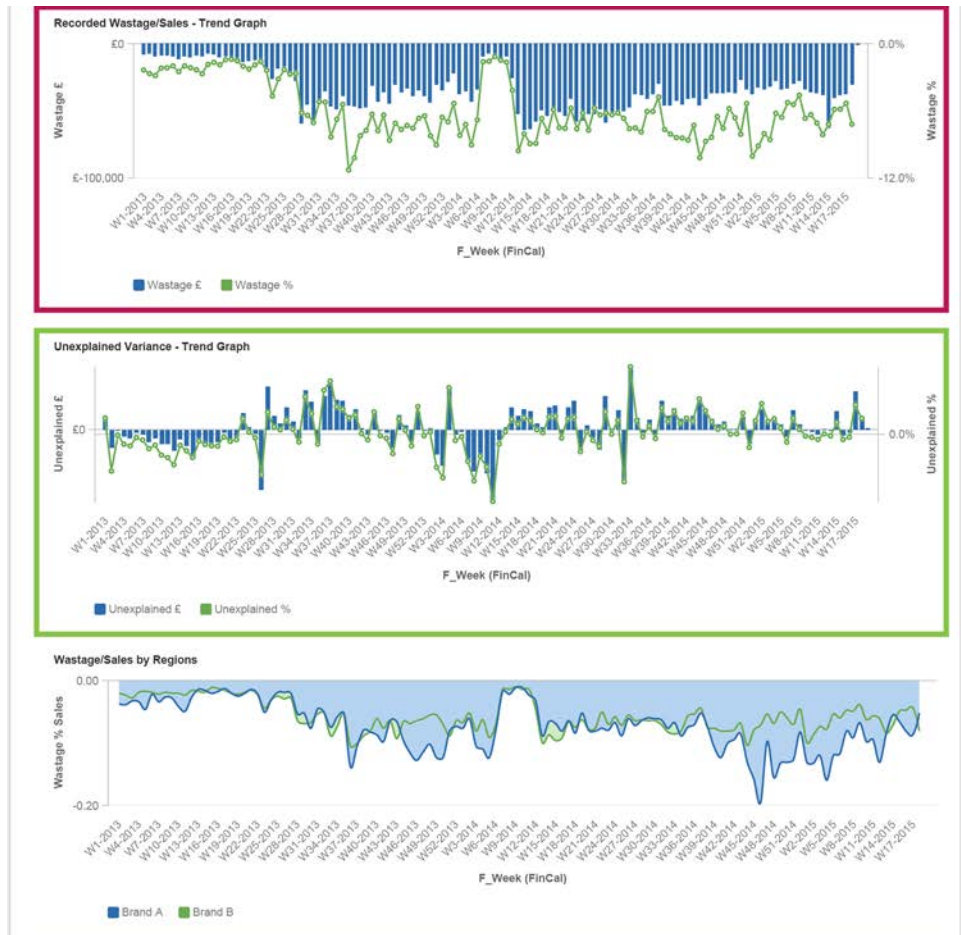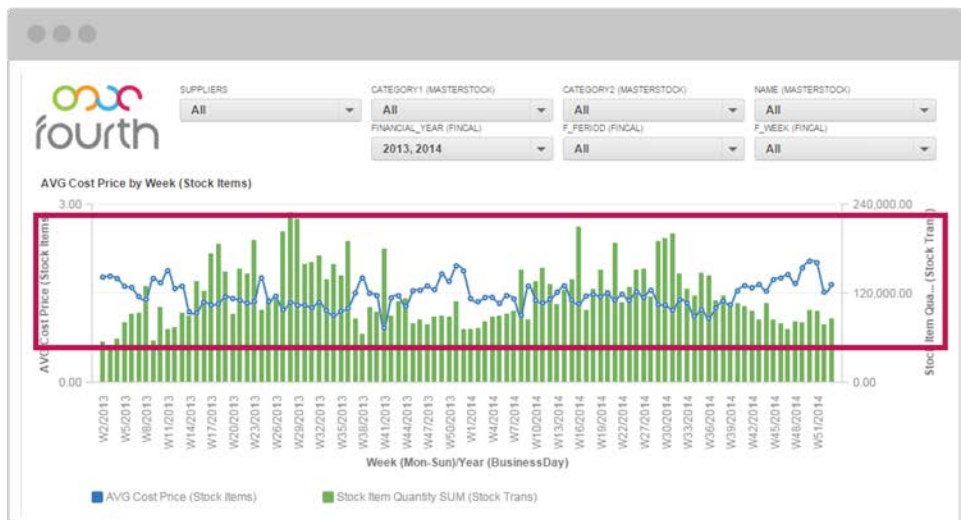Track wastage by cost and by percentage of sales

See the trends in your unexplained wastage

Purchasing analysis chart

See at a glance the variance in sales vs cost of purchase and drill down to see detail on each product and every supplier
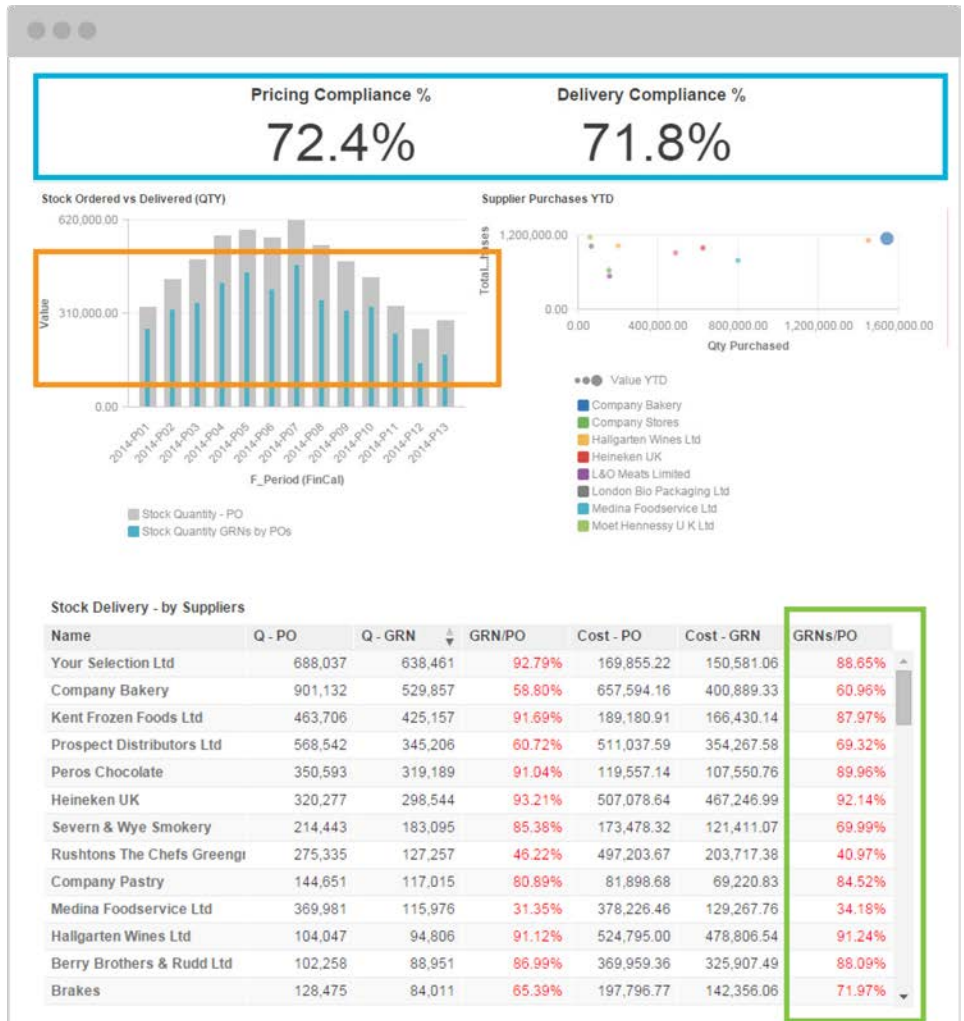
Purchasing compliance analysis
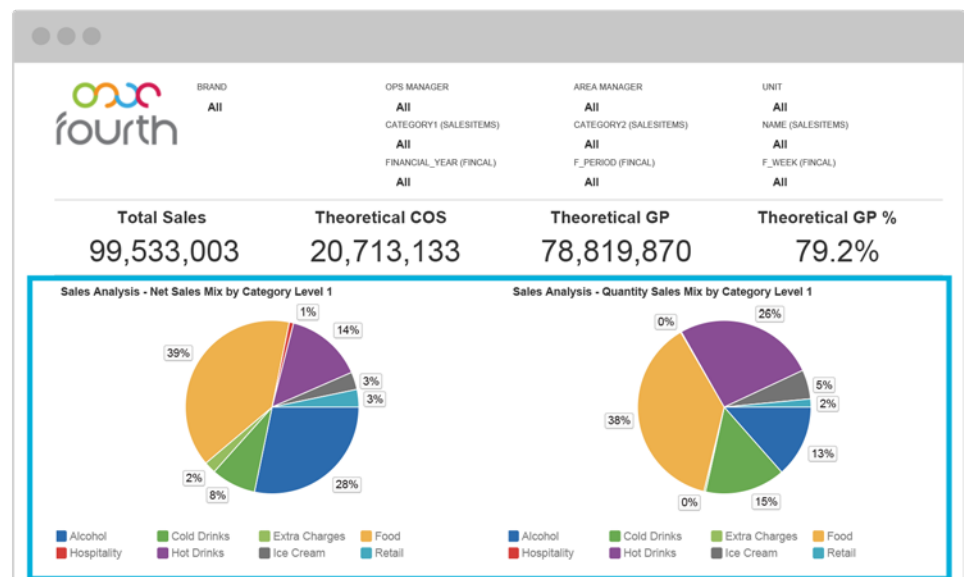
See your suppliers' performance at a glance

See stock ordered vs deliveries

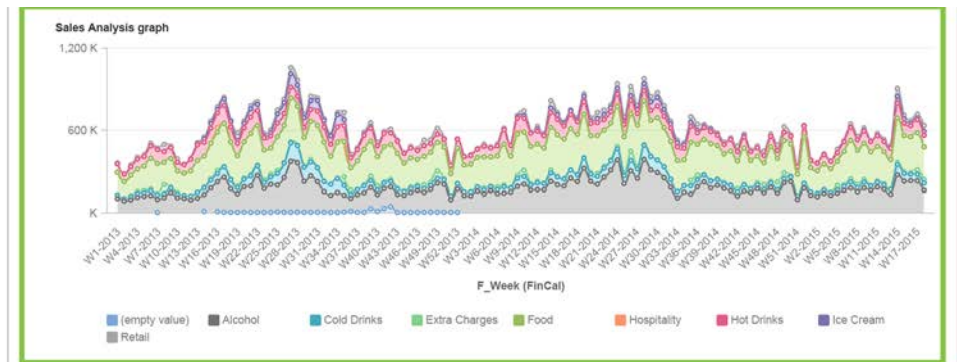See which suppliers are the best – and the worst – at getting it right

Pricing Compliance % 72.4%

Delivery Compliance % 71.8%

Stock Ordered vs Delivered (QTY)

Supplier Purchases YTD

Value YTD
- Company Bakery
- Company Stores
- Hallgarten Wines Ltd
- Heineken UK
- L&O Meats Limited
- London Bio Packaging Ltd
- Medina Foodservice Ltd
- Moet Hennessy U K Ltd

Stock Quantity - PO
Stock Quantity GRNs by POs

Stock Delivery - by Suppliers

Name	Q - PO	Q - GRN	GRN/PO	Cost - PO	Cost - GRN	GRNs/PO
Your Selection Ltd	688,037	638,461	92.79%	169,855.22	150,581.06	88.65%
Company Bakery	901,132	529,857	58.80%	657,594.16	400,889.33	60.96%
Kent Frozen Foods Ltd	463,706	425,157	91.69%	189,180.91	166,430.14	87.97%
Prospect Distributors Ltd	568,542	345,206	60.72%	511,037.59	354,267.58	69.32%
Peros Chocolate	350,593	319,189	91.04%	119,557.14	107,550.76	89.96%
Heineken UK	320,277	298,544	93.21%	507,078.64	467,246.99	92.14%
Severn & Wye Smokery	214,443	183,095	85.38%	173,478.32	121,411.07	69.99%
Rushtons The Chefs Greengr	275,335	127,257	46.22%	497,203.67	203,717.38	40.97%
Company Pastry	144,651	117,015	80.89%	81,898.68	69,220.83	84.52%
Medina Foodservice Ltd	369,981	115,976	31.35%	378,226.46	129,267.76	34.18%
Hallgarten Wines Ltd	104,047	94,806	91.12%	524,795.00	478,806.54	91.24%
Berry Brothers & Rudd Ltd	102,258	88,951	86.99%	369,959.36	325,907.49	88.09%
Brakes	128,475	84,011	65.39%	197,796.77	142,356.06	71.97%

POS Sales analysis

See your sales mix by revenue and by quantity

fourth

BRAND	OPS MANAGER	AREA MANAGER	UNIT
All	All	All	All
	CATEGORY1 (SALESITEMS)	CATEGORY2 (SALESITEMS)	NAME (SALESITEMS)
	All	All	All
	FINANCIAL_YEAR (FINCAL)	F_PERIOD (FINCAL)	F_WEEK (FINCAL)
	All	All	All

Total Sales 99,533,003

Theoretical COS 20,713,133

Theoretical GP 78,819,870

Theoretical GP % 79.2%

Sales Analysis - Net Sales Mix by Category Level 1

Sales Analysis - Quantity Sales Mix by Category Level 1

- Alcohol
- Cold Drinks
- Extra Charges
- Food
- Hospitality
- Hot Drinks
- Ice Cream
- Retail

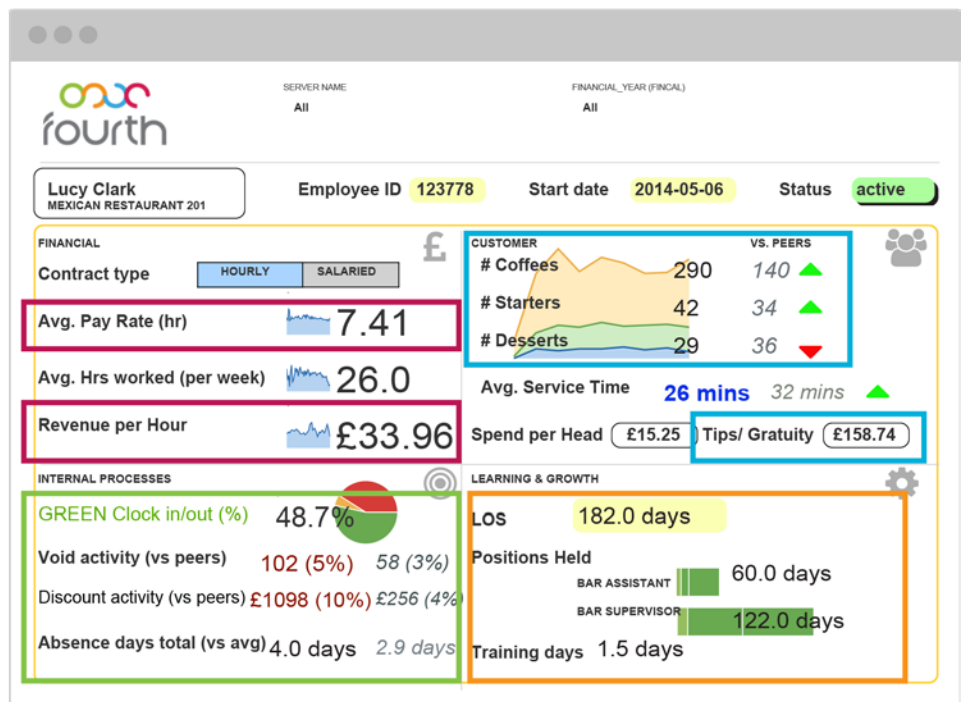See variances in product mix over time

360° Employment Balanced Scorecard

See the employee's cost...

...vs the revenue they generate

See their upsell performance...

...and customer satisfaction with them

See further KPIs including their time & attendance, voids/discount activity & absences

See key HR & Training stats by employer

About Fourth

Fourth provides end-to-end, best-in-class technology and services for the restaurant and hospitality industries. Their procurement, inventory and workforce management solutions, coupled with the industry's most complete data and analytics suite, give operators the actionable insights they need to control costs, scale profitability, improve employee engagement, and maintain compliance. Since its merger with US-based HotSchedules, Fourth serves more than 7,000 customers across 120,000 locations globally.

Call us on +44 (0) 8450 571 234
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