

Risk Management Strategy Based on the Concept of Digital Skills in Guangdong University of Finance and Economics, Guangzhou, China

Shi Yuquan¹ and Wassana Sangpum²

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Abstract

The research objectives were 1) to study the level of risk management and digital skills at Guangdong University of Finance and Economics, Guangzhou, China, 2) to develop a risk management strategy based on the concept of digital skills at Guangdong University of Finance and Economics, and 3) to evaluate the proposed risk management strategy. The sample consisted of 304 full-time teachers from Guangdong University of Finance and Economics, selected by simple random sampling. The research instruments included a questionnaire, a focus group discussion guide, and an evaluation form. The data were analyzed using frequency, percentage, mean, and standard deviation.

The results revealed that 1) The overall level of risk management was high ($M = 3.81$), while the digital skills dimensions ranged from middle to high levels. Among the risk management dimensions, Risk Control received the highest mean score ($M = 4.03$), while Data Processing Skill and Digital Tool Operation Skill jointly received the highest mean score among the digital skills dimensions ($M = 3.54$). 2) The questionnaire findings and expert focus group discussion identified key areas requiring improvement, which were subsequently analyzed using the SWOT and TOWS frameworks. Based on these findings, a risk management strategy grounded in the concept of digital skills was developed, emphasizing curriculum enhancement,

¹ Master of Faculty of Education, Dhonburi Rajabhat University. Email: 6822031018@dru.ac.th

² Faculty of Education, Dhonburi Rajabhat University.

faculty professional development, digital resource support, industry–university collaboration, and institutional risk governance. 3) The proposed Risk Management Strategies Based on Digital Skills consist of four integrated strategies: Strengthening Risk Identification through Digital Intelligence; Enhancing Faculty Digital Competencies and Risk Assessment Capabilities; Advancing Digital Risk Control and Governance; and Establishing a Continuous Improvement and Organizational Learning System.

Keywords: Risk Management, Digital Skills, Strategy

Introduction

The integration of digital technologies into higher education has fundamentally reshaped university governance, teaching practices, and institutional management. Beyond improving teaching efficiency, digital transformation has introduced new organizational challenges related to information security, technology governance, data management, and institutional resilience. Consequently, universities are expected not only to strengthen digital infrastructure but also to establish effective risk management mechanisms that enable faculty members to respond to increasingly complex digital environments. Recent studies have emphasized that digital skills have become a critical resource supporting organizational innovation, educational quality, and sustainable institutional development (van Laar et al., 2017; Vuorikari et al., 2022; Setyadi et al., 2025).

Despite growing attention to digital transformation, existing studies have mainly examined digital skills and risk management as two separate research domains. Research on digital competence has primarily focused on technology adoption, digital literacy, and teaching innovation, whereas studies on risk management have concentrated on governance structures, operational control, and organizational resilience (Nurhas et al., 2022; Khaw & Teoh, 2023). Comparatively little

attention has been paid to how faculty members' digital skills contribute to institutional risk management within higher education. At Guangdong University of Finance and Economics, digital technologies have been increasingly integrated into teaching, research, and administrative processes. However, differences in teachers' digital competence, inconsistent application of digital technologies, and the absence of a systematic strategy linking digital skills with risk management continue to affect the effectiveness of institutional development.

In response to this gap, the present study investigates the current level of risk management and digital skills among faculty members at Guangdong University of Finance and Economics and develops a risk management strategy based on the concept of digital skills. By integrating needs assessment with strategic analysis, the study seeks to provide practical guidance for strengthening institutional governance, supporting faculty development, and promoting the sustainable implementation of digital transformation in higher education.

Research Objectives

1. To study the level of risk management and digital skills at Guangdong University of Finance and Economics.
2. To develop a risk management strategy based on the concept of digital skills at Guangdong University of Finance and Economics.
3. To evaluate risk management and digital skills at Guangdong University of Finance and Economics.

Scope of the Study

This study focused on risk management and digital skills among full-time teachers at Guangdong University of Finance and Economics, Guangzhou, China. Risk management covered four dimensions: risk identification, risk assessment, risk control, and risk optimization. Digital skills covered six dimensions: data processing skill, algorithm application skill, digital tool operation skill, data security awareness skill,

digital compliance skill, and interdisciplinary integration skill. The study also covered the development and expert evaluation of risk management strategies based on the concept of digital skills.

Expected Benefits of the Research

1. Benefits for Students

The findings may support the development of teaching and practical learning activities that integrate digital skills with risk management. Students may gain improved access to digital risk-management tools, real-world cases, and data-driven learning experiences that strengthen their professional competencies and readiness for employment in finance-related fields.

2. Benefits for Teachers

The proposed strategies may provide guidance for strengthening teachers' digital competencies, risk-identification abilities, data-security awareness, and application of digital technologies in teaching and research. They may also support professional development, interdisciplinary collaboration, and more effective use of digital resources.

3. Benefits for the University

The findings may assist Guangdong University of Finance and Economics in improving digital governance, faculty development, institutional risk management, and collaboration with external organizations. The proposed strategies may also provide a practical foundation for supporting sustainable digital transformation and strengthening institutional resilience.

Research Methods

1. Population

The population consisted of 1,280 full-time teachers at Guangdong University of Finance and Economics, Guangzhou, China.

2. Sample Group

A total of 304 teachers were selected using simple random sampling based on Yamane's (1973) formula with a 5% margin of error. Seven experts in educational management, digital education, and risk management participated in the focus group discussion, while five experts evaluated the proposed strategies.

3. Research Instruments

The research instruments included a structured questionnaire, a focus group discussion guide, and an expert evaluation form. The questionnaire was validated by three experts, with IOC values ranging from 0.67 to 1.00. A pilot test involving 30 respondents produced an overall Cronbach's alpha coefficient of 0.86, indicating good internal consistency.

4. Data Collection

After permission to collect data had been obtained, the questionnaire was administered to the selected teachers. Participation was voluntary, and the participants were informed of the purpose of the study. Following the questionnaire survey, a focus group discussion was conducted to obtain qualitative information for strategy development. The developed strategies were subsequently evaluated using an expert evaluation form.

5. Data Analysis

Quantitative data were analyzed using frequency, percentage, mean, and standard deviation. Mean scores were interpreted using the following criteria: 4.51–5.00 = Highest, 3.51–4.50 = High, 2.51–3.50 = Middle, 1.51–2.50 = Low, and 1.00–1.50 = Lowest. For the classification of the digital skills dimensions in Table 2, dimensions rated at the High or Highest level were classified as strengths (S), whereas dimensions rated at the Middle, Low, or Lowest level were classified as weaknesses (W).

Qualitative data obtained from the focus group discussion were analyzed using content analysis and categorized into strengths, weaknesses, opportunities, and threats through SWOT analysis. The TOWS matrix was then used to formulate the proposed risk management strategies. The expert evaluation results concerning the

suitability and feasibility of the proposed strategies were analyzed using mean and standard deviation.

Conceptual Framework

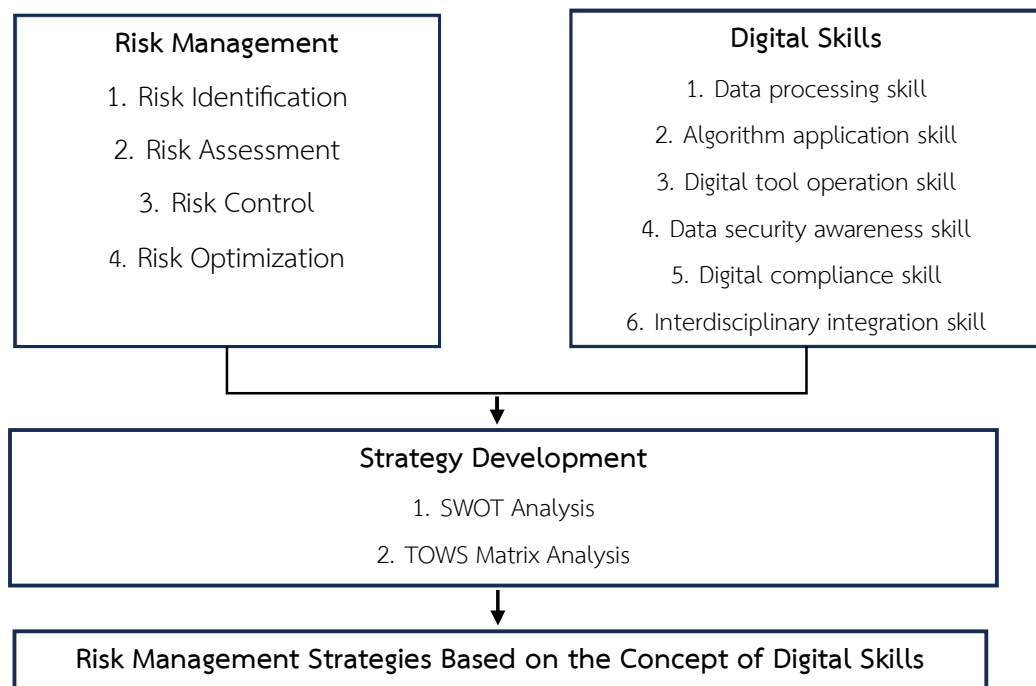


Figure 1 Conceptual Framework

Research Results

1. Objective 1: To study the level of risk management and digital skills at Guangdong University of Finance and Economics.

Table 1 Level of Risk Management at Guangdong University of Finance and Economics (N = 304)

Risk Management Components	Mean	S.D.	Level	Rank
Risk Identification	3.53	0.522	High	4
Risk Assessment	3.80	0.488	High	3
Risk Control	4.03	0.446	High	1
Risk Optimization	3.86	0.471	High	2
Overall	3.81	0.48	High	-

Table 1 presents the level of risk management at Guangdong University of Finance and Economics. The overall implementation was rated at a high level ($M = 3.81$, $SD = 0.48$). Among the four dimensions, Risk Control recorded the highest mean score ($M = 4.03$, $SD = 0.446$), followed by Risk Optimization ($M = 3.86$, $SD = 0.471$), Risk Assessment ($M = 3.80$, $SD = 0.488$), and Risk Identification ($M = 3.53$, $SD = 0.522$). At the indicator level, “Digital tools improve digital skills” received the highest mean score ($M = 4.14$), whereas “Identification of risks related to curriculum design promotes digital skills” recorded the lowest ($M = 3.28$). These results highlight the relative strengths and weaknesses across the dimensions and provide a clear basis for formulating targeted strategies for improvement in the next stage of the study.

Table 2 Level of Digital Skills at Guangdong University of Finance and Economics ($N = 304$)

Digital Skills Dimensions	Mean	S.D.	Level	SWOT Result
Data Processing Skill	3.54	0.72	High	S (Strength)
Algorithm Application Skill	3.42	0.75	Middle	W (Weakness)
Digital Tool Operation Skill	3.54	0.70	High	S (Strength)
Data Security Awareness Skill	3.48	0.73	Middle	W (Weakness)
Digital Compliance Skill	3.36	0.76	Middle	W (Weakness)
Interdisciplinary Integration Skill	3.28	0.78	Middle	W (Weakness)

Table 2 presents the level of digital skills at Guangdong University of Finance and Economics. Data Processing Skill and Digital Tool Operation Skill jointly received the highest mean score ($M = 3.54$), followed by Data Security Awareness Skill ($M = 3.48$), Algorithm Application Skill ($M = 3.42$), Digital Compliance Skill ($M = 3.36$), and Interdisciplinary Integration Skill ($M = 3.28$). Data Processing Skill and Digital Tool Operation Skill were rated at a high level and classified as strengths, whereas the remaining four dimensions were rated at a middle level and classified as weaknesses.

These findings were subsequently considered together with the expert focus group findings in the SWOT analysis.

2. Objective 2: To develop a risk management strategy based on the concept of digital skills at Guangdong University of Finance and Economics.

2.1 Key Findings from the Focus Group Discussion

The focus group discussion was conducted with seven experts who were purposively selected based on their knowledge and professional experience in educational management, digital education, risk management, teaching practice, and institutional administration. The expert panel consisted of three educational management scholars or academic experts, two teachers with practical teaching experience, and two middle-level administrators responsible for institutional management and policy implementation. The discussion aimed to obtain in-depth information concerning the strengths, weaknesses, opportunities, and threats related to risk management and digital skills at Guangdong University of Finance and Economics.

Strengths: Experts agreed that the university has established effective risk control mechanisms and digital management systems. Digital platforms and monitoring systems have enhanced operational efficiency and supported data-driven decision-making.

Weaknesses: Risk identification remains relatively weak, particularly in identifying emerging digital risks. The experts also emphasized that faculty members need further improvement in algorithm application, data security awareness, digital compliance, and interdisciplinary integration.

Opportunities: National policies supporting digital transformation, together with advances in artificial intelligence, big data, and digital technologies, provide favorable conditions for improving institutional risk management.

Threats: Rapid technological changes, cybersecurity risks, uneven digital competencies among faculty, and limited institutional resources were identified as major external challenges.

Table 3 Summary of SWOT Analysis

Strengths	Weaknesses
Effective risk control mechanisms	Weak risk identification capability
Strong digital infrastructure	Limited algorithm application competency
Efficient digital monitoring systems	Insufficient data security awareness
Institutional support for digital transformation	Weak digital compliance and interdisciplinary integration
Opportunities	Threats
National digital transformation policies	Rapid technological change
Artificial intelligence and big data	Cybersecurity and data privacy risks
Professional development programs	Uneven digital competencies
Expansion of digital education	Resource constraints

Table 3 summarizes the internal and external factors identified through the focus group discussion. The university demonstrates strong capabilities in risk control and digital infrastructure; however, improvements are still needed in risk identification and advanced digital competencies. Externally, digital transformation policies and emerging technologies provide valuable opportunities, while cybersecurity risks and resource limitations remain important challenges.

Table 4 Summary of TOWS Analysis

Strategy Type	Strategic Direction
SO	Utilize institutional strengths to accelerate digital transformation.
WO	Improve faculty digital competencies and strengthen risk identification.
ST	Reinforce digital governance and institutional resilience.
WT	Establish continuous monitoring and early warning mechanisms.

Based on the SWOT analysis, four strategic directions were formulated using the TOWS matrix. The strategies emphasize leveraging institutional strengths, addressing existing weaknesses, responding to external threats, and utilizing emerging opportunities to improve risk management based on digital skills.

2.2 Overview of the Proposed Strategies

Based on the SWOT and TOWS analyses, four strategies were proposed: (1) strengthening risk identification through digital intelligence, (2) enhancing faculty digital competencies and risk assessment, (3) improving digital risk control and governance, and (4) establishing continuous improvement and organizational learning mechanisms. These strategies provide a systematic framework for enhancing institutional risk management in the context of digital transformation.

3. Objective 3: To evaluate the developed risk management strategy based on the concept of digital skills at Guangdong University of Finance and Economics.

3.1 Results of Suitability and Feasibility Evaluation

Table 5 Results of the Suitability and Feasibility Evaluation of Risk Management Strategies Based on Digital Skills

Strategy	Suitability Mean	S.D.	Level	Feasibility Mean	S.D.	Level
Strategy 1: Strengthening Risk Identification through Digital Intelligence	4.40	0.54	High	4.12	0.60	High
Strategy 2: Enhancing Faculty Digital Competencies and Risk Assessment Capabilities	4.63	0.49	Highest	4.34	0.57	High
Strategy 3: Advancing Digital Risk Control and Governance	4.69	0.43	Highest	4.54	0.50	Highest

Strategy	Suitability Mean	S.D.	Level	Feasibility Mean	S.D.	Level
Strategy 4: Establishing a Continuous Improvement and Organizational Learning System	4.57	0.51	Highest	4.29	0.57	High
Overall	4.57	0.49	Highest	4.32	0.56	High

Table 5 presents the experts' evaluation of the proposed risk management strategies based on digital skills. Strategy 3: Advancing Digital Risk Control and Governance received the highest ratings for both suitability ($M = 4.69$, $SD = 0.43$) and feasibility ($M = 4.54$, $SD = 0.50$). Strategy 1: Strengthening Risk Identification through Digital Intelligence received the lowest ratings, although both suitability and feasibility remained at a high level. The results indicate that the proposed strategies were considered suitable and feasible for implementation.

3.2 Final Risk Management Strategy Based on the Concept of Digital Skills

Table 6 Final Risk Management Strategy Based on the Concept of Digital Skills

Strategies	Sub-strategies
Strategy 1: Strengthening Risk Identification through Digital Intelligence	(1) Establish a digital risk identification and early warning system. (2) Enhance risk awareness among faculty and staff.
Strategy 2: Enhancing Faculty Digital Competencies and Risk Assessment Capabilities	(1) Develop faculty digital competency programs. (2) Strengthen data-driven risk assessment practices.
Strategy 3: Advancing Digital Risk Control and Governance	(1) Improve digital monitoring and control systems. (2) Strengthen cybersecurity and digital governance.
Strategy 4: Establishing a Continuous Improvement and Organizational Learning System	(1) Develop continuous improvement mechanisms. (2) Promote organizational learning and collaboration.

Table 6 presents the final risk management strategy based on digital skills. The framework consists of four major strategies and eight sub-strategies, focusing on risk identification, faculty digital competencies, digital risk control and governance, and continuous improvement. Together, these strategies provide a practical framework for strengthening institutional risk management.

Research Discussion

1. Discussion of the Current Level of Risk Management and Digital Skills

The findings showed that the overall level of risk management at Guangdong University of Finance and Economics was high ($M = 3.81$), with Risk Control receiving the highest mean score and Risk Identification receiving the lowest. The digital skills dimensions ranged from middle to high levels, with Data Processing Skill and Digital Tool Operation Skill jointly receiving the highest mean score ($M = 3.54$). These results suggest that the university has established effective operational control mechanisms and basic digital capabilities but still needs to strengthen proactive risk identification and improve faculty competencies in algorithm application, data security awareness, digital compliance, and interdisciplinary integration. The findings are consistent with Khaw and Teoh (2023), who emphasized that higher education institutions often focus more on operational control than on systematic risk identification. They also support Setyadi et al. (2025), who argued that integrating risk management with digital technology literacy enhances institutional performance and learning innovation. Furthermore, the relatively high levels of data processing and digital tool operation skills are consistent with van Laar et al. (2017) and Vuorikari et al. (2022), who identified digital competence as a fundamental capability for supporting digital transformation in higher education.

2. Discussion of the Development of Risk Management Strategies Based on Digital Skills

The proposed risk management strategy was developed by integrating the questionnaire findings, focus group discussion, and SWOT-TOWS analyses. Four strategic directions were identified, including strengthening risk identification, enhancing faculty digital competencies, improving digital risk control and governance, and establishing continuous improvement mechanisms. These findings are consistent with Weihrich (1982), who proposed that the TOWS matrix translates SWOT analysis into practical strategic actions. They also support Humble (2024), who emphasized the importance of digital governance and systematic risk management in responding to emerging technologies such as generative artificial intelligence. In addition, the emphasis on faculty digital competency development is in line with Naeem and Mushibwe (2025) and Bose et al. (2026), who highlighted that digital skills and strategic institutional management are essential for sustainable digital transformation in higher education.

3. Discussion of the Evaluation of the Proposed Risk Management Strategies

The expert evaluation indicated that all proposed strategies achieved high or highest levels of suitability and feasibility, with Advancing Digital Risk Control and Governance receiving the highest evaluation. This finding suggests that experts recognized digital governance and institutional monitoring as key components of effective university risk management. The result is consistent with Gourlay and Oliver (2022), who argued that successful digital transformation depends on strategic governance rather than technology adoption alone. It also supports the findings of Nurhas et al. (2022) that organizational resilience requires continuous adaptation, digital governance, and institutional learning. Moreover, the positive evaluation of the proposed framework is consistent with González García and Pallarés (2025), who found that strengthening digital competencies enhances universities' readiness for technology-enabled teaching, management, and organizational development.

Limitations of the Study

This study was conducted at a single university; therefore, the findings may not be fully generalizable to other higher education institutions. The questionnaire data were collected at one point in time and were based on the participants' self-reported perceptions. In addition, the proposed strategies were evaluated by a small group of experts, and most ratings were concentrated at the high or highest levels, which may indicate a ceiling effect. The strategies were evaluated only in terms of their suitability and feasibility and have not yet been empirically tested through actual implementation. Future studies should examine the strategies in different institutional contexts and evaluate their long-term implementation outcomes.

New Knowledge

This study proposes a New Knowledge Model for Risk Management Based on the Concept of Digital Skills. The model begins with digital skills as the input and connects them with four core risk management processes: risk identification, risk assessment, risk control, and risk optimization. Questionnaire findings and expert focus group information are incorporated into the strategic development process through SWOT analysis and the TOWS matrix. This process produces four strategic directions: strengthening risk identification through digital intelligence, enhancing faculty digital competencies and risk assessment capabilities, advancing digital risk control and governance, and establishing a continuous improvement and organizational learning system. The expected outcome is improved institutional governance, resilience, and sustainable digital transformation.

The contribution of the model lies in systematically linking faculty digital skills, institutional risk management processes, and research-based strategy development within a higher education context. Unlike studies that examine digital competence or risk management separately, the model demonstrates how digital skills can support the identification, assessment, control, and continuous

improvement of institutional risks. The model has been evaluated by experts in terms of its suitability and feasibility; however, it has not yet been empirically tested through actual implementation. Therefore, it should be regarded as a proposed strategic framework rather than a model with confirmed institutional outcomes.

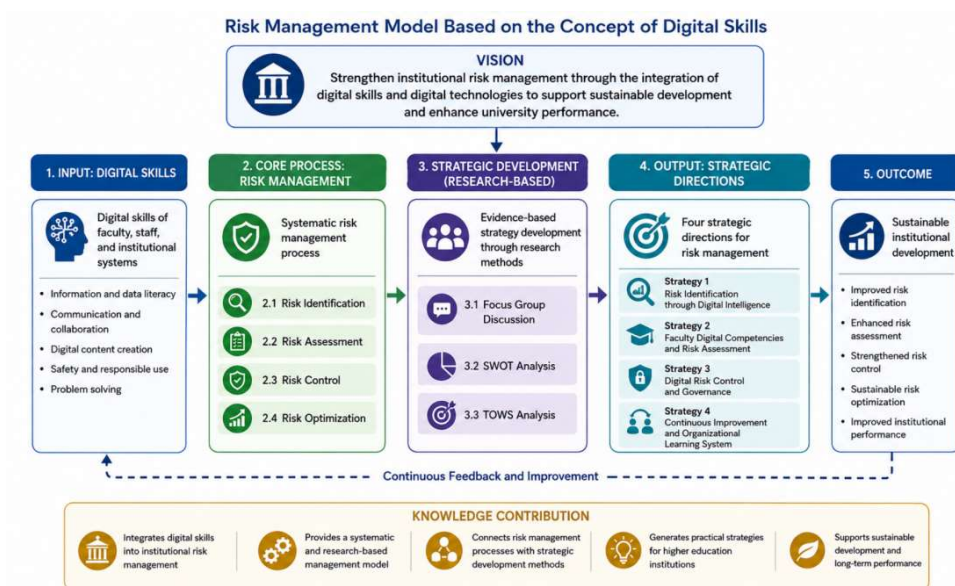


Figure 2 New Knowledge Model for Risk Management Based on the Concept of Digital Skills

Research Suggestions

1. Policy Recommendations

Higher education institutions should formulate institutional policies that integrate digital skills into university risk management systems. Policy frameworks should support the establishment of digital governance standards, strengthen risk identification and assessment mechanisms, and promote the application of artificial intelligence and data analytics in institutional management. In addition, long-term investment in digital infrastructure and faculty professional development should be prioritized to ensure sustainable digital transformation and institutional resilience.

2. Practical Recommendations

Universities should implement regular training programs to improve faculty members' digital competencies, particularly in algorithm application, data security awareness, digital compliance, and interdisciplinary integration. Institutions should also establish digital risk monitoring systems, early warning mechanisms, and continuous evaluation processes to strengthen risk management practices. Furthermore, collaboration among academic departments, information technology units, and external partners should be encouraged to support knowledge sharing and the continuous improvement of digital risk management.

3. Implementation Priorities

The proposed strategies should be implemented in phases according to institutional needs and available resources. In the short term, the university should prioritize Strategy 1 by establishing mechanisms for digital risk identification and early warning, while initiating essential faculty training under Strategy 2, particularly in data security, digital compliance, and algorithm application. In the medium term, the university should implement Strategy 3 by strengthening digital monitoring systems, cybersecurity measures, and institutional governance. In the long term, Strategy 4 should be implemented through continuous evaluation, organizational learning, interdepartmental collaboration, and periodic improvement of the risk management system. This phased approach may help the university allocate resources effectively and gradually strengthen its digital risk-management capabilities.

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