

## **Re-Engineering Business Processes Amidst the Emergence of Small Business Management in Uzbekistan**

***Ivatov Irisbek***

*Professor of Department Social Sciences and Informatics National institute of Fine Art and Design  
named after K.Behzod, Uzbekistan, Tashkent*

***Allayeva Sitora Azizmurot kizi***

*Bachelor's degree student of Faculty of Art Studies and Museology Management (Art Management  
and Gallery Work) Program National institute of Fine Art and Design named after K.Behzod,  
Uzbekistan, Tashkent*

**Abstract.** In Uzbekistan's transitioning economy, small and medium-sized enterprises (SMEs) play a pivotal role in driving growth, employment, and innovation. However, many SMEs lack the methodological frameworks to re-engineer their business processes when adopting innovative technologies. This study examines the factors compelling SMEs in Uzbekistan to undertake business process reengineering (BPR), analyzes the current state of BPR implementation, and proposes a structured framework for effective re-engineering in these enterprises.

**Key words:** Business process reengineering; Small and medium-sized enterprises (SMEs); Uzbekistan; Innovation adoption; Process optimization; Institutional environment; Cluster development.

### **1. Introduction**

Small and medium-sized enterprises (SMEs) are widely recognized as the backbone of a modern market economy, contributing substantially to gross domestic product (GDP), employment, and innovation. In Uzbekistan, as of early 2022, SMEs accounted for approximately 56.0% of GDP and employed 78.5% of the national workforce. Despite this significant economic footprint, Uzbek SMEs face structural challenges in re-engineering their business processes—especially when integrating new technologies—owing to limited methodological support, inadequate managerial expertise, and underdeveloped institutional environments.

Since Uzbekistan embarked on market reforms in the early 1990s, its economy has shifted from a predominantly state-controlled system to one in which private entrepreneurship and SMEs occupy an ever-larger share of economic activity. By 2000, SMEs contributed roughly 25% of GDP; by 2022, their share had more than doubled. Globally, SMEs in advanced economies account for 50–70% of employment and up to 70% of GDP (OECD, 2020). In Uzbekistan, the state has set an ambitious target: by 2026, half of the working-age population should be engaged in SME activities.

A key component of SME growth is the capacity to re-engineer business processes—systematically redesigning core operations to achieve dramatic improvements in performance metrics such as cost, quality, service, and speed (Hammer & Champy, 1993). In large enterprises, BPR initiatives often benefit from dedicated departments, formalized methodologies, and access to external consultants.

However, SMEs typically lack the financial resources, trained personnel, and structured frameworks necessary for BPR, particularly when implementing innovative technologies (Kuznetsov, 2018).

## 2. Methods

A mixed-methods approach was employed, encompassing a systematic literature review, secondary statistical analysis, and illustrative case comparisons.

**2.1. Literature Review** We searched electronic databases (Web of Science, Scopus, JSTOR) for keywords such as “business process reengineering,” “SMEs,” “innovation adoption,” and “Uzbekistan.” Over fifty peer-reviewed articles, government reports (e.g., State Statistics Committee of the Republic of Uzbekistan, 2022), and World Bank publications were analyzed to identify:

- Global best practices in SME-level BPR;
- Barriers to innovation in resource-constrained enterprises; and
- Institutional frameworks supporting SME development.

**2.2. Statistical Data Analysis** Secondary data covering 2000–2022 were obtained from the State Committee of the Republic of Uzbekistan on Statistics. Key metrics included:

- SME contributions to national GDP;
- Employment shares of micro, small, and medium firms;
- Number of newly registered SMEs; and
- Sectoral breakdown (e.g., manufacturing, services).

Descriptive statistics (percentages, growth rates) were calculated to trace trends in SME performance and identify periods of rapid BPR-related technology adoption (e.g., 2019–2022).

**2.3. Case Illustrations** Three SME case studies (two in metallurgy; one in the service sector) were collected from trade-association reports and interviews with enterprise managers (conducted March–May 2023). These cases illustrate real-world examples of partial BPR attempts, technology integration challenges, and managerial limitations.

## 3. Results

### 3.1. SME Economic Impact in Uzbekistan

- **GDP Contribution:** SME share of GDP rose from 25% (2000) to 56% (2022). Growth accelerated after 2016, when banking reforms expanded access to credit for small firms (State Statistics Committee, 2022).
- **Employment:** By mid-2022, SMEs employed 78.5% of Uzbekistan’s working population. Micro-enterprises (single-proprietorships) accounted for 7.56 million workers, while micro and small enterprises employed an additional 2.43 million (State Statistics Committee, 2022).
- **Enterprise Counts:** As of January 1, 2022, the number of registered SMEs reached 221.1 thousand—an increase of over 30% versus 2017—underscoring rapid entrepreneurial growth spurred by tax incentives and simplified registration processes.

### 3.2. Drivers of Business Process Reengineering

**3.2.1. Competitive Pressures and Market Dynamics** Globalization, technological innovation, and frequently shifting consumer preferences force SMEs to optimize processes to remain viable. Metallurgical firms, for instance, must balance legacy production lines with modern lean-manufacturing (5S, just-in-time) to control costs and improve quality. Service SMEs, especially in urban centers, face intense competition in tourism, hospitality, and IT outsourcing, prompting process redesigns to enhance customer experience and operational agility.

**3.2.2. “Economic Freedom” and Institutional Environment** SMEs in Uzbekistan benefit from a more liberal entrepreneurial environment than large state-owned enterprises, which remain heavily dependent on government directives. The absence of strict ownership-management separation allows

SME owners to rapidly reassign roles, bypass lengthy approval hierarchies, and implement process changes swiftly. However, inconsistent enforcement of intellectual property and limited availability of standardized BPR methodologies impede systematic re-engineering.

**3.2.3. Technological Adoption** Digitalization—ranging from basic accounting software to advanced ERP (Enterprise Resource Planning) systems—serves as a primary catalyst for BPR. However, only 18% of surveyed SMEs ( $n = 120$ ) in Tashkent and Samarkand reported using cloud-based management platforms in 2022 (Industry Association of Small Businesses, 2023). In metallurgy, 12% had at least partially automated quality-control workflows; in services, around 25% used digital CRM (Customer Relationship Management) tools.

### 3.3. Barriers to Effective BPR in SMEs

#### 3.3.1. Resource Constraints

- **Financial Limitations:** Over 60% of microbusinesses cited limited capital as their greatest challenge when upgrading production lines (SME Development Fund, 2023). Subsidized loans exist, but application procedures often deter smaller operators.
- **Human Capital Deficits:** Only 22% of SME managers have formal training in operations management, and fewer than 10% have participated in dedicated BPR workshops (Ministry of Economy, 2022). Consequently, misaligned process-mapping efforts and poorly defined performance metrics are common.

#### 3.3.2. Insufficient Methodological Support

- **Lack of Standardized Frameworks:** No national guidelines for BPR in SMEs have been ratified; most enterprises rely on ad hoc, consultant-driven interventions. In the metallurgical sector, methodological support for re-engineering major production steps is virtually nonexistent.
- **Institutional Gaps:** While business incubators and technology parks have emerged in Tashkent and Fergana, their focus has been on start-up financing rather than process optimization.

#### 3.3.3. Technology Integration Challenges

- **Incremental vs. Radical Change:** Many SMEs choose incremental automation—installing a single CNC (Computer Numerical Control) machine—rather than undertaking holistic BPR. This siloed approach often results in sub-optimal performance and failure to capture broader efficiency gains.
- **Limited Digital Literacy:** Only 14% of SME employees report daily use of productivity software such as ERP or SCM (Supply Chain Management) tools (Chamber of Commerce, 2022). Absent baseline IT skills, full-scale digital transformation stalls.

## 4. Discussion

### 4.1. Theoretical Implications

Our findings echo global BPR literature indicating that process re-engineering can drive significant performance improvements if aligned with organizational culture and systemic support (Hammer & Stanton, 1995). However, in the Uzbek SME context, theoretical models (e.g., Hammer & Champy's "clean-sheet" approach) require adaptation to resource-constrained settings. For instance, rather than comprehensive "start-from-scratch" redesigns, "lean-plus" incremental methods may better suit SMEs that can only afford phased investments (Kotter, 1996).

### 4.2. Toward a Tailored BPR Framework for Uzbek SMEs

Based on both literature and field cases, we propose a three-phased, SME-centric BPR methodology:

#### 1. Diagnostic Phase

- **Process Mapping Workshops:** Convene multi-disciplinary teams (owner, line managers, key operators) to chart "as-is" workflows using simple tools (e.g., flowcharts, value stream maps).

- **Key Performance Indicator (KPI) Identification:** Define 3–5 critical metrics—e.g., order-to-delivery time, cost per unit, defect rate, customer satisfaction any one—aligned with strategic goals.
- **Technology Gap Analysis:** Audit existing ICT (Information and Communications Technology) infrastructure, identify quick wins (e.g., accounting software upgrades, basic CRM).

## 2. Redesign Phase

- **“Lean-Plus” Pilot Projects:** Select a high-impact subprocess (e.g., raw-material procurement in metallurgy, customer onboarding in services) for pilot redesign.
- **Adoption of Low-Cost Technologies:** Partner with local ICT providers to procure modular ERP or SCM modules on subsidized pricing. For example, Tashkent’s Technology Park offers low-interest leases for SME-scaled software.
- **Stakeholder Training:** Implement on-site workshops focusing on process-thinking—covering root-cause analysis (e.g., Ishikawa diagrams), basic problem-solving (e.g., PDCA cycle), and software operation.

## 3. Implementation & Continuous Improvement Phase

- **Phased Roll-Out:** Gradually expand the pilot redesign to other processes, ensuring lessons learned are incorporated.
- **Performance Monitoring:** Use cloud-based dashboards (e.g., Google Data Studio, Zoho Analytics) to track KPIs in real time. Establish monthly performance review meetings.
- **Institutional Feedback Loop:** Encourage SMEs to share success stories and challenges through regional SME associations. This “horizontal knowledge transfer” can accelerate adoption across clusters.

## 4.3. Policy and Institutional Recommendations

**4.3.1. Institutionalize BPR Training Programs** The Ministry of Economy, in collaboration with the Agency for Support to Young Entrepreneurs, should develop standardized BPR curricula—covering process mapping, basic lean tools, and technology integration. These programs must be subsidized and offered in regional training centers (e.g., Samarkand SME Hub).

**4.3.2. Create Sectoral BPR Guidelines** Industry associations (e.g., Uzbek Metallurgical Union) must co-develop sector-specific BPR templates. For instance, a metallurgical BPR guideline could specify recommended machinery-upgrades, workforce cross-training, and quality-control checklists.

**4.3.3. Strengthen Digital Infrastructure** Expand the coverage of “Digital Roads” (Uzbekistan’s national broadband initiative) to ensure rural SMEs can access cloud-based management tools. Offer tax credits for SME investments in ICT hardware and software.

**4.3.4. Promote Cluster Development** Encourage formation of geographically concentrated SME clusters—particularly in textiles (Namangan), metallurgy (Navoiy), and agribusiness (Andijan)—to pool resources for joint BPR consulting services, shared warehousing, and bulk ICT licensing discounts.

## 4.4. Limitations and Future Research

Our study is limited by reliance on secondary data and a small number of qualitative cases ( $n = 3$ ). Future research should include a broader cross-section of SMEs, incorporate quantitative surveys (e.g., Likert-scale assessments of BPR readiness), and evaluate the impact of pilot BPR interventions over longer time horizons (2–3 years).

## 5. Conclusion

In Uzbekistan’s evolving market economy, small businesses face mounting pressures—from increasing domestic competition to the imperatives of digital transformation. Our analysis underscores that business process re-engineering is not merely a theoretical concept but a practical

necessity for SME survival and growth. While SMEs in Uzbekistan have demonstrated remarkable entrepreneurial dynamism—evidenced by their rapidly rising GDP and employment shares—they continue to grapple with resource constraints, skill gaps, and the absence of standardized BPR methodologies.

To achieve sustainable competitiveness, SMEs must embrace a tailored, phased approach to BPR—one that emphasizes initial diagnostic assessments, incremental redesigns leveraging low-cost technologies, and continuous performance monitoring. Equally crucial is the development of institutional support mechanisms—ranging from BPR training academies to sector-specific guidelines and cluster-based initiatives.

By unlocking the latent potential of Uzbek SMEs through systematic business process re-engineering, policymakers and practitioners can accelerate innovation, foster resilient supply chains, and ultimately solidify SMEs as the architects of Uzbekistan's next stage of economic transformation.

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