

# ЦИФРОВЫЕ ТЕХНОЛОГИИ В ЭКОНОМИКЕ И МЕНЕДЖМЕНТЕ

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## ADOPTION OF FINANCIAL TECHNOLOGIES INNOVATION BY KAZAKHSTAN'S FINANCIAL TECHNOLOGIES MARKET

**Abstract.** *The banking sector in Kazakhstan is a system forming industry in the financial market of the country. **The relevance of this work is due to the thesis that fintech is today the cornerstone in enhancing the competitiveness of Kazakhstan's financial market, which is essentially important billion for the banking industry in Kazakhstan. Today, banks are obliged to adopt fintech to stay competitive. **The purpose of the study is to provide scientific novelty by analyzing the development of the financial technology industry and the level of application by banks in Kazakhstan of innovation in financial technology to increase the competitiveness of banking products. The main object of research is second-tier banks, but secondary research objects fintech ecosystem of Kazakhstan, which are defined by the fintech research methodology as companies serving commercial banks, the regulator, financial market participants that offer common fintech product, organizations that represent the state's interests in the development of fintech industry and their like-minded people. The article starts with definition of fintech and fintech products. Then it continues with a review of the financial market and Kazakhstan's fintech market. The paper gradually justifies the low fintech adoption index assigned by well-known business analysts like Deloitte.*****

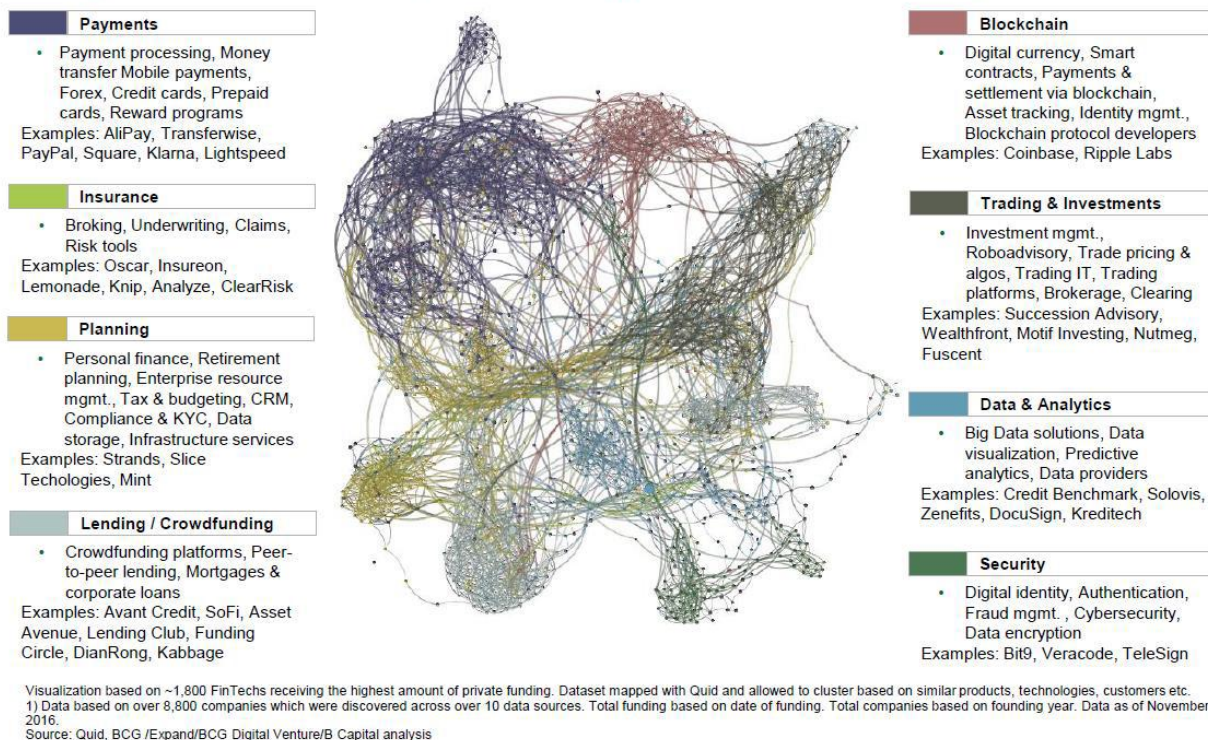
**Key words:** *fintech market, financial market, Kazakhstan, financial inclusion, bank products, innovation.*

### Introduction

Fintech, according to well-known dictionary of the world, Merriam Webster, is defined as “the products and services that employ newly developed digital and online technologies in the banking and financial services industries”. In other words, the concept of fintech goes beyond the borders of the banking industry and according to this definition, it also includes companies that are not registered as organizations that are named as “banks”. If a programmer who registers a company that can offer a financial service or product to public, it can be assessed as fintech industry player. On the other hand, this definition comes against to those parties that claim that fintech is an industry of only where disrupters act and includes traditional banks into the concept of fintech [1].

The fintech sphere in terms of technologies used, can be divided into 8 big segments: payments, insurance, planning, lending and crowdfunding, blockchain, trading and investments, data analysis and analytics and security. According to fintech researcher Al Ajlouni they can be classified like it is illustrated in the next visualization of fintech funding by the amount attracted by them. Each segment consists of various technologies that are offered by companies or support the industry as a whole technology that function as a source of innovation [2].

The global FinTech landscape can be mapped across 8 broad categories



Picture 1 – visualization of world fintech market development and technology segmentation. (Al Ajlouni 2019)

**Kazakhstan’s financial market**

Kazakhstan’s macroeconomic indicators for 2018 are a real GDP of \$171 billion and a GDP per capita of \$9237 with a population of 18.7 million. The inflation rate is 4%. Domestic debt is around 28 percent. Foreign Exchange and gold reserves are at the level of 30.747 million. GDP growth remained at around 5 percent in the period between 2015 and 2019 [3].

According to reports of financial consultants, the volume of the **Financial market** of Kazakhstan is relatively small from the point of view of potential investors. A big portion of this belongs to banks. Assets of banks equals 40 percent of Real GDP and earns 21 percent return on equity each year. The reasons for this size of the market has resulted from historical and political changes that Kazakhstan experienced in last 30 years and the waives of economic changes in the formation of today’s financial market. Small number and the large poor segment of the population along with destructive and constructive effects from economic planners can be the reason for such a weak market [4]. However, according to the report of the World Bank 59 percent of adults own an account in financial institutions and 92 percent of companies and SME’s have an account in registered financial institutions. Consequently, if the market merely belongs to **commercial banks** then it is clear that financial inclusion besides banks is at weak point. Moreover, most of the branches of commercial banks are found in the two biggest cities of the country Almaty and Nur-Sultan [5]. Other regions enjoy financial inclusion at relatively low level. This is justified by the low demand level of regions and results in low competition among banks in these regions compared to the two big cities of Kazakhstan. From all the population of Kazakhstan 77 percent use the Internet and 33 percent are active mobile Internet users and there are an average of 1.2 cards owned by each person.

However, compared to CIS countries Kazakhstan has relatively more banks and the leverage level of Kazakhstan is higher than other countries. The ratio of loans issued to GDP is high. In the mentioned indicators Kazakhstan’s financial market is close to Russia, not by size and scale, but in terms of efficiency [4].

There are 3 types of **payment system** that exist in Kazakhstan-interbank clearing, interbank money transfers and the international payment systems, Visa and Master card, that perform 95% of all monetary transactions [6].

Kazakhstan's insurance market is less monopolized compared to other sectors, but the majority of insurance companies are owned by dominating commercial banks of Kazakhstan. Below, the rating of insurance companies is exposed.

In 2018, the **insurance industry** of Kazakhstan was comprised of 29 companies, 20 of which provide general insurance and 6 grant life insurance policies. All assets of these companies was equal to 1.88 percent of the country's GDP in 2018. Most of these assets belong to the same individuals that own assets in other industries as well. In terms of possession and market share the insurance market is monopolized [7].

**Table 1 – Kazakhstan's insurance companies rating (Forbes Kazakhstan 2019)**

	Rating of insurance companies of Kazakhstan	Asset amount expressed in billion tenge
1	AO «SK Evrasia»	251
2	AO «DO Narodnogo banka Kazakhstana «SK «Halyk»	115,3
3	AO «SK «Nomad inshurans»	23,9
4	AO «SK «Viktoria»	94,36
5	AO «SK «Komesk omir»	22
6	AO «Kaspi Strahovanie»	14,7
7	AO «SK «Kazakhmys»	40,5
8	AO «SK «ASKO»	3,79
9	AO «SK «Sentras inshurans»	16,8
10	AO «Neftenaya strahovaya kompania»	1,8
11	AO «Eksportnaya strahovaya kompania»	48,6
12	AO «CK «London Almaty»	5,58
13	AO «SK«Jysan Garant»	
14	AO «KK ZIMS «Intertich»	6,09
15	AO «Zernovaya SK»	
16	AO «SK «Sinoasia B&R» (Sinoazia B and R)»	2,15
17	AO «SK «Freedom Finance Insurance»	2,3
18	AO «SK «Amanat»	
19	AO «SK «Transoil»	3,36

According to reports of the National Bank in 2019 there were 157 **Micro Credit Organizations** operating in Kazakhstan and their number is constantly growing year by year. MCO's total asset value in 2018 reached 286.55 billion Tenge, which is 52 percent higher compared with the previous period. In the same period all MCO's made loans totalling 219.11 billion tenge [8].

**Table 2 – Kazakhstan's MCO's rating (Musapirova 2019)**

	MCO's listed by rating	01.01.2019	change
1	KMF	129,2	33,50%
2	Toyota financial services Kazakhstan	35,5	54,30%
3	BIK Finance	30	
4	Arnur Kredit	14,8	72,90%
5	YRYS	10,3	-3,10%
6	Online Kazfinans	5,8	820,50%
7	Asean credit fund	5,8	27,90%
8	Shinkhan finans	4,5	43%
9	RIC "Kyzylorda"	4,2	144,60%
10	ERG Microfinance	3,6	-22,20%

**Online micro credit organizations** started to operate actively in Kazakhstan from 2014 and experienced a devaluation period in 2015 for very start cycle of their life. From 2014 to 2018 OMCO’s loaned 39.8 billion Tenge. According to industry reports this is 1 percent of commercial bank’s and MCO’s loan portfolio. In 2017, 944000 online loan contracts were issued by 250000 consumers, which makes an average of 3.8 contracts for each customer. Due to complaints of very high interest rates, in 2018 the National Bank prepared some limitations that would regulate the OMCO’s [8].

After the unification process of pension fund companies in 2013 there is only one pension fund operating in Kazakhstan named “Unified accumulative pension fund” joint stock company (UAPF). The UAPF registered over 9 million pension accounts, from which 5.6 million are active, which accounts for 66 percent of the employed population. SAPF accrued \$21 billion since its inception, which is 15 percent of GDP. Most of the resources of UAPF used to purchase government securities 44 percent and corporate bonds of Kazakhstani commercial banks 20 percent [8].

**Table – 3 Financial inclusion in Kazakhstan (Kaparov 2018)**

	2011	2014	2017
Debit card ownership (% age 15+)	31	32	40
Credit card ownership (% age 15+)	9	11	20
Credit card used in the past year (% age 15+)		5	17
Used a debit or credit card to make a purchase in the past year (% age 15+)		15	26
Borrowed any money in the past year (% age 15+)		45	45
Borrowed from a financial institution (% age 15+)	13	16	20
Outstanding housing loan (% age 15+)		15	21
Received domestic remittances in the past year (% age 15+)		12	18
Received domestic remittances through a financial institution (% age 15+)		2	8
Sent domestic remittances in the past year (% age 15+)		14	16
Sent domestic remittances through a financial institution (% age 15+)		5	9
Paid utility bills in the past year (% age 15+)		65	64
Paid utility bills using a financial institution account (% age 15+)		3	21
Received wages in the past year (% age 15+)		45	44
Received wages in cash only (% age 15+)		14	14
Deposit in the past year (% with a financial institution account, age 15+)		72	83
Made or received digital payments in the past year (% age 15+)		40	54
Made digital payments in the past year (% age 15+)		23	38
Received digital payments in the past year (% age 15+)		42	43

KASE, Kazakhstan’s stock exchange was established in 1993 and is currently made up of 142 companies. KASE mainly performs transactions with foreign exchange rates and repurchase agreements (REPO). Market capitalization of KASE reached to \$47 billion for equities and a long-term debt market of \$24 billion.

Kazakhstan’s financial market encountered huge cash outflows and comparatively tiny cash inflows during the formation of the current financial market.

30 percent of monetary relation in financial system occurs in the form of e-money and according to data from 2017 reached \$1 billion [8].

### **Analysis of the development of the financial technology industry**

The size of the fintech market of Kazakhstan is 17 billion Tenge. The expected market growth is 16 percent for 2019. In general, the market has remained active since 2013, so the market activity period is 5 years. 1675 specialists of various levels work in the Kazakhstan fintech market and, on average, each fintech company employed 42 fintech specialists of the region. On average, each fintech company serves 58,000 private sector customers and 370 legal entity clients. The coefficient of customer optimism in relation to the provided fintech services is 0.08, and the prospects of the company from the point of view of employees are 0.65. Also, optimism regarding the development

and prospects of the fintech market is 0.55, but if we take the experience of working with fintech companies, the optimism of customers is above 0.7. The market potential is 0.4. The coefficient of uncertainty over the future for fintech companies is, according to fintech companies themselves, - 0.3 [9].

Kazakhstan received 23.6 points in the world ranking for the development of the fintech market, tentatively with the USA, which is the leader, this rating is 446 points. The market is under development and there is still no company with a market capitalization of \$ 1 billion. The largest market participant is Credit24. The index of sustainable development is 68.1. Popular and developing financial technologies and investment attraction sectors are online payments and online loans [10].

Kazakhstan's fintech market is at an early stage of market development. The government shows a desire to develop the market by attracting foreign investment and helps in every way to regulate the online loan market and venture financing. The government also founded the Astana International Financial Center, where there is a special zone with privileges for fintech startups.

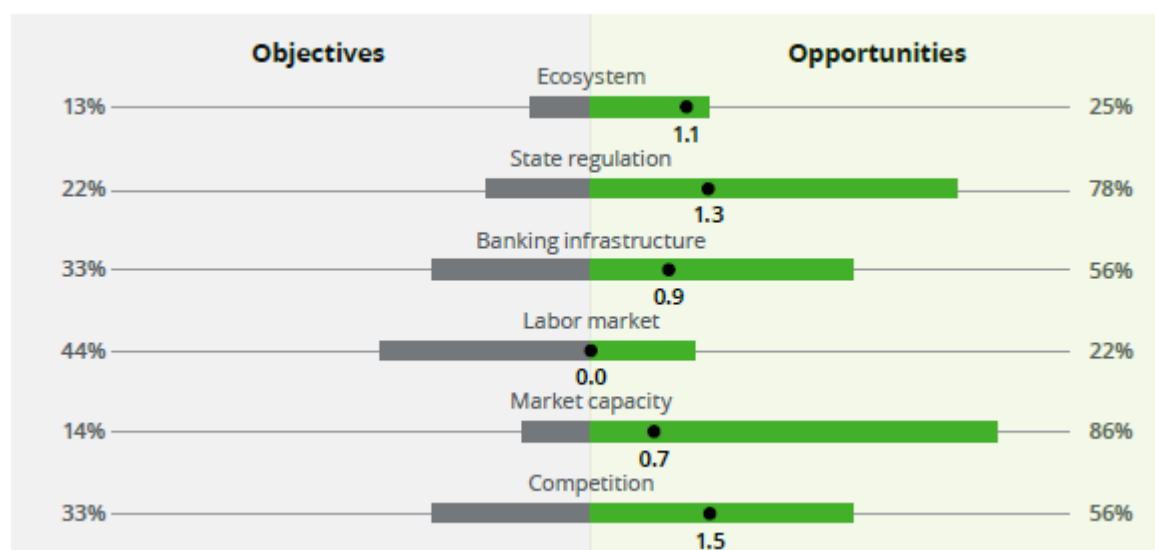


Figure 1-Fintech market affecting factors classified by positive (green) and negative (grey) impact (Deloitte CIS Research Center 2018)

According to experts working in the fintech industry, ecosystem and staffing are a weakness in the organization of the market. But in turn, market regulation, banking industry infrastructure, competition, along with market self-sufficiency, are positive factors that can contribute to market development [11].

The markets of Russia and Kazakhstan are very similar, since they have a common history and development paths. However, there are differences. Unlike Russia, the economy of Kazakhstan is not subject to sanctions, although it is closely related to the Russian economy since Russia is the main trading partner of Kazakhstan. As a result, in both countries a similar economic structure is dominated by large state-owned companies. Tenge, the Kazakh currency, is very volatile, as it is tied to the Russian ruble. Companies that will develop in Kazakhstan will have to launch their products at the international level, which is quite possible, given the openness of the local market. However, the main financial institutions of Kazakhstan are not transparent, like their Russian counterparts, which creates barriers for new market participants. Startups do not have easy access to the experience gained by large players, which prevents them from achieving success in business [12]. The venture capital market is underdeveloped. These circumstances create risks that can slow down the development of fintech technologies. Another slowdown factor affecting fintech is the small number of graduates of higher technical educational institutions with sufficient knowledge in the field of exponential technologies and their application for commercial purposes. Market participants

also complain that the regulator imposes stringent conditions on microfinance organizations in the form of established interest rates. Participants argue that there is no dialogue between market participants and the regulator. The intervention of the regulator is imperative and punitive [13].

The majority of fintech specialists are optimistic about the further development of the scenario in the market and the majority of specialists working in the industry are satisfied with the position of their company and its perspective. Assessing the political and economic uncertainty affecting the adoption of strategic decisions in fintech companies, half of the respondents indicated that they are very uncertain, and this factor negatively affects decision-making, while only 10 percent indicated low uncertainty. It should be noted that government steps to regulate the market, the organization of special economic zones and the devaluation of the currency very sharply change the situation with uncertainty. In the Global Innovation Index for 2018 Kazakhstan takes 74th place which is a weak position. By the same rating agency Kazakhstan takes 64th position due to a comfortable and organized business environment, which is also bad news for the development of fintech in this country. World Talent Rank reports that Kazakhstan holds 40th position in availability of specialists that are capable to enhance the situation. Access to 3G and 4G internet bandwidth is good compared to CIS countries. Financial inclusion and online purchases are low compared to Russia and Belarus but comparatively better than other CIS countries [13].

Astana International Finance Centre reports that in terms of government regulation on financial technologies Kazakhstan has already adopted laws on remote identification, blockchain, artificial intelligence and cloud technologies, and did not regulate the internet of things. Regulation of Open API technology is in process [14].

Moreover, AIFC reports that there are more than 10 accelerators that address the problem of talent management in a given sphere operating in Kazakhstan and projects of law on accelerators regulatory sandbox, laws regulating regarding capital, government funds and tax privileges in the fintech sphere have already been discussed and adopted by the government. Besides, the government has discussed and adopted laws on government funds and venture capital [14].

Due to tax regulations in the country, Kazakhstan was compared to CIS and Caucasus countries, where Kazakhstan shows good results with the lowest VAT tax rates of 12 percent, while corporate income tax rate is at the same level as the other countries at 20 percent. In terms of the proportion of tax revenue to GDP, Kazakhstan is among countries with the lowest revenues from tax. However, the tax payment system experienced by taxpayers were at a satisfactory 56<sup>th</sup> place. The number of tax payment types are 7, which is good indicator compared to Kyrgyzstan which practices 51 types of tax that economic players should pay. Kazakhstan practices tax discounts on corporate income tax and value added tax. Besides, resident fintech companies of special technological zones such as AIFC enjoy differentiated tax rates [13].

## Conclusion

Today, fintech is important more than ever because it includes everything we previously mentioned in this part and they refer that banks are obliged to grasp fintech in order to stay competitive. In the coming years, everything will be ready for expansion thanks to retail banking software, financial software and many other components. The advent of advanced technology, combined with the demand of customers for a safe and more convenient banking experience has led banks and financial services to the rapid implementation of financial technology. Only time will tell how fintech will develop further in the Kazakhstan's banking sector. In the paper, we needed to show the capability of Kazakhstan's financial market in the adoption of financial innovations, and fintech market development in Kazakhstan. Due to some restrictions, it was not possible to work out all the issues, but a critical proportion of the work was completed. Summing up financial technologies, the Kazakhstan banking sector takes into account and even implements technologies. But it is worth noting that it accepts innovation selectively. This can explain the development of technology like big data, scoring, credit technology and technology in the payment system. You can notice that Kazakh banks are showing greed in new investments and show caution by investing only in technolo-

gies that have been cash cows already and only improving these technologies further. The state promotes development by organizing various events and companies to accelerate development, but so far, the fintech industry remains underdeveloped in comparison with the world rating for the development of fintech markets. One important reason for the pessimistic conclusions is the lack of human capital. Responsible people for the development of this segment say that it is too early to assess the fintech market of Kazakhstan. Given the speed of fintech development in the world, there is a high probability of not keeping up with the participants of the fintech industry in other countries. This may lead to a losing position and reliance on outsourcing or blocking access to competitors from abroad.

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**Кобадиллов Б.Н.\* , Омаров Г.Б.**

**Қазақстан Республикасының қаржы технологиясы нарығында  
қаржы технологияның инновацияларын қолдану**

**Андатпа:** Қазақстандағы банк секторы – елдің қаржы нарығында жүйелік құрушы сала. Бұл жұмыстың өзектілігі бүгінгі таңда финтех Қазақстанның қаржы нарығының бәсекеге қабілеттілігін арттырудың негізі болып табылатын тезиске байланысты, яғни Қазақстандағы банк саласы үшін маңызы зор. Қазіргі уақытта банктер бәсекеге қабілетті болу үшін финтехті қолдануға міндетті. Зерттеудің мақсаты – қаржылық технологиялар индустриясының дамуын және қазақстандық банктердің банктік өнімдердің бәсекеге қабілеттілігін арттыру үшін қаржы технологиялары саласындағы инновацияларды қолдану деңгейін талдау арқылы ғылыми жаңалық қамтамасыз ету. Зерттеудің негізгі объектілері екінші деңгейлі банктер болып табылады, бірақ екінші деңгейдегі зерттеу объектілері – бұл ғылыми-зерттеу әдістемесімен коммерциялық банктерге қызмет көрсететін компаниялар, реттеуші органдар, жалпы финтех-өнім ұсынатын қаржы нарығының қатысушылары, финтехті дамытуда мемлекеттің мүдделерін білдіретін ұйымдар ретінде анықталатын зерттеу жүйесі, индустрия және олардың пікірлері. Жұмыс финтех өнімдерін анықтаудан және финтех анықтамасынан басталады. Содан кейін қаржы нарығы мен Қазақстанның қаржылық технологиялар нарығына шолу жалғасуда. Бұл жұмыс Deloitte сияқты танымал бизнес-талдаушылар орнатқан «финтех технологиясын енгізу индексі» біртіндеп дәлелдейді.

**Түйінді сөздер:** финтех нарығы, қаржы нарығы, Қазақстан, қаржылық қолжетімділік, банк өнімдері, инновациялар

**Кобадиллов Б.Н.\* , Омаров Г.Б.**

**Применение инноваций финансовых технологий на рынке  
финансовых технологий Казахстана**

**Аннотация.** Банковский сектор в Казахстане является системообразующей отраслью на финансовом рынке страны. Актуальность этой работы обусловлена тезисом о том, что финтех сегодня является краеугольным камнем в повышении конкурентоспособности финансового рынка Казахстана, что существенно важно для банковской отрасли в Казахстане. Банки в настоящее время обязаны применять финтех, чтобы оставаться конкурентоспособными. Целью исследования является предоставление научной новизны путем анализа развития индустрии финансовых технологий и уровня применения казахстанскими банками инноваций в области финансовых технологий для повышения конкурентоспособности банковских продуктов. Основным объектом исследования являются банки второго уровня, но вторичные объекты исследования экосистема финтех в Казахстане, которые определяются методологией исследования как компании, обслуживающие коммерческие банки, регулирующие органы, участники финансового рынка, которые предлагают общий финтех-продукт, организации, представляющие интересы государства в развитии финтех-индустрии и их единомышленников. Работа начинается с определения продуктов финтех и определения финтех. Затем продолжается обзор финансового рынка и рынка финансовых технологий Казахстана. Работа постепенно оправдывает низкий «индекс внедрения финтех-технологий», установленный такими известными бизнес-аналитиками, как Deloitte.

**Ключевые слова:** финтех-рынок, финансовый рынок, Казахстан, финансовая доступность, банковские продукты, инновации.

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