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# Resilience of Self-Service Networks in a Turbulent Economy: Risk Management in Automated Photo Studios

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**Abstract:** Automated self-service solutions are often perceived as “small businesses with hardware,” where most attention is given to equipment and location, while risk management and resilience remain secondary concerns. However, in conditions of economic turbulence, rising resource costs, and shifting consumer behavior, it is risk management that determines whether a network of automated photo studios can survive and scale.

This article examines the practical experience of building and developing a photo studio network in the United States, with expansion into Europe. It outlines the key types of risks (location, operational, technological, regulatory, and market) as well as fintech tools for mitigating them: a portfolio approach to location management, scenario analysis, discipline in unit economics, and the development of a technology platform resilient to external shocks.

**Keywords:** self-service; automated photo studios; risk management; business resilience; fintech approach; unit economics; USA; Europe

## Introduction: Why Risk Management Matters Even for a “Photo Booth Business”

Up to a certain scale, an automated photo studio appears to be a simple business: find a high-traffic location, rent space, install an equipped booth, and connect payment processing. Risk is perceived narrowly — “the equipment may break down or rent may not pay off.”

In practice, as the network grows and the external environment becomes more complex, the picture changes. Business resilience is affected by:

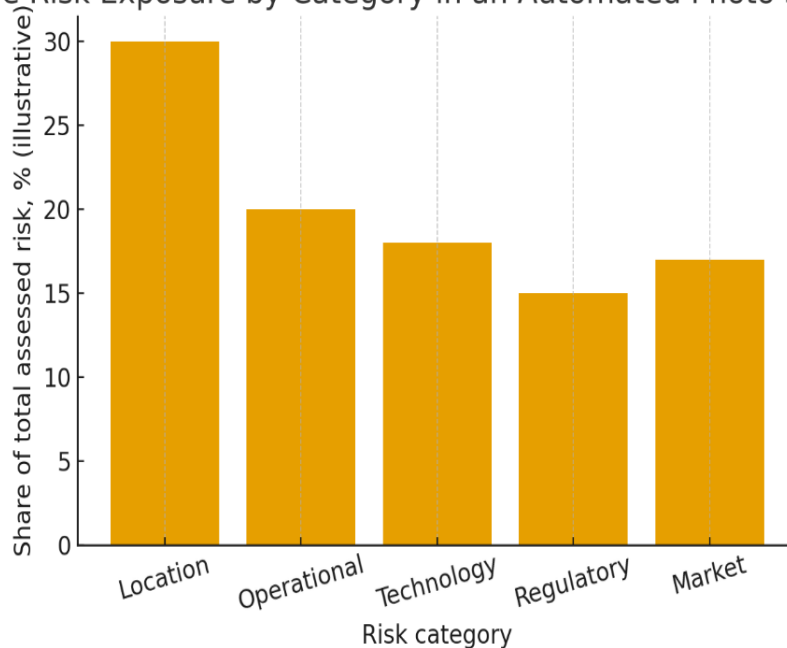
- fluctuations in rental rates and changes in lease terms;

- local crises and traffic declines in specific regions;
- new regulatory requirements for personal data processing or ID photo standards;
- technological failures disrupting multiple studios simultaneously;
- changes in payment infrastructure and transaction fees.

The experience of Artjoms Blazko, combining product management with a financial and credit background, shows that without systematic risk management, a network operating across 30+ regions and expanding into Europe inevitably faces localized crises.

For this reason, the automated photo studio project was designed from the outset not merely as a set of technically functioning machines, but as a portfolio of managed risks.

Illustrative Risk Exposure by Category in an Automated Photo Studio Network



## 1. Risk Map of a Self-Service Network

To manage risk, it must first be clearly defined. In the context of automated photo studios, five key risk groups can be identified.

### 1.1. Location Risk

This is associated with the choice of a specific site: shopping mall, business district, campus, or government institution. It is influenced by:

- foot traffic and its seasonality;
- audience profile (how often they need ID photos or content);
- intensity of competition from traditional studios and other automated solutions;
- stability of the venue itself (renovation plans, ownership changes).

### 1.2. Operational Risk

This includes:

- service quality and response time to incidents;

- availability of standards and procedures for teams;
- errors in managing relationships with landlord partners.

### 1.3. Technological Risk

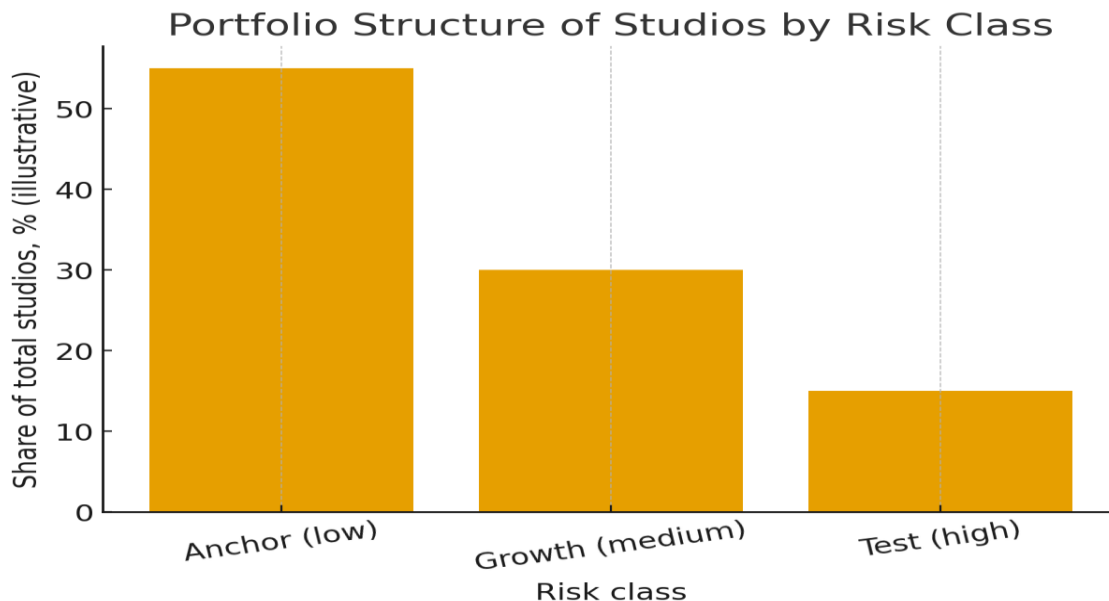
- equipment failures (camera, lighting, printer);
- issues with network connectivity and payment gateways;
- software vulnerabilities affecting service availability.

### 1.4. Regulatory Risk

- requirements for personal data protection and storage;
- standards for photographs used in official documents;
- restrictions related to equipment placement in certain types of venues.

### 1.5. Market Risk

- decline in effective consumer demand; of credit resources.
- shifts in demand structure (growth of “home-generated content” vs. formal document photos); Such a risk map enables the application of fintech-inspired tools: scoring models, scenario analysis, and risk limits.
- changes in payment provider fees and the cost



## 2. Portfolio Approach: The Network as a Set of Managed Positions

Experience in commercial lending fosters a habit of viewing a business as a portfolio of assets with varying levels of risk and return. In a photo studio network, this approach is applied to locations and regions.

### 2.1. Classification of Locations by Risk Profile

Each studio is evaluated based on:

- traffic and revenue history;
- performance stability;
- sensitivity to price changes;
- ease durability.

Based on these factors, locations are classified into:

- core — stable performance and high predictability;
- growth — strong potential but not yet fully established;
- test — experimental formats and non-standard locations.

### 2.2. Portfolio Limits and Balance

The portfolio approach involves setting limits:

- maximum share of test locations;

- minimum share of core locations in total revenue;
- caps on investments in experimental regions.

This creates a “safety net”: even if some test studios underperform, the overall network remains stable due to core and growth locations.

## 3. Unit Economics as an Early Risk Detection Tool

Unit economics is another fintech tool that enables risk management at the level of an individual studio.

For each location, the following metrics are regularly calculated:

- revenue for the period;
- operating costs (rent, connectivity, service, payment fees);
- gross and operating margins;
- payback period.

Based on these, “acceptable ranges” are defined. If a studio consistently:

- falls below minimum margin thresholds;
- shows worsening payback dynamics;
- experiences cost growth without revenue increase,

it is flagged for detailed analysis:

- whether pricing or service format adjustments are needed;
- whether lease terms can be improved;
- whether relocation or shutdown is justified.

Thus, unit economics becomes an early warning indicator, and decisions on closing or relaunching locations are data-driven rather than reactive.

#### **4. Scenario Analysis: What If Things Don't Go as Planned**

Scenario analysis is widely used in credit portfolio and investment management and is equally applicable to self-service networks.

For the photo studio network, three base scenarios are modeled:

- base case — moderate growth in traffic and revenue with controlled costs;
- optimistic case — accelerated growth driven by regional expansion and successful partnerships;
- stress case — declining traffic, rising rent and service costs, and tighter regulation.

For each scenario, the following are assessed:

- revenue and margin dynamics;
- need for additional capital;
- impact on payback periods and investment returns;
- required mitigation measures (closing certain locations, renegotiating leases, shifting focus to more profitable regions).

This approach enables proactive planning rather than reactive crisis management.

#### **5. Technology Platform as Protection Against Operational and Technological Risks**

One of the most powerful risk mitigation tools is a unified technology platform connecting all studios.

##### **5.1. Centralized Monitoring and Control**

The platform enables:

- real-time equipment status tracking;
- visibility into error rates and failures across regions and individual studios;

- rapid deployment of service teams to locations where downtime has the greatest impact.

##### **5.2. Updates and Security**

Centralized software updates reduce risks related to:

- outdated versions vulnerable to failures or attacks;
- inconsistencies in system behavior across regions.

Controlled version management is a fintech standard successfully applied to self-service infrastructure.

##### **5.3. Data for Improving Risk Models**

As the network grows, so does the volume of data on:

- traffic;
- failures;
- revenue;
- responses to pricing and scenario changes.

This data is used to continuously refine location scoring models, margin thresholds, and portfolio limits.

#### **6. Regulatory and Country Risk: A Feature of International Expansion**

Expanding the network beyond the United States into Europe introduced additional layers of regulatory and country risk.

Across countries, differences include:

- personal data protection rules;
- requirements for ID photographs;
- regulations on equipment placement in public spaces;
- payment provider fee structures.

Financial and analytical expertise enables:

- early assessment of how regulatory changes impact revenue and cost structures;
- incorporation of currency fluctuations into payback calculations;
- development of reserves and risk mitigation mechanisms.

Thus, international risk becomes not an “unexpected challenge,” but a manageable component of the overall model.

## Conclusion

The resilience of a self-service network in a turbulent economy is neither accidental nor a matter of luck. It is the result of systematic risk management practices, many of which originate from fintech and commercial lending.

The experience of managing an automated photo studio network demonstrates that:

- a risk map should be as clearly defined as a financial plan;
- a portfolio approach to locations and regions helps balance growth and stability;
- unit economics and scenario analysis turn intuition into data-driven decisions;
- a technology platform reduces operational and technological risks;
- regulatory and country risks must be incorporated from the outset of international expansion.

This approach allows even a niche self-service project to be treated as a mature, manageable business — capable not only of surviving uncertainty, but also of scaling while remaining transparent to partners and investors.

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