Data Foundations: Getting the Basics Right

Before AI comes data quality. A practical guide to building the data foundations your hospitality operation needs.

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61%	40%	15%	4
AI adopters blocked by poor data quality	Reporting time reduction Marriott data program	Food cost accuracy gain post-standardisation	Dimensions of data quality

The AI Readiness Problem

Hospitality operators are under growing pressure to adopt AI-powered tools. Predictive demand forecasting, dynamic pricing, AI-assisted scheduling, and personalised guest communications are now commercially available and competitively relevant. But the majority of operators attempting to implement these tools encounter a foundational problem before any AI is deployed: the underlying data is not fit for purpose.

A 2024 survey by Hospitality Technology magazine found that 61 percent of operators who had attempted AI implementation cited "poor data quality" as the primary barrier to achieving expected outcomes. The technology functioned as designed. The inputs it received did not. AI systems amplify the quality of the data they consume. Garbage in, as the engineering principle holds, remains garbage out regardless of the sophistication of the model.

What Good Data Foundations Look Like

Data quality in a hospitality context rests on four dimensions. Completeness means every transaction, cover, and labour hour is captured. Accuracy means the data reflects what actually occurred, not what was approximated or manually adjusted. Consistency means the same item, location, and time period is described the same way across all systems. Timeliness means data is available within a timeframe that enables operational decision-making.

Global data standards provide a framework for achieving consistency across complex operations. The GS1 Global Trade Item Number (GTIN) system, used by major contract catering and stadium operators, ensures every product has a unique, globally recognised identifier. This eliminates the problem of the same item appearing under multiple names across purchasing, inventory, and recipe systems. ISO 8000 and ISO 22745 provide standards for master data quality in supply chain contexts, directly applicable to F&B; procurement and recipe management.

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Building the Stack from the Bottom Up

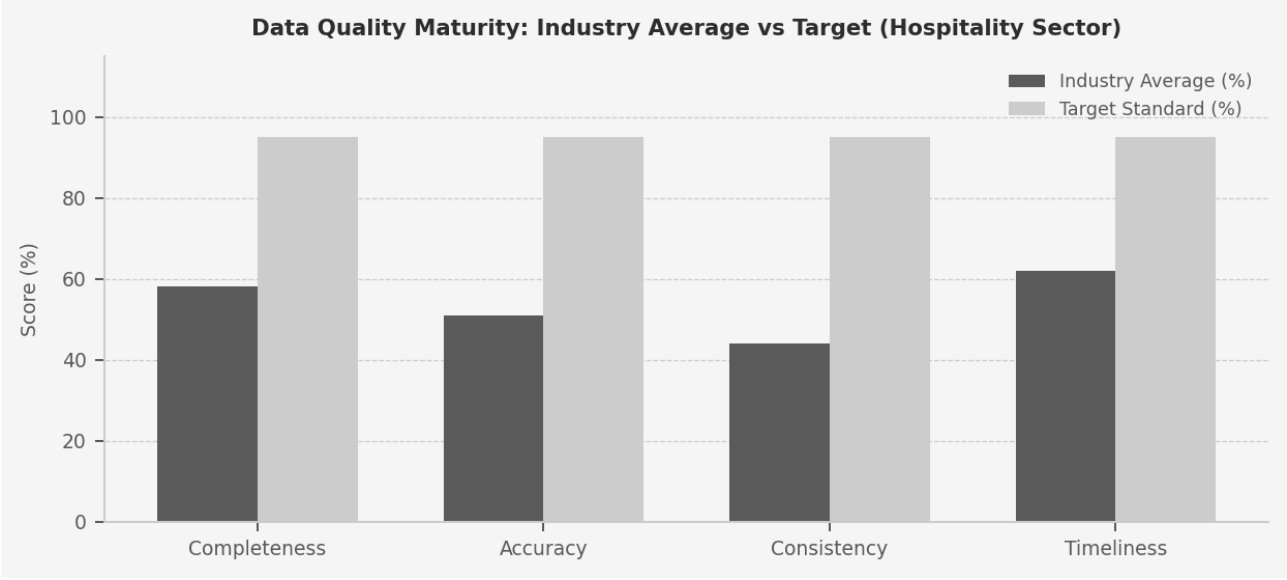
The practical sequence for building data foundations begins with the point of sale. Every item sold must be mapped to a consistent product hierarchy: category, sub-category, and item. This taxonomy should align with the recipe management system so that sales data can be automatically reconciled with theoretical food cost. Without this alignment, food cost reporting requires manual intervention and is perpetually inaccurate.

Marriott International's 2022 data governance program, rolled out across 8,000 properties in 30 countries, standardised F&B; item taxonomy using a GS1-aligned Global Product Classification (GPC) framework. The result was a 40 percent reduction in time spent on monthly F&B; reporting and a 15 percent improvement in food cost accuracy across the estate. The program required 18 months and significant investment in master data governance before benefits were realised.

The Compounding Return on Clean Data

Clean data foundations do not just enable AI. They improve every layer of operational management. Purchasing teams make better decisions when ingredient cost history is accurate and complete. Scheduling managers forecast labour requirements more precisely when cover data is granular and consistent. Finance teams close month-end faster when system data does not require manual reconciliation.

The investment in data foundations should be viewed as infrastructure, not overhead. Like physical plant and equipment, it depreciates without maintenance and compounds in value with consistent care. Operators who build this foundation now will have a structural advantage as AI tools mature and the competitive premium on data-driven decision-making increases.



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