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Integrated management in small and medium-sized enterprises: processes, inventory, cash flow and operational intelligence

Gestión integrada en pequeñas y medianas empresas: procesos, inventario, flujo de caja e inteligencia operativa

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Abstract
This article examines the integration of process management, inventory, working capital, commercial relationships and data use in small and medium-sized enterprises. The narrative review draws on operations, logistics, finance, quality, risk and digitalization literature. It discusses how local decisions produce cross functional effects and why information systems do not correct weak processes or records. The analysis proposes principles of proportionate governance, traceable indicators and learning cycles. It concludes that improvement depends on coherence among strategy, operational flow, information and accountability, without assuming a universal technological solution or inventory level.
Keywords: integrated management; processes; inventory; working capital; digitalization; small and medium sized enterprises

Introduction

SMBs operate under capital, people, and time constraints, but they face demands similar to those of larger organizations. They must buy, produce, sell, receive, control quality, and respond to risk. When these functions are managed separately, coherent decisions in one area can create losses in another. Management integration seeks to make these relationships visible.

Digitalization has expanded the availability of systems, means of payment, and relationship channels. The OECD (2021) recognizes opportunities for productivity and reach, but also skills gaps, security, and adoption among smaller companies. Technology reduces the cost of coordination in some contexts, but requires reliable data and the ability to change.

Inventories and cash flow are central connection points. Buying in greater volume can reduce price and increase losses; selling in installments can increase revenue and pressure liquidity; expanding variety can improve attraction and reduce turnover. The problem is multidimensional. Management models need to make explicit assumptions, limits, and consequences.

The objective is to analyze how processes, supplies, finances, data, and relationships can form a decision system proportional to size. The guiding question is: what conditions allow integrating control and adaptation without creating bureaucracy or undue trust in tools? The article distinguishes potential capacity from proven results.

Methodology

A narrative and critical review of studies and standards on operations, logistics, inventories,

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working capital, quality, risk, data analysis, and digitalization of small and medium-sized companies was carried out. Consolidated academic books, peer-reviewed articles, and institutional publications with an identifiable method or basis were prioritized.

The conceptual search gathered terms related to process management, sales and operations planning, inventory accuracy, cash conversion cycle, integrated systems, analytical capabilities, food quality and waste. Promotional sources and baseless efficiency claims were excluded.

The analysis was organized by decision-making functions and their interfaces. Observational evidence was not interpreted as universal causality. Standards were used as a reference of principles, without suggesting certification or automatic application. The graph reproduces aggregated data from UNEP and has a contextual purpose.

Limitations include heterogeneity across sizes, sectors, and maturity levels. No meta-analysis or intervention testing was conducted. Therefore, the findings offer a synthesis of conditions and risks, rather than universal percentages of cost reduction, waste, or performance increase.

1. Process management and operational coherence

Integrated management starts with defining the value stream. In smaller companies, financial, commercial, logistical, and operational tasks often share people and information. Proximity can speed up responses, but it also creates dependence on informal knowledge. Mapping inputs, decisions, managers, and outputs allows you to recognize where a purchase delay affects production, sales, cash, and fulfillment. The operations literature recommends that the design of the process precedes the choice of technology, as systems only automate the rules they receive (SLACK; BRANDON JONES; BURGESS, 2022).[1]

Process is not synonymous with rigidity. Useful standardization delimits critical activities, authorization criteria, and control points, keeping room to handle exceptions. In purchases, for example, requisition, quotation, approval, receipt, and payment must form a verifiable sequence. When these steps are disconnected, the organization loses the ability to compare price, quality, deadline, and financial impact. Documentation must be proportional to the risk and size, avoiding bureaucracy that does not improve the decision.

Integration depends on a common language between areas. Sales observes demand and relationship; operations manages capacity and quality; finance monitors liquidity and margin; supplies negotiates availability and cost. Isolated indicators can stimulate conflicting decisions, such as increasing inventories to avoid rupture without considering validity, fixed capital, or obsolescence. A balanced

[1] The process approach considers interrelated activities as a system, allowing the evaluation of effects between functions and not just isolated results.

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set of metrics should reveal cross-effects, and not reward local efficiency to the detriment of the total result.

The responsibility for each piece of data needs to be explicit. Product registration, payment terms, inventory levels, technical sheets, and costs cannot have several competing versions. Information governance defines origin, update, approval, and use. This care is particularly important when spreadsheets, sales systems, banking applications, and relationship platforms coexist. Reconciliation is no longer a late correction and becomes part of the control routine.

Continuous improvement requires short cycles of observation and correction. Operational meetings should start from verifiable deviations, examine causes, and record decisions. The goal is not to produce more reports, but to reduce the interval between signal and response. ISO 9001:2015 associates the process approach with risk-based thinking, which favors controls appropriate to criticality. An organization learns when it transforms occurrences into process adjustments and verifies that the result has been maintained.

2. Inventories, purchases and working capital

Inventory connects service availability and capital use. Raw materials, goods, packaging, and maintenance items have distinct behaviors of demand, deadline, and loss. Classification must combine value, criticality, variability, and validity. The ABC curve is useful for prioritizing economic attention, but it does not identify cheap items alone whose lack interrupts the entire operation. Multicriteria methods offer a more adequate view when risk of rupture and perishability are relevant.

The replenishment policy needs to reflect demand and supply timing. Point-of-order, safety stock, and economic lot are analytical models, not automatic answers. Choppy data, promotions, seasonality, and supplier constraints change assumptions. Responsible practice records parameters and reviews exceptions. High inventories can hide forecasting and process failures, while excessively low levels transfer risk to customers and production.

Purchases should not be evaluated only by the lowest unit price. Total cost includes freight, quality, time, payment condition, loss, need for inspection, and supplier reliability. The negotiation needs to observe the effect on cash and operation. Volume discounts can destroy value when they increase disposal or occupy capital for a period longer than the financial cycle. The comparison should use a standardized unit of measurement and equivalent conditions.

Working capital translates the time between paying, producing, selling, and receiving. The cash conversion cycle allows you to visualize how inventory, accounts receivable, and accounts payable interact. Reducing this cycle does not mean indiscriminately pressuring suppliers or customers. It means attacking causes such as unnecessarily early purchases, low turnover, collection failures, and

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commercial deadlines incompatible with the margin. Liquidity needs to be managed along with profitability.

Physical accuracy is a requirement for any model. Rotating inventories, loss control, registration of returns, and segregation of non-conforming items sustain balance confidence. Recurrent differences should be investigated by cause, not simply adjusted. Koumanakos (2008) demonstrated an association between inventory levels and business performance, but the direction and intensity vary according to context. Therefore, the goal should be adequacy, not a universally minimum level.

3. Data, systems and proportional digitalization

The digitalization of small and medium-sized companies must start with defined problems. Management, relationship, and analysis systems can integrate transactions, but investment only produces value when processes, records, and responsibilities are prepared. The OECD (2021) notes that smaller companies have gaps in adoption and digital skills. The difference is not solved only with access to software, as it involves strategy, training, security, and the ability to reorganize routines.[2]

An integrated system reduces duplication when it uses consistent records and clear rules. However, the implementation can amplify errors if items, customers, and suppliers are migrated without validation. Preparation includes data sanitation, permission design, scenario testing, and continuity plan. The beginning should favor critical processes and indicators that support real decisions. Unused functionalities increase cost and complexity without increasing control.

Management panels need to maintain traceability until the transaction. Revenue, margin, loss, turnover, and satisfaction are concepts that require formula, periodicity, and responsible. An undefined number can generate apparent precision and wrong decisions. The visualization should facilitate comparison with goal, history, and tolerance range. Alerts are most useful when linked to a planned action and a person capable of executing it.

Automation also creates risks. Vendor lock-in, integration failure, unavailability, improper access, and data loss need to be considered. Authentication controls, backups, segregation of duties, and user review must keep up with the growth of the system. ISO 31000:2018 recommends integrating risk into governance and decision-making. In a digital environment, security and continuity are not separate from the operation.

Digital maturity can be developed in stages. First, records and routines are stabilized; then, processes are connected; finally, predictive analytics can support forecasting and scenarios. This

[2] The OECD analyzes digitalization as organizational transformation that involves technology, skills, data, security and changes in management practices.

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sequence reduces the temptation to apply algorithms on fragile foundations. Wamba et al. (2017) associate analytical capabilities with performance through dynamic capabilities, indicating that technology needs to be absorbed by the organization. The value lies in the improved decision, not in the volume of data.

4. Demand, capacity and quality forecasting

Demand forecasting should be treated as an estimate subject to error. Moving averages, exponential smoothing, and seasonal models help structure history, but changes in price, weather, calendar, and behavior can break patterns. The forecast should record horizon, range, and observed error. The greater the uncertainty, the more important it becomes to combine data with market knowledge, without allowing opinion to replace later evaluation.

Capacity represents the practical limit of meeting demand with available resources. People, equipment, space, suppliers, and time can form different bottlenecks throughout the day or production cycle. Planning needs to distinguish nominal capacity from effective capacity. Constant maximum occupancy can increase queues, failures, and wear. Selective time off work as a protection against variability and must be justified by the criticality of the service.

Quality must be translated into observable requirements. Service time, product compliance, temperature, presentation, order accuracy, and complaint resolution are examples of measurable dimensions. Satisfaction surveys add insight, but do not replace operational data. Responses need to be analyzed by trend, segment, and cause. A high average can hide a serious failure concentrated in a certain process.

Food waste shows why operation and sustainability meet. The United Nations Environment Programme estimated 1.05 billion tons of food wasted in 2022 in households, food services, and retail. The food service sector accounted for about 290 million tons (UNEP, 2024). The global figure does not measure a specific company, but highlights the relevance of safe forecasting, portioning, storage, and repurposing.[3]

The operational response must combine prevention and learning. Technical sheets, real yield, loss by stage, returns and sales by time help to locate variation. Control cannot encourage reduction that compromises safety or quality. Environmental and economic indicators must be read together, because a loss represents raw materials, labor, energy, water and margin. Sustainable improvement occurs when cause and consequence remain visible.

[3] The global total estimated by UNEP covers households, food services and retail. It does not represent a rate automatically applicable to a company.

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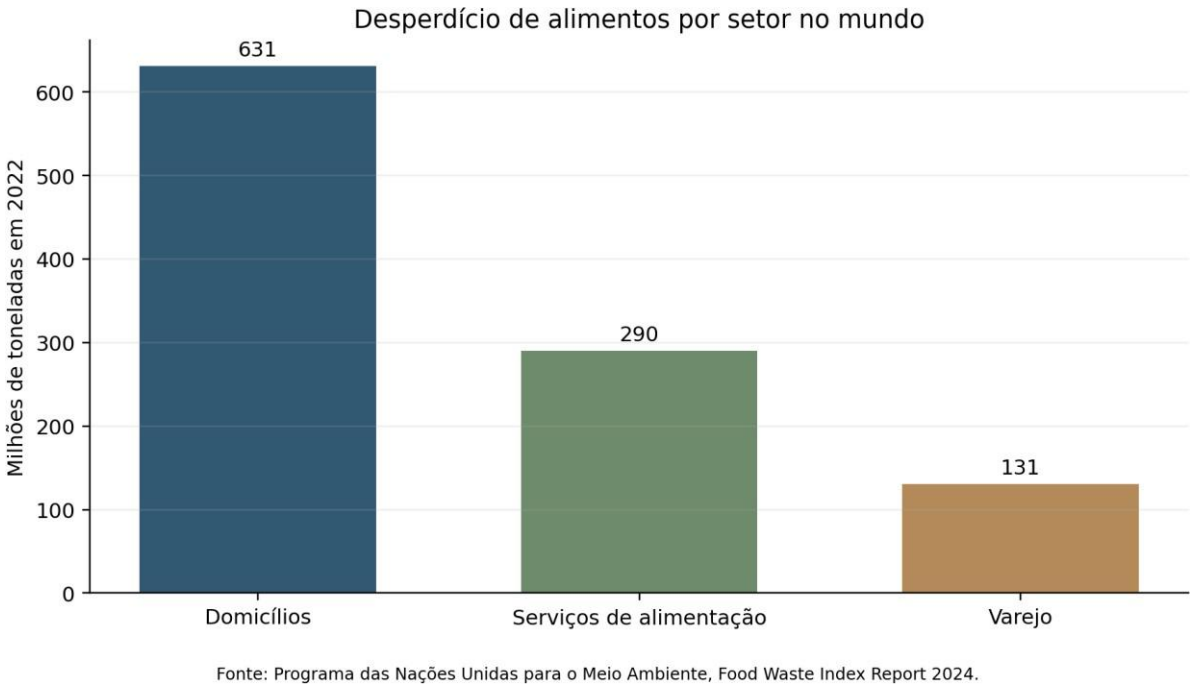


Figure 1. Food waste by sector in the world in 2022. Source: UNEP (2024).

5. Relationship, negotiation and commercial performance

Customer relationships are not limited to promotional communication. It depends on the coherence between promise, delivery, problem solving, and responsible use of data. Segmentation can guide supply and service, as long as criteria are transparent and do not produce treatment incompatible with the strategy. Relationship systems must record relevant history and allow continuity, avoiding knowledge remaining with only one person.

Retention should be analyzed along with economic contribution. Revenue growth can hide excessive discounts, cost of service, or default. Recurrence, frequency, ticket, margin, and complaint metrics offer a more complete picture. Interpretation requires caution, as high-volume customers can generate concentration and bargaining power. A healthy portfolio combines value, diversity, and service capacity.

Negotiations with suppliers and financial institutions require preparation. Projected cash flow, compliance history, alternatives, and decision limits increase the quality of the agreement. Nominal rate does not summarize financial cost; guarantees, fees, term, grace period, and refinancing risk need to be compared. With suppliers, the lowest price may be less relevant than reliability, flexibility, and verifiable quality.

Business partnerships must have an objective, counterpart, deadline, and indicator. The absence of these elements transforms cooperation into a vague expectation. Controlled tests allow the evaluation of new channels and campaigns before expansion. Learning needs to be recorded, even when the result is negative. Experimental discipline reduces the continuity of actions based only on

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perception or initial enthusiasm.

Commercial performance gains consistency when it is connected to operational capacity. Promoting an item out of stock, selling a deadline that is incompatible with cash, or attracting demand above capacity generates reputational cost. Sales and operations planning creates a forum to reconcile forecasting, supplies, production, and finances. Christopher (2016) highlights that competition occurs between chains, and not just between isolated companies. The promise to the customer depends on the coordination of the entire network.

6. Risk, controls and organizational learning

Managerial risk corresponds to the effect of uncertainty on objectives. The definition of ISO 31000:2018 avoids limiting risk to negative events and allows opportunities to be considered. The process includes identification, analysis, evaluation, treatment, monitoring, and communication. In smaller companies, the structure can be simple, as long as the criteria are clear. A matrix without responsible parties and deadlines does not change exposure.[4]

Internal controls must protect assets and reliability without paralyzing the operation. Authorizations, reconciliations, inventories, limits, and segregation of duties respond to specific risks. When the team is lean, segregation can be complemented by independent review, exception reports, and rotation. The design must consider probability, impact, and cost. Excessive control also creates risk of delay and parallel informality.

Scenarios increase the preparation for events that do not appear in recent history. Falling demand, supplier interruption, interest rate increase, system failure, or absence of critical personnel can be simulated. Each scenario must make explicit assumptions, signals, and responses. The purpose is not to predict the future exactly, but to test weaknesses and reduce improvisation. Financial reserves and operational alternatives need to be proportional to the time needed to react.

Learning depends on recording nonconformities and near failures without encouraging concealment. An exclusively punitive culture reduces the quality of information. Analysis must differentiate error, conscious deviation, process failure, and insufficient training. The answer may involve redesign, training, or accountability, depending on the cause. The focus is to prevent recurrence, preserving ethical and safety standards.

The final integration occurs when strategy, process, data, and behavior reinforce each other. Indicators guide attention, but judgment remains necessary. Systems accelerate flow, but do not replace responsibility. Procedures reduce variation, but need to evolve. Mature management combines discipline and adaptation, measures what matters, and recognizes the limits of evidence.

[4] ISO 31000:2018 provides guidelines and does not establish a certification system or a mandatory risk matrix.

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This balance sustains growth without losing control.

Conclusion

Management integration is necessary because processes, inventories, cash, sales, and quality share resources and consequences. Efficiency alone does not guarantee overall results.

The process approach makes responsibilities, inputs, decisions, and outputs visible. Standardization should focus on critical activities and allow for controlled handling of exceptions. Inventories need to balance availability, capital, expiration, and risk of disruption. Classifications and models are analytical supports, not substitutes for reliable physical data and parameter review.

Working capital must be analyzed along with profitability. Deadlines, purchases, losses, and collection alter the cash cycle and can limit growth even when there is demand.

Digitalization produces value when it solves defined problems and uses governed registries. Systems built on fragile processes amplify inconsistencies and dependencies.

Indicators must have a formula, origin, periodicity, and person in charge. Dashboards only support decisions when they allow you to trace deviations to operational facts and concrete answers.

Sustainable business relationships depend on promises that are compatible with capacity and margin. Negotiation must consider total cost, risk, and continuity, not just price or volume. It is concluded that smaller companies can develop robust control without reproducing excessive structures. The decisive element is the coherence between strategy, process, information, people, and learning.

Referências

CHRISTOPHER, M. Logistics and supply chain management. 5. ed. Harlow: Pearson, 2016.

ISO. ISO 9001:2015. Quality management systems: requirements. Geneva: International Organization for Standardization, 2015.

ISO. ISO 31000:2018. Risk management: guidelines. Geneva: International Organization for Standardization, 2018.

IVANOV, D.; DOLGUI, A. A digital supply chain twin for managing the disruption risks and resilience in the era of Industry 4.0. Production Planning and Control, v. 32, n. 9, p. 775 a 788, 2021. DOI: 10.1080/09537287.2020.1768450.

KOUMANAKOS, D. P. The effect of inventory management on firm performance. International Journal of Productivity and Performance Management, v. 57, n. 5, p. 355 a 369, 2008. DOI: 10.1108/17410400810881827.

OECD. The digital transformation of SMEs. Paris: OECD Publishing, 2021. DOI: 10.1787/bdb9256a-en.

SLACK, N.; BRANDON JONES, A.; BURGESS, N. Operations management. 10. ed. Harlow: Pearson, 2022.

UNEP. Food Waste Index Report 2024: think eat save, tracking progress to halve global food waste. Nairobi: United Nations Environment Programme, 2024.

WAMBA, S. F. et al. Big data analytics and firm performance: effects of dynamic capabilities. Journal of Business Research, v. 70, p. 356 a 365, 2017. DOI: 10.1016/j.jbusres.2016.08.009.

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