

A FIELD GUIDE FOR HOSPITALITY OPERATORS

Menu Engineering

Using POS Data and Recipe Cards

New ideas. New approaches.
New methods. Same old data.

A GUIDE BY THE CULINARY GROUP

THECULINARYGROUP.COM.AU

Contents

01 Start with the data 04
Prepare the information you already have.

02 Follow the dollars 06
Look beyond percentages and explore the opportunity.

03 Understand the sale 09
When customers buy, what they buy together and how the team can help.

04 Test and review 13
Understand the limits, choose one opportunity and measure what changes.

Start with ten dishes, four weeks of sales and current recipe cards.

Read the guide, then choose one menu opportunity to investigate. Image spaces are reserved for venue photographs in the same rectangular format as the reference guide.

New ideas. New approaches.

Most hospitality venues already have two valuable sources of information: their POS system knows what customers bought, and their recipe cards tell them what should have gone onto the plate. Bringing those two things together can tell us quite a bit about how a menu is performing, but there's an opportunity to go further than the usual sales and food cost reports.

We might know that we sold 400 chicken parmas last month, along with their selling price and food cost percentage. But when were those parmas sold? What else did customers order alongside them? Are there opportunities to increase average order value, or particular trading periods where performance could improve?

These are questions worth investigating, although answering them has traditionally involved exporting reports, building spreadsheets and spending time working through the numbers.

AI offers another way to approach the exercise. Beyond helping organise and analyse information, it allows us to explore the results conversationally, ask follow-up questions and work through ideas as they develop.

You don't need expensive software or complicated integrations to get started. Tools like ChatGPT and Claude allow you to upload POS sales data and recipe cards, then ask questions about how your menu is performing. You can try this with a free account, subject to usage limits, or a paid subscription costing around $30-$35 a month. There's still work involved in preparing the information and checking the results, but this is an exercise almost any operator can attempt with tools already available.



PART 01 - OF FOUR

01

Start with the data

Prepare the information you already have.

IN THIS PART

Start with what you have



Start with what you have

Choose a manageable period, such as four complete weeks, and export your POS sales data. Ideally, this should include quantities sold, revenue, discounts and modifiers. If your POS allows you to export transaction-level information with dates and times, that's worth collecting too.

You'll also need recipe cards for the menu items you want to investigate. These should contain the ingredients, quantities and costs required to produce each dish.

The first job is matching the sales information to the recipes. AI can help organise the data, identify corresponding menu items and highlight missing recipes or inconsistencies, potentially saving considerable time compared with working through everything manually.

The information still needs checking. A lunch parma might have a different portion size from the dinner version, an ingredient price might have changed, or a recipe card might no longer reflect how the kitchen prepares the dish. Extras such as gravy or additional protein also need to be accounted for, including both their selling price and ingredient cost.

It's worth spending time getting this right. An analysis based on incomplete or inaccurate information can produce convincing-looking results that don't reflect what's happening in the business.

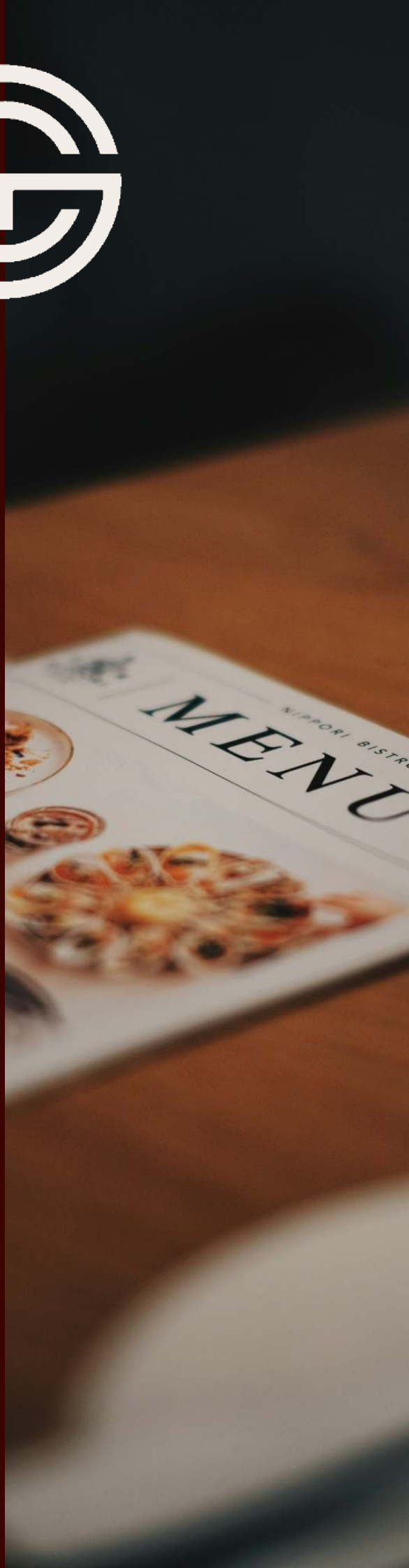


PART 02 - OF FOUR

02

Follow the dollars

Look beyond percentages and explore the opportunity.



IN THIS PART

Look beyond food cost percentages

Have a conversation with your menu

Look beyond food cost percentages

Let's work through an example using a chicken parma.

Over four weeks, a venue sells 400 chicken parmas at $28 each. The recipe, including chips and salad, costs $9 per serve.

That gives us a theoretical food gross profit margin of approximately 67.9%.

	Four-week result
Chicken parmas sold	400
Selling price	$28.00
Sales revenue	$11,200.00
Theoretical ingredient cost	$3,600.00
Theoretical food gross profit	$7,600.00
Gross profit per parma	$19.00

Now consider a pasta dish selling for $26, with a recipe cost of $6.50. It generates $19.50 in theoretical food gross profit per serve, representing a margin of 75%.

	Four-week result
Pasta portions sold	100
Selling price	$26.00
Sales revenue	$2,600.00
Theoretical ingredient cost	$650.00
Theoretical food gross profit	$1,950.00
Gross profit per portion	$19.50

However, the venue only sells 100 portions of pasta over the same period. That means the pasta contributes $1,950 in theoretical food gross profit, compared with $7,600 from the parmas.

The pasta has a higher margin and contributes slightly more per plate, but the parma contributes considerably more total dollars because customers buy far more of them.

Both figures are useful when reviewing menu performance. A high food cost percentage isn't necessarily a reason to remove a dish, just as a strong margin doesn't automatically make something a valuable menu item. We need to consider the relationship between sales volume, selling price and ingredient cost.

All figures in this example exclude GST. Theoretical food gross profit is calculated before labour and other operating expenses.

Have a conversation with your menu

This is where AI becomes particularly interesting. Rather than finishing with a spreadsheet or report, we can use the analysis as the starting point for a conversation.

Consider a chicken schnitzel example. Over four weeks, we sell 400 chicken schnitzels at $28 each, with a recipe cost of $9 per serve. That generates $7,600 in theoretical food gross profit before any gravy is added.

Front-of-house staff also sell gravy with 100 of those schnitzels. Gravy sells for $2 per portion and costs $0.60. Those cross-sells generate $200 in revenue and $140 in theoretical food gross profit, bringing the combined contribution to $7,740.

An attachment rate measures the success of cross-sells on top of a base item: the percentage of base items sold with the add-on. Here, 100 schnitzels with gravy divided by 400 schnitzels sold, multiplied by 100, gives a 25% attachment rate. This assumes one gravy portion per attached schnitzel.

To measure this accurately, ensure your POS tracks gravy as a modifier or a separate attached SKU linked to the chicken schnitzel. A separate, unlinked gravy sale on the same bill is not enough to establish which meal it belongs to.

We can now ask AI what would happen if attachment increased to 50%. At the same volume of 400 schnitzels, we would sell 200 portions of gravy instead of 100. That adds $200 in revenue and $140 in theoretical food gross profit over four weeks. Average revenue per schnitzel order increases from $28.50 to $29.

This improvement does not require attracting additional customers. We can then investigate whether the opportunity exists across every service or whether particular trading periods deserve attention.

Current upsell - 25%	Four weeks
Chicken schnitzels sold	400
Gravy attachment rate	25%
Gravy portions sold	100
Gravy price per portion	$2.00
Gravy cost per portion	$0.60
Gravy profit per portion	$1.40
Gravy sales revenue	$200.00
Gravy ingredient cost total	$60.00
Gravy food gross profit	$140.00
Schnitzels + gravy gross profit	$7,740.00
Avg. revenue per schnitzel	$28.50

Target upsell - 50%	Four weeks
Chicken schnitzels sold	400
Gravy attachment rate	50%
Gravy portions sold	200
Gravy price per portion	$2.00
Gravy cost per portion	$0.60
Gravy profit per portion	$1.40
Gravy sales revenue	$400.00
Gravy ingredient cost total	$120.00
Gravy food gross profit	$280.00
Schnitzels + gravy gross profit	$7,880.00
Avg. revenue per schnitzel	$29.00

Moving from 25% to 50% adds $200 in revenue, $60 in ingredient cost and $140 in theoretical food gross profit over four weeks.

All figures exclude GST. Food gross profit is theoretical, before labour and other operating expenses. Attachment rates assume gravy is directly linked to chicken schnitzel orders.

PART 03 - OF FOUR

03

Understand the sale

When customers buy, what they buy together and how the team can help.

IN THIS PART

Look at when customers are buying

Use more of the information your POS collects

Bring front of house into the conversation



Look at when customers are buying

If our POS export includes transaction dates and times, we can ask AI to break down parma sales by day of the week, lunch versus dinner, or individual trading periods.

In the illustrative month below, Monday and Tuesday lunch services are closed. Thursday dinner is the biggest seller because it is Parma Night, while Friday lunch is also popular. Comparing lunch and dinner helps us see those patterns clearly.

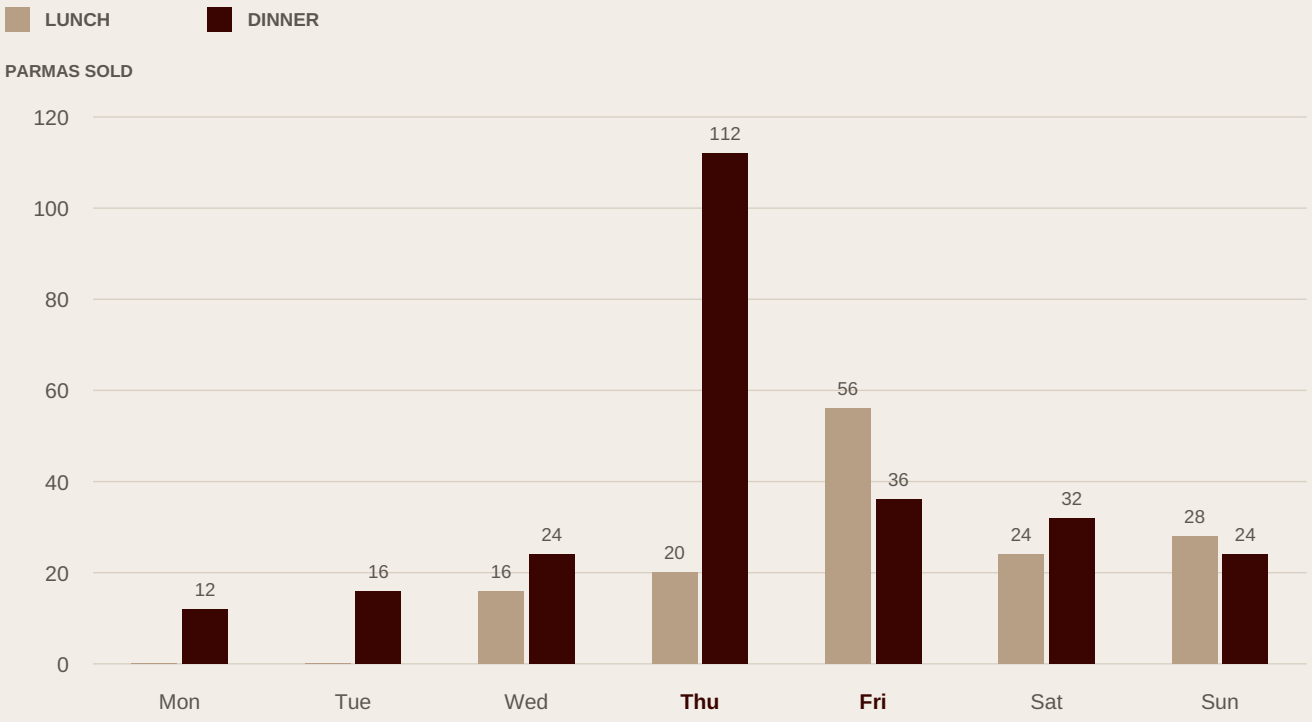
These patterns could lead to useful questions about customer preferences, menu presentation or how staff approach upselling during different services.

A standard item-sales report might tell us how many parmas and portions of gravy were sold, but it won't necessarily show which items were purchased together.

That's where the underlying transaction data becomes valuable.

CHICKEN PARMA SALES BY DAY AND SERVICE

Illustrative month: four complete weeks - 400 parmas sold



Mon/Tue lunch: closed. Thursday: Parma Night. Friday lunch: popular.

Example data only. Bars show total parmas sold across the four occurrences of each weekday closed lunch services are recorded as zero.

Use more of the information your POS collects

A gravy total can show how much we sold without showing which dish it accompanied. The two examples below describe the same illustrative four-week sales: 180 gravy portions at $2.00 each, generating $360.00 in revenue.

Many POS systems export individual transaction records showing every item on each bill. Include the transaction identifier, date and time so AI can identify products frequently purchased together and compare patterns across days and services.

Even without direct item attachments, hundreds of transactions can reveal useful purchasing patterns. However, a bill with four meals and two gravies does not identify which meals had gravy. These patterns cannot establish precise dish attachment rates unless the items are directly linked.

EXAMPLE 1 - GRAVY SOLD AS AN UNLINKED ITEM

POS item / SKU	Qty	Revenue	Attached dish	Day / service
Gravy / GRV-GEN	180	$360.00	Not recorded	Not in summary

Was it ordered with a chicken parma, beef schnitzel, eye fillet (gravy extra), or chips with gravy? This summary cannot tell us. It also lacks service detail, so we cannot compare dish-specific gravy sales at Friday lunch, Friday dinner or Saturday dinner.

We cannot reliably target or measure improvements in cross-sells without knowing the base dish and service. Different services may attract different guest demographics, but the total alone cannot explain their preferences.

EXAMPLE 2 - DISH-SPECIFIC ATTACHMENTS + SERVICE DATA

Base dish	Attached gravy SKU	Fri lunch	Fri dinner	Sat dinner	Total
Chicken parma	GRV-PARMA	10	20	30	60
Beef schnitzel	GRV-BEEF	15	20	25	60
Eye fillet	GRV-EYE	5	15	15	35
Chips	GRV-CHIPS	10	5	10	25
Total portions		40	60	80	180

Now we can see which dishes sell gravy in each service. Chicken parma gravy generated $120.00, beef schnitzel $120.00, eye fillet $70.00, and chips $50.00. Total revenue is still $360.00.

Configure each SKU as a modifier or attachment linked to its base item. Retain transaction dates and times to identify day and service: an SKU alone does not provide that information. Compare attached portions with base dishes sold in the same service to calculate attachment rates, then test changes and review the results.

Illustrative data only. Each attached portion costs the guest $2.00 excluding GST. These examples show recording differences, not measured guest demographics.

Bring front of house into the conversation

Let's say our analysis suggests gravy attachment rates are particularly low during Friday dinner service.

We could ask AI to help us explore ways to improve them. Perhaps gravy isn't clearly presented as an option on the menu, or staff aren't consistently offering it when customers order a parma.

The team might decide to trial a simple change: ask front-of-house staff to offer gravy with every parma order during Friday dinner service.

We can then measure the results over the following four weeks, looking at the number of parmas sold, the number of gravy add-ons, attachment rates and additional revenue generated. Comparing the results with similar trading periods would help us understand whether the change made a difference.

This is where the exercise becomes more than a menu costing review.

We started by looking at the profitability of a chicken parma. By exploring the information further, we've moved into average order value, customer purchasing behaviour, POS configuration and front-of-house performance.

The analysis has given us something practical to test, and the results of that test can inform the next conversation.



PART 04 - OF FOUR

04

Test and review

Understand the limits, choose one opportunity and measure what changes.

IN THIS PART

Understand what the numbers can and can't tell you

What else could you investigate?

Give it a try



Understand what the numbers can and can't tell you

There is an important distinction when working with POS data and recipe cards.

Together, they allow us to calculate theoretical food cost: what the ingredients should have cost if the recorded recipes and portions were followed. They don't establish what the kitchen actually consumed.

Calculating actual food cost requires additional information, including opening stock, purchases and closing stock, with adjustments for relevant stock movements.

If theoretical and actual food costs differ, there may be something worth investigating. Portions could be larger than the recipe specifies, there might be unrecorded waste, or the recipe cards might no longer reflect how dishes are prepared.

AI can help examine these differences and suggest possible explanations, but it shouldn't present them as established facts. Sometimes the next step is simply observing how a dish is prepared or discussing the results with the chef.

The same principle applies to our gravy example. Increasing attachment rates might improve revenue, but we should also consider customer feedback, service speed and whether the approach works for the front-of-house team.

The numbers provide information to support a decision. They don't replace the operational knowledge of the people running the venue.



What else could you investigate?

Once you've worked through one example, the same approach can be applied to other parts of the menu.

You might investigate whether a high-margin dish is selling often enough to justify its place on the menu, or whether a popular dish has become less profitable following ingredient price increases.

Transaction data could help identify products frequently purchased together, while sales by trading period might reveal opportunities to adjust menu offerings or improve upselling.

You could also use AI to explore pricing scenarios, compare alternative ingredients or estimate the financial impact of changing portion sizes. A slow-selling dish might deserve closer attention if it requires ingredients used nowhere else on the menu.

Not every investigation will uncover an opportunity. Sometimes the results will confirm that an existing decision makes sense, which is useful in itself.

The benefit of conversational analysis is that you can follow the questions that emerge rather than being restricted to the information presented in a standard report. You can introduce your own knowledge of the business, challenge assumptions and explore alternatives before deciding whether anything needs to change.

Use the chicken parmigiana as a benchmark, then compare sales volume, gross profit dollars, trading opportunities and labour. The figures on the following page are an illustrative four-week example, not measured venue results.



Compare the menu

ILLUSTRATIVE FOUR-WEEK MENU COMPARISON

Dish / trading pattern	Price	Recipe cost	Sales qty	GP / serve	Total GP
Beer battered fish & chips - high seller	$32.00	$10.00	360	$22.00	$7,920.00
Chicken parmigiana, chips & salad - benchmark	$28.00	$9.00	400	$19.00	$7,600.00
Roast of the day - Sundays only	$30.00	$10.50	160	$19.50	$3,120.00
Ploughmans platter - shares 2-4, weekends after 2pm	$65.00	$25.00	12	$40.00	$480.00
Wednesday trivia: porterhouse, chips, salad + pot of beer	$35.00	$16.50	200	$18.50	$3,700.00
Club sandwich - strong weekend sales	$24.00	$7.50	240	$16.50	$3,960.00
Burger of the day - labour comparison	$26.00	$8.00	180	$18.00	$3,240.00

Steak bundle cost includes $14.00 food + $2.50 beer. Its 47.1% ingredient/beverage cost leaves 52.9% gross profit before labour and other expenses. Review the full bundle, not steak food cost alone.

SUNDAY ROAST - SIDES FOR THE TABLE

Side	Price	Recipe cost	Sales qty	Total GP
Roasted potato gratin	$12.00	$3.50	60	$510.00
Roasted cauliflower cheese	$12.00	$4.00	50	$400.00
Roasted brussel sprouts	$12.00	$3.60	40	$336.00

The sides add $1,246.00 in theoretical gross profit, bringing roast plus sides to $4,366.00. These are shared table sides, so portions sold are not a per-diner attachment rate.

Compare like trading periods: Sunday roasts only have four services here, while the platter only trades on weekends after 2pm. Review its sales per eligible service and per sharing party before judging it against all-week dishes.

Labour matters: club sandwiches take twice the labour of the burger. For illustration, 8 versus 4 minutes per serve means 32 versus 12 preparation hours at the sales volumes above. Cost the actual time before deciding which dish contributes more.

Steak night review: check current recipe and beer costs, discounts, portion sizes and sales. Reconcile theoretical usage with stocktakes, purchases and waste to understand actual cost, then test the price or offer. Illustrative GP does not establish actual profitability.

Illustration treats prices as excluding GST - confirm the GST treatment of your $65.00 platter and $35.00 steak bundle. These two prices were supplied. Other prices, costs, volumes and labour minutes are illustrative. GP is before labour and overheads.

Give it a try

You don't need to start with your entire menu.

Choose ten dishes, export four weeks of POS sales and gather the corresponding recipe cards. Upload the information to ChatGPT or Claude, taking care to remove personal information and review the tool's data-handling settings before sharing commercially sensitive material.

Ask the AI to help match the dishes, identify missing information and calculate theoretical food cost and gross profit. Check the calculations before relying on them.

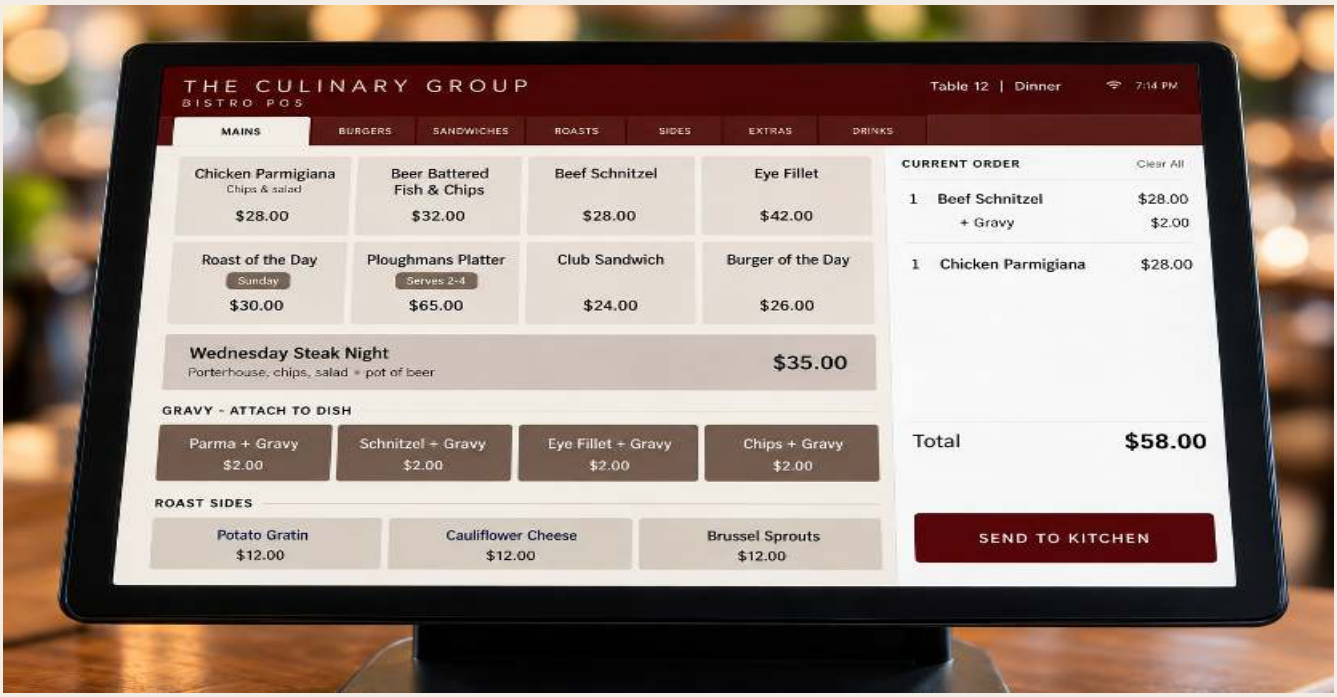
Once you have a reasonable starting point, begin exploring. Look at which dishes contribute the most gross profit dollars, when they're selling, what customers purchase alongside them and whether there are opportunities to improve performance.

You might discover that the information you need is already available in another POS report, or that a small change to your modifier buttons would make future analysis more useful.

Choose one opportunity worth investigating, decide what you'd like to improve and give someone responsibility for testing it. Review the results over a comparable period and use what you've learned to decide what happens next.

You don't need to automate the exercise or implement a new technology platform. The value comes from combining information you already have with your own understanding of the business, then using AI to explore questions that might otherwise go unanswered.

New ideas. New approaches. New methods. Same old data.





New ideas. New approaches. New methods. Same old data.