



## Sector Report: Telecommunications Sector

行业报告：通信行业

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# Weekly Wrap: Operators' Cloud Services Enhanced

周报：运营商云服务地位加强

- Telecom operators' public cloud platforms rank high, and private cloud has great potential.** Recently, IDC released the China public cloud service market (2022Q3) tracking report. In the domestic public cloud IaaS + PaaS market, China Telecom Cloud ranked top 3, with a share of 10.2%; China Mobile's public cloud market share ranked sixth. In recent years, operators have continuously invested in the core technologies of cloud computing and the layout of cloud network resources. For example, China Telecom has created a full-stack cloud product system, and has always adhered to the full-stack self-development of IaaS + PaaS key technologies. China Mobile has continued to improve resource layout and independent research, and has taken the lead in establishing self-developed operating systems and servers in the cloud computing industry. China Unicom has taken the lead in concepts of seven scenario-based cloud products. At the same time, IDC predicted that the dedicated cloud service market will become the fastest-growing field in the overall cloud computing market in the next five years; the government will still be the main force in the dedicated cloud service market, but demand from energy, manufacturing, transportation, and medical industries will also begin to strengthen. In 1H22, market share of the three major operators increased from 30.2% in 1H21 to 37.0%. The three major operators are accelerating the transformation from IDC business to cloud business from the group strategic level, and sustainability in all aspects will be gradually strengthened.
- In 2022, spending in North America grew rapidly.** Looking forward into 2023, Google's expenditure will be consistent with that in 2022; and it will increase the proportion of infrastructure investment and significantly reduce the proportion of office facilities. Amazon will continue to increase investment in technical infrastructure; Meta guided expenditures to range from US\$30 billion to US\$33 billion, and will use a more cost-effective new data center architecture to support artificial intelligence loads. Microsoft will continue to increase spending, but there will be seasonal changes with the construction of cloud facilities.
- We give an "Outperform" rating.** We recommend China Mobile (00941 HK), China Telecom (00728 HK), China Unicom (00762 HK), ZTE (00763 HK), and BYD Electronic (00285 HK).
- Risk Warning:** Slower-than-expected development of cloud computing; overseas cloud business demand may fluctuate.
- 运营商公有云排名靠前，专有云潜力巨大。**近日IDC发布《中国公有云服务市场（2022年第三季度）跟踪》报告。国内公有云IaaS+PaaS市场中，中国电信天翼云以10.2%的份额跻身三甲；中国移动公有云市场份额第六。最近几年，运营商在云计算的核心技术、云网资源布局等方面不断投入，例如中国电信打造了全栈云产品体系，并始终坚持IaaS+PaaS关键技术全栈自研；中国移动在资源布局和自主研发方面不断精进，率先建立云计算行业自研操作系统与服务器；中国联通率先提出七大“场景云”理念。同时，IDC预测未来五年专有云市场将成为整体云计算市场中增长最快的领域，其中政府依然是专有云市场主力，但能源、制造、交通、医疗行业需求也将开始走强。2022上半年三大运营商市场份额从2021上半年的30.2%提升至37.0%。三大运营商正在从集团战略层面加快IDC业务向云业务的转型，各方面持续性将逐步加强。
- 2022年北美开支高增长。**展望2023年，谷歌预料开支与2022年一致，会加大基础设施投入比重，显著减少办公设施比重。亚马逊预计将继续提升技术基础设施的投入；Meta指引开支区间为300-330亿美元，将使用更具成本效益的新数据中心架构，以支持人工智能的负载。微软则将继续增加开支，但会随云设施建设有季节性的变化。
- 我们给予行业“跑赢大市”评级。**推荐中国移动(00941 HK)、中国电信(00728 HK)、中国联通(00762 HK)、中兴通讯(00763 HK)和比亚迪电子(00285 HK)。
- 风险提示：**云计算发展不及预期、海外云业务需求波动。

Rating:

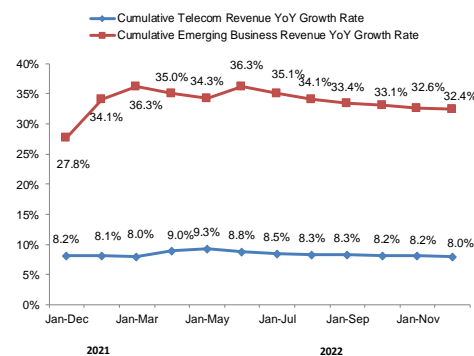
**Outperform**  
Maintained

评级:

**跑赢大市** (维持)

### Cumulative telecom revenue YoY growth rate

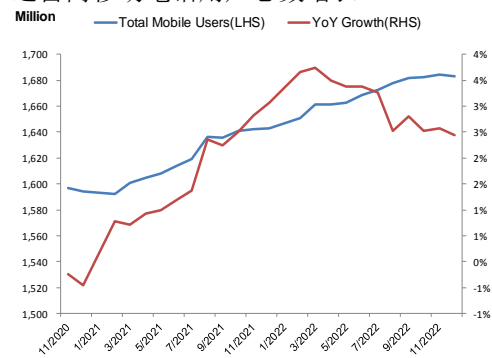
电信业务收入同比增速



Source: the Ministry of Industry and Information Technology.

### Growth in the total number of operators' mobile phone users

运营商移动电话用户总数增长



Source: the Ministry of Industry and Information Technology.

## 1. Weekly Investment Points

**Telecom operators' public cloud platforms rank high, and private cloud has great potential.** Recently, IDC released the China public cloud service market (2022Q3) tracking report. In the domestic public cloud IaaS + PaaS market, China Telecom Cloud ranked top 3 with a share of 10.2%; China Mobile's public cloud market share ranked sixth. In recent years, operators have continuously invested in the core technologies of cloud computing and the layout of cloud network resources. For example, China Telecom has created a full-stack cloud product system, and has always adhered to the full-stack self-development of IaaS + PaaS key technologies. China Mobile continues to improve resource layout and independent research, and has taken the lead in establishing self-developed operating systems and servers in the cloud computing industry. China Unicom took the lead in concepts of seven scenario-based cloud products. At the same time, IDC predicted that the dedicated cloud service market will become the fastest-growing field in the overall cloud computing market in the next five years; and the government will still be the main force in the dedicated cloud service market, but the demand from energy, manufacturing, transportation, and medical industries will also begin to strengthen. In 1H22, market share of the three major operators increased from 30.2% in 1H21 to 37.0%. The three major operators are accelerating the transformation from IDC business to cloud business from the group strategic level, and sustainability in all aspects will be gradually strengthened.

**In 2022, spending in North America grew rapidly, and 2023 is expected to become a big year for innovative optical applications.** Recently, North American cloud vendors released performance and expenditure data for 2022. Google's capital expenditure in 2022 was US\$31.4 billion, a yoy increase of 27%; Amazon's annual expenditure was US\$58.3 billion, a yoy increase of 6%, mainly in the expansion of AWS and operation center capacity. Meta's annual capital expenditure was US\$32 billion, a yoy increase of 72.54%; Microsoft's capital expenditure was US\$24.768 billion, a yoy increase of 6.7%. Looking forward into 2023, Google's expenditure will be consistent with that in 2022; and it will increase the proportion of infrastructure investment and significantly reduce the proportion of office facilities. Amazon will continue to increase investment in technical infrastructure. Meta guided expenditures to range from US\$30 billion to US\$33 billion, and will use a more cost-effective new data center architecture to support artificial intelligence loads. Microsoft will continue to increase spending, but there will be seasonal changes with the construction of cloud facilities. We expect that in mid-2023, more cost-effective technologies such as 800G and coherent DCI optical interconnection will be widely used. Meanwhile, optical engine and co-packaging technology are also expected to be launched and implemented; 2023 is expected to become a big year for innovative applications of optical interconnection.

**Table 1: 2022 capital expenditure and 2023 outlook of major vendors**

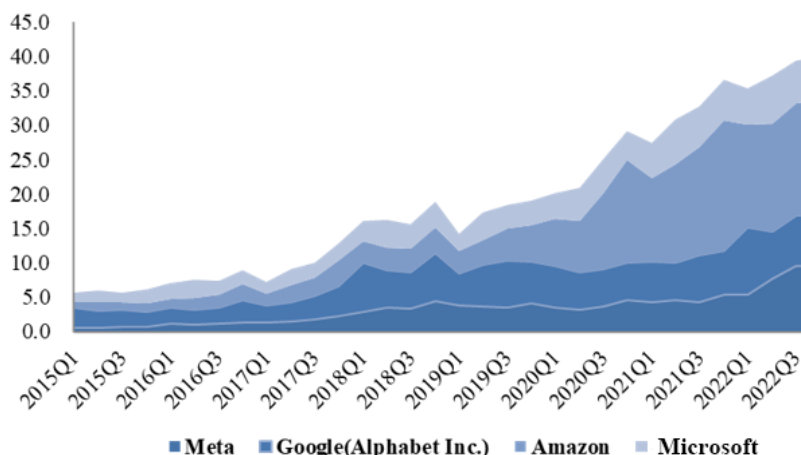
Vendor	2022A	2023F	Demand Scenario
Google	Capital expenditure mainly invested into technology infrastructure and office facilities. Annual expenditures increased by 27% yoy to about US\$31.4 billion in 2022, and the amount was about US\$24.6 billion in 2021.	Overall capital expenditure in 2023 is expected to be in line with that in 2022; investment in infrastructure will increase, and investment in office facilities will significantly reduce.	Data center, server, supply chain
Amazon	The annual capital expenditure in 2022 increased by 6% yoy to US\$58.3 billion, and the capital expenditure in 2021 was US\$55.4 billion; investments were mainly capacity expansion in AWS and operation centers.	Investment in technology infrastructure is expected to continue to increase	AWS
Meta	The annual capital expenditure in 2022 increased by 72.54% yoy to about US\$32 billion, and the capital expenditure in 2021 was US\$18.5 billion. About US\$7 billion of 2022 investments were in Amazon's original and third-party video contents.	Capital expenditure is expected to be in the range of US\$30-33 billion; investment will move to a new data center architecture in 2023 that is more cost-effective and can support AI as well as non-AI workloads.	AI, apps
Microsoft	Spending US\$6.8 billion in Q4 to support cloud business growth.	Sequential growth on CAPEX following the normal quarterly spending variation of cloud infrastructure buildout times. Data center investments continue to be based on near- and long-term customer needs, including artificial intelligence opportunities.	Data center

Source: Companies, Guotai Junan International.

**Investment advice:** We recommend China Mobile (00941 HK), China Telecom (00728 HK), China Unicom (00762 HK), ZTE (00763 HK), and BYD Electronic (00285 HK).

**Risk warning:** Construction of East-to-West Computing Resource Transfer Project and 5G may be slower than expected; development of cloud computing may be less than expected; overseas cloud business demand may fluctuate.

Figure 1: The level of capital expenditure of North American vendors is gradually increasing



Source: Companies, Guotai Junan International.

## 2. Weekly Market View

Overall performance of stocks we cover in the telecommunications sector outperformed the broader market last week.

Last week, the Hang Seng Index decreased by 4.5%, while the simple average return of stocks we cover in the telecommunications sector decreased by 1.0%.

Table 2: Sector performance

Company	Stock Code	Share Price (HK\$)	Absolute Return			Relative Return		
			1 week	1 month	3 month	1 week	1 month	3 month
Hang Seng Index	HSI Index	21,738.66	(4.5)	7.5	34.0			
Hang Seng China Ent Index	HSCEI Index	7,391.18	(5.0)	8.1	34.7			
Hang Seng Tech Index	HSTECH Index	4,554.78	(3.7)	9.5	42.0			
China Mobile	00941 HK	55.50	0.1	8.1	18.1	4.6	4.9	(15.9)
China Telecom	00728 HK	3.47	4.5	23.2	40.4	9.1	20.0	6.3
China Unicom	00762 HK	5.35	(0.5)	7.3	59.3	4.0	4.1	25.3
ZTE	00763 HK	19.00	(3.6)	7.9	31.3	0.9	4.7	(2.8)
China Tower	00788 HK	0.88	1.1	7.0	15.0	5.6	3.8	(19.0)
China Comservice	00552 HK	3.00	(6.7)	(3.0)	24.3	(2.2)	(6.2)	(9.8)
BYD Electronic	00285 HK	25.65	(2.1)	8.0	13.8	2.4	4.8	(20.2)
Simple Average			(1.0)	8.4	28.9	3.5	5.2	(5.2)
Weighted Average			0.8	11.2	26.6	5.3	8.0	(7.4)

Source: Bloomberg, Guotai Junan International.

Notes: Data at 3 Feb 2022.

### 3. Appendix: Profit Forecasts and Valuation of Major Companies

**Table 3: Profit forecasts and valuation table of major companies**

Company	Stock Code	Share Price (HK\$)	EPS (RMB)			PE			Investment Rating
			21A	22F	23F	21A	22F	23F	
China Mobile	00941 HK	56.75	5.673	5.906	6.472	8.2	8.5	7.5	Buy
China Telecom	00728 HK	3.93	0.307	0.317	0.333	10.4	11.0	10.1	Buy
China Unicom	00762 HK	5.56	0.470	0.540	0.593	9.7	9.1	8.0	Buy
ZTE	00763 HK	19.32	1.470	1.838	2.211	10.7	9.3	7.5	Buy
China Tower	00788 HK	0.92	0.042	0.050	0.055	17.9	16.1	14.3	Accumulate
China Comservice	00552 HK	2.92	0.456	0.479	0.498	5.2	5.4	5.0	Accumulate
BYD Electronic	00285 HK	27.65	1.025	0.836	1.272	22.0	25.2	16.7	Buy

Source: Bloomberg, Guotai Junan International.

Notes: Data at 3 Feb 2023.

**Company Rating Definition**

The Benchmark: Hong Kong Hang Seng Index

Time Horizon: 6 to 18 months

Rating		Definition
Buy	买入	Relative Performance >15%; or the fundamental outlook of the company or sector is favorable.
Accumulate	收集	Relative Performance is 5% to 15%; or the fundamental outlook of the company or sector is favorable.
Neutral	中性	Relative Performance is -5% to 5%; or the fundamental outlook of the company or sector is neutral.
Reduce	减持	Relative Performance is -5% to -15%; or the fundamental outlook of the company or sector is unfavorable.
Sell	卖出	Relative Performance <-15%; or the fundamental outlook of the company or sector is unfavorable.

**Sector Rating Definition**

The Benchmark: Hong Kong Hang Seng Index

Time Horizon: 6 to 18 months

Rating		Definition
Outperform	跑赢大市	Relative Performance >5%; or the fundamental outlook of the sector is favorable.
Neutral	中性	Relative Performance is -5% to 5%; or the fundamental outlook of the sector is neutral.
Underperform	跑输大市	Relative Performance <-5%; or the fundamental outlook of the sector is unfavorable.

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