

Baidu (BIDU US)

Takeaway from 2023 Baidu World Conference

We attended 2023 Baidu World Conference on 17 Oct. Our key takeaways are: 1) Baidu unveiled the 4.0 version of Ernie large language model (LLM) and is integrating generative AI across all products to enhance user experience, which shall enhance Baidu's monetization capability over the long-run, in our view; and 2) Baidu Cloud has accumulated strong AI infrastructure, which enables more cost-efficient solutions to ease computing power cost pressure. Although macro headwinds may weigh on short-term revenue growth of both ads and cloud businesses, and additional investment to support large-scale use of LLM may squeeze margins, we are more positive on the long-term development prospects of Baidu aided by the on-track development of LLM. To account for short-term macro headwinds on its business, we fine-tune our SOTP-based TP to US\$199.4 (was US\$201.0). Maintain BUY.

■ **Baidu unveiled 4.0 version of Ernie LLM.** Baidu launched the 4.0 version of Ernie LLM. Since being open for public use in August, Ernie has amassed 45mn users, 5.4mn developers, 4,300 scenarios, 825 applications, and 500 plug-ins. Baidu expects the LLM to bring value to its ecosystem in three aspects: 1) product capability reconfiguration; 2) a new business ecology from enhancing the ROI of advertisers; and 3) developing plug-in ecosystem to solve the needs of users in multiple scenarios and bring more tangible benefits to developers. The increasing adoption of Baidu's LLM by third-party partners may also enhance the growth prospects of Baidu's cloud business over the long run, in our view.

■ **Integration of generative AI across all products to enhance user experience.** Baidu has been integrating generative AI across all its products, including Baidu Drive, Baidu Wenku, and Baidu Maps, which in our view will enhance user experience and enhance monetization capability over the long run. The new version of Baidu Wenku has been well-received by users since its launch in late August: cumulative users have surpassed 13mn, and the cumulative pieces of content generated has surpassed 20mn.

■ **Baidu Cloud: riding the tide of multi-cloud adoption and strengthening its expertise in AI Cloud.** Management believes Baidu Cloud has strong capability in helping customers lower costs through adopting LLM and end-to-end optimization. Baidu's AI infrastructure has been leading in efficiency and stability of LLM training. For example, in terms of key metrics: 1) Baidu's valid training time accounted for 96% of the total; and 2) linear speedup in parallel processing can reach 95%. The strong AI infrastructure enables Baidu to provide more cost-efficient solutions to its customers compared to its industry peers, and lays the foundation for long-term business development.

Earnings Summary

(YE 31 Dec)	FY21A	FY22A	FY23E	FY24E	FY25E
Revenue (RMB mn)	124,493	123,675	136,247	148,020	163,790
YoY growth (%)	16.3	(0.7)	10.2	8.6	10.7
Adjusted net profit (RMB mn)	18,830.0	20,680.0	25,566.7	25,630.7	29,575.2
EPS (Adjusted) (RMB)	53.53	58.90	72.09	71.56	81.75
Consensus EPS (RMB)	na	na	71.05	75.21	83.64
P/E (x)	42.3	40.1	15.6	16.1	13.8
ROE (%)	5.1	3.4	8.0	7.1	7.5

Source: Company data, Bloomberg, CMBIGM estimates

BUY (Maintain)

Target Price **US\$199.40**
 (Previous TP **US\$201.00**)
 Up/Downside **66.5%**
 Current Price **US\$119.76**

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Stock Data

Mkt Cap (US\$ mn)	42,050.7
Avg 3 mths t/o (US\$ mn)	91.9
52w High/Low (US\$)	160.22/76.57
Total Issued Shares (mn)	351.1

Source: FactSet

Shareholding Structure

Robin Yanhong Li	16.5%
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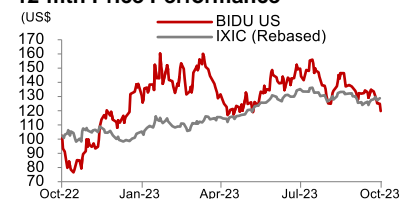
Source: HKEx

Share Performance

	Absolute	Relative
1-mth	-10.6%	-9.5%
3-mth	-17.0%	-11.9%
6-mth	-8.7%	-18.0%

Source: FactSet

12-month Price Performance



Source: FactSet

- **3Q23 preview: macro headwinds weigh on short-term revenue growth and margin.** For 3Q23, we estimate Baidu could achieve total revenue of RMB34.9bn, up 7.2% YoY, 1.6% lower than Bloomberg consensus estimates owing to likely lower-than-expected cloud revenue growth (our forecast: -2% YoY dragged by the smart transportation vertical). We forecast Baidu to have recorded non-GAAP net income of RMB6.2bn, 4% lower than consensus estimates. For Baidu Core, we estimate 3Q23 revenue of RMB26.8bn, up 6.3% YoY, and non-GAAP operating profit of RMB6.4bn. We are expecting a YoY decline in non-GAAP OPM to 23.8% for Baidu Core (3Q22: 26.4%) due to: 1) additional investment in user acquisition; and 2) investment to support large-scale public use of LLM.

Figure 1: Baidu: quarterly results forecasts

(RMBbn)	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23E
Baidu Group												
Online marketing	20.7	18.1	20.8	21.1	20.7	16.9	18.3	19.9	19.6	18.0	21.1	21.4
YoY growth (%)	-0.3%	27.0%	17.8%	4.2%	0.1%	-6.4%	12.3%	-5.3%	-5.6%	6.2%	15.4%	7.3%
Other services	9.6	10.0	10.5	10.9	12.4	11.5	11.4	12.6	13.5	13.2	13.0	13.5
YoY growth (%)	17.7%	20.9%	26.1%	35.4%	29.4%	14.4%	8.1%	15.9%	9.2%	14.7%	14.0%	7.1%
Total revenue	30.3	28.1	31.4	31.9	33.1	28.4	29.6	32.5	33.1	31.1	34.1	34.9
YoY growth (%)	4.8%	24.8%	20.4%	13.1%	9.3%	1.0%	-5.4%	1.9%	0.0%	9.6%	14.9%	7.2%
Gross profit	15.7	13.1	15.5	15.8	15.8	12.9	14.5	16.3	16.1	16.0	17.9	17.9
Operating profit	5.0	2.8	3.5	2.3	2.0	2.6	3.4	5.3	4.6	5.0	5.2	5.6
Non-GAAP net profit	6.9	4.3	5.4	5.1	4.1	3.9	5.5	5.9	5.4	5.7	8.0	6.2
YoY growth (%)	-25%	39%	5%	-27%	-41%	-10%	3%	16%	32%	48%	44%	6%
GPM (%)	52.0%	46.7%	49.3%	49.5%	47.7%	45.3%	48.8%	50.0%	48.8%	51.3%	52.5%	51.4%
OPM (%)	16.4%	9.9%	11.0%	7.2%	5.9%	9.2%	11.5%	16.3%	13.9%	16.0%	15.3%	16.1%
Non-GAAP NPM (%)	22.7%	15.3%	17.1%	15.9%	12.3%	13.7%	18.7%	18.1%	16.2%	18.4%	23.5%	17.8%
Baidu Core												
Revenue	23.1	20.5	24.0	24.7	26.0	21.4	23.2	25.2	25.7	23.0	26.4	26.8
YoY growth (%)	6.4%	34.2%	27.0%	15.3%	12.4%	4.4%	-3.7%	2.3%	-1.2%	7.6%	14.0%	6.3%
Non-GAAP OP	8.0	5.1	6.5	5.8	4.8	3.7	5.1	6.7	5.5	5.4	6.5	6.4
Non-GAAP NP	7.5	4.9	5.9	5.9	4.6	3.8	5.4	5.8	4.9	5.3	7.7	5.9
YoY growth (%)	-24.3%	7.8%	5.1%	21.8%	38.6%	21.9%	-8.3%	-1.5%	6.3%	38.5%	41.2%	2.8%
Non-GAAP OPM (%)	34.8%	24.7%	26.9%	23.6%	18.7%	17.2%	22.1%	26.4%	21.4%	23.3%	24.7%	23.8%
Non-GAAP NPM (%)	32.6%	23.8%	24.7%	23.7%	17.8%	17.8%	23.5%	22.8%	19.2%	22.9%	29.1%	22.1%

Source: Company data, CMBIGM estimates

Changes in forecast and valuation

Figure 2: Baidu forecast revision

RMB bn	Current			Previous			Change (%)		
	2023E	2024E	2025E	2023E	2024E	2025E	2023E	2024E	2025E
Revenue	136.2	148.0	163.8	136.8	148.7	164.5	-0.4%	-0.4%	-0.4%
Gross Profit	69.4	75.2	85.1	69.1	75.3	85.3	0.4%	0.0%	-0.3%
Non-GAAP net profit	25.6	25.6	29.6	25.7	25.7	29.9	-0.6%	-0.4%	-1.1%
Gross Margin	50.9%	50.8%	51.9%	50.5%	50.6%	51.9%	0.4 ppt	0.2 ppt	0.1 ppt
Non-GAAP net margin	18.8%	17.3%	18.1%	18.8%	17.3%	18.2%	0.0 ppt	0.0 ppt	-0.1 ppt

Source: CMBIGM estimates

Figure 3: Baidu Core business segment forecast revision

RMB bn	Current			Previous			Change (%)		
	2023E	2024E	2025E	2023E	2024E	2025E	2023E	2024E	2025E
Revenue	104.4	113.6	128.2	105.0	114.3	128.9	-0.6%	-0.6%	-0.6%
Non-GAAP Operating Profit	23.7	24.8	28.9	23.9	25.0	29.3	-0.7%	-0.5%	-1.3%
Non-GAAP net profit	24.0	23.7	27.2	24.2	23.8	27.5	-0.6%	-0.4%	-1.1%
Non-GAAP OPM	17.4%	16.8%	17.6%	17.4%	16.8%	17.8%	-0.1 ppt	0.0 ppt	-0.2 ppt
Non-GAAP NPM	17.6%	16.0%	16.6%	17.7%	16.0%	16.7%	0.0 ppt	0.0 ppt	-0.1 ppt

Source: CMBIGM estimates

SOTP valuation of US\$199.4 per ADS

We lower our SOTP-based target price to US\$199.4 (was US\$201.0), which comprises, per ADS:

- 1) US\$68.5 for Baidu Core (main business, excluding Apollo and Baidu Cloud, mainly including the core search and feed ads business), based on 7.0x 2023E non-GAAP P/E. The lift in valuation is mainly due to a lift in non-GAAP net income forecast.
- 2) US\$22.8 for Apollo ASD, based on 2.0x 2030E revenue, and discounted back using a 13.0% WACC.
- 3) US\$36.9 for Baidu Cloud, based on unchanged 4.8x 2023E PS.
- 4) US\$58.2 net cash.
- 5) US\$13.0 for iQIYI and other investments.

Figure 4: Baidu: SOTP valuation

Segment	NOPAT (US\$mn)	Valuation method/multiple	Valuation (RMBmn)	Valuation (US\$mn)	Baidu's stake	Valuation of Baidu's stake (US\$mn)	USD/ADS	Valuation as % of total (%)
Core business and cash								
1) Baidu core (ex-Apollo and Cloud)	3,472	7.0x 2023E PE	168,304	24,304	100.0	24,304	68.5	34.4
2) Apollo ASD			55,926	8,076	100.0	8,076	22.8	11.4
3) Baidu Cloud (ex-ASD)		4.8x 2023E PS	90,559	13,077	100.0	13,077	36.9	18.5
4) Net cash			142,956	20,643	100.0	20,643	58.2	29.2
Valuation of core business and cash						66,100	186.4	93.5
iQIYI and strategic investments								
1) iQIYI		Market value	34,451	4,975	51.5	2,562	7.2	
2) Trip.com group		Market value	177,800	25,675	10.8	2,773	7.8	
3) Uxin		Market value	505	73	9.1	7	0.0	
4) HAND Enterprise Solutions		Market value	9,319	1,346	5.3	71	0.2	
5) Kuaishou		Market value	235,483	34,005	3.1	1,056	3.0	
6) Yusys Technologies		Market value	15,260	2,204	5.1	113	0.3	
Valuation of iQIYI and investments						6,582	18.6	
Valuation of iQIYI and investments (with 30% holding discount)						4,607	13.0	6.5
Total Baidu valuation (US\$mn)						70,708		
Number of ADS outstanding (mn)						355		
Valuation per ADS (US\$)						199.4		

Source: Company data, CMBIGM estimates

Note: American depositary share (ADS); iQIYI (IQ US); Trip.com Group (TCOM US); Uxin (UXIN US); HAND Enterprise solution (300170 SH); Kuaishou (1024 HK); Yusys Technologies (300674 SH).

Financial Summary

INCOME STATEMENT	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec (RMB mn)						
Revenue	107,074	124,493	123,675	136,247	148,020	163,790
Cost of goods sold	(55,158)	(64,314)	(63,935)	(66,875)	(72,781)	(78,724)
Gross profit	51,916	60,179	59,740	69,373	75,239	85,066
Operating expenses	(37,576)	(49,661)	(43,829)	(48,722)	(52,314)	(57,762)
SG&A expense	(18,063)	(24,723)	(20,514)	(24,797)	(26,792)	(29,646)
R&D expense	(19,513)	(24,938)	(23,315)	(23,925)	(25,522)	(28,116)
Operating profit	14,340	10,518	15,911	20,651	22,925	27,304
Share of (losses)/profits of associates/JV	(2,248)	(932)	(1,910)	(1,001)	(633)	(261)
Adjusted EBITDA	27,504	24,914	29,663	34,116	36,705	41,940
Net interest income/(expense)	2,255	2,130	3,332	4,355	3,114	3,364
Foreign exchange gain/loss	(660)	100	(1,484)	1,070	856	685
Other income/expense	9,403	(1,038)	(5,737)	1,083	1,094	1,105
Pre-tax profit	23,090	10,778	10,112	26,157	27,356	32,196
Income tax	(4,064)	(3,187)	(2,578)	(5,580)	(6,799)	(7,867)
After tax profit	19,026	7,591	7,534	20,578	20,557	24,329
Minority interest	(3,446)	(2,635)	(25)	868	1,313	1,638
Net profit	22,472	10,226	7,559	19,709	19,244	22,691
Adjusted net profit	22,020	18,830	20,680	25,567	25,631	29,575
BALANCE SHEET	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec (RMB mn)						
Current assets	183,342	213,315	212,850	237,106	265,170	297,523
Cash & equivalents	35,782	36,850	53,156	77,741	103,628	133,103
Restricted cash	758	10,821	11,330	11,330	11,330	11,330
Account receivables	8,668	9,981	11,733	10,079	10,949	12,116
Other current assets	138,134	155,663	136,631	137,957	139,262	140,974
Non-current assets	149,366	166,719	178,123	176,864	179,512	182,228
PP&E	17,508	23,027	23,973	28,017	32,018	36,109
Intangibles	8,457	8,947	8,095	2,792	1,439	64
Goodwill	22,248	22,605	22,477	22,477	22,477	22,477
Other non-current assets	101,153	112,140	123,578	123,578	123,578	123,578
Total assets	332,708	380,034	390,973	413,970	444,682	479,751
Current liabilities	68,385	74,488	79,630	85,137	88,010	90,319
Short-term borrowings	3,016	4,168	5,343	5,343	5,343	5,343
Account payables	36,716	41,384	38,014	42,181	43,798	44,425
Other current liabilities	28,653	28,936	36,273	37,614	38,869	40,551
Non-current liabilities	72,480	81,594	73,538	65,062	63,692	62,883
Long-term borrowings	0	12,629	13,722	0	0	0
Bond payables	60,335	55,772	49,461	54,707	53,337	52,528
Obligations under finance leases	4,693	5,569	4,810	4,810	4,810	4,810
Deferred income	97	129	159	159	159	159
Other non-current liabilities	7,355	7,495	5,386	5,386	5,386	5,386
Total liabilities	140,865	156,082	153,168	150,199	151,702	153,202
Share capital	0	0	0	0	0	0
Capital surplus	47,213	47,548	47,748	47,948	48,148	48,348
Retained earnings	135,483	163,911	175,730	201,496	230,506	263,874
Other reserves	3,102	7,148	8,393	8,393	8,393	8,393
Total shareholders equity	185,798	218,607	231,871	257,837	287,047	320,615
Minority interest	6,045	5,345	5,934	5,934	5,934	5,934
Total equity and liabilities	332,708	380,034	390,973	413,970	444,682	479,751

CASH FLOW	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec (RMB mn)						
Operating						
Profit before taxation	23,090	10,778	10,112	26,157	27,356	32,196
Depreciation & amortization	18,180	16,438	14,725	5,700	5,742	5,654
Tax paid	(4,064)	(3,187)	(2,578)	(5,580)	(6,799)	(7,867)
Change in working capital	(18,207)	(18,691)	(16,758)	5,836	696	(569)
Others	5,201	14,784	20,669	7,186	7,226	7,812
Net cash from operations	24,200	20,122	26,170	39,300	34,221	37,226
Investing						
Capital expenditure	(5,084)	(10,896)	(8,286)	(8,286)	(8,286)	(8,286)
Acquisition of subsidiaries/ investments	(2,396)	(247)	(14)	0	0	0
Net proceeds from disposal of short-term investments	(486)	0	0	0	0	0
Others	(19,586)	(20,301)	4,356	(130)	(104)	(84)
Net cash from investing	(27,552)	(31,444)	(3,944)	(8,416)	(8,390)	(8,370)
Financing						
Net borrowings	12,390	8,840	(6,813)	(13,722)	0	0
Share repurchases	(13,054)	(7,581)	(1,925)	0	0	0
Others	6,329	22,137	2,348	6,673	57	618
Net cash from financing	5,665	23,396	(6,390)	(7,049)	57	618
Net change in cash						
Cash at the beginning of the year	34,439	36,540	47,671	65,236	89,071	114,958
Exchange difference	(212)	(943)	1,729	0	0	0
Cash at the end of the year	36,540	47,671	65,236	89,071	114,958	144,433
GROWTH	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec						
Revenue	(0.3%)	16.3%	(0.7%)	10.2%	8.6%	10.7%
Gross profit	16.5%	15.9%	(0.7%)	16.1%	8.5%	13.1%
Operating profit	127.4%	(26.7%)	51.3%	29.8%	11.0%	19.1%
Net profit	992.5%	(54.5%)	(26.1%)	160.7%	(2.4%)	17.9%
Adj. net profit	21.1%	(14.5%)	9.8%	23.6%	0.3%	15.4%
PROFITABILITY	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec						
Gross profit margin	48.5%	48.3%	48.3%	50.9%	50.8%	51.9%
Operating margin	13.4%	8.4%	12.9%	15.2%	15.5%	16.7%
Adj. net profit margin	20.6%	15.1%	16.7%	18.8%	17.3%	18.1%
Return on equity (ROE)	12.8%	5.1%	3.4%	8.0%	7.1%	7.5%
GEARING/LIQUIDITY/ACTIVITIES	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec						
Net debt to equity (x)	(0.5)	(0.5)	(0.5)	(0.6)	(0.6)	(0.6)
Current ratio (x)	2.7	2.9	2.7	2.8	3.0	3.3
Receivable turnover days	27.0	27.0	31.6	28.8	25.6	25.3
Payable turnover days	226.5	218.6	223.5	215.9	212.6	201.7
VALUATION	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec						
P/E	13.1	42.3	40.1	15.6	16.1	13.8
P/E (diluted)	13.2	43.2	40.5	15.8	16.3	14.0
P/B	1.6	2.0	1.3	1.2	1.1	1.0
P/CFPS	15.5	47.9	17.1	10.0	12.1	11.0

Source: Company data, CMBIGM estimates. Note: The calculation of net cash includes financial assets.

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