

Financing Digital Infrastructure

Case Studies, Trends & Developments

3:00 PM - 3:45 PM

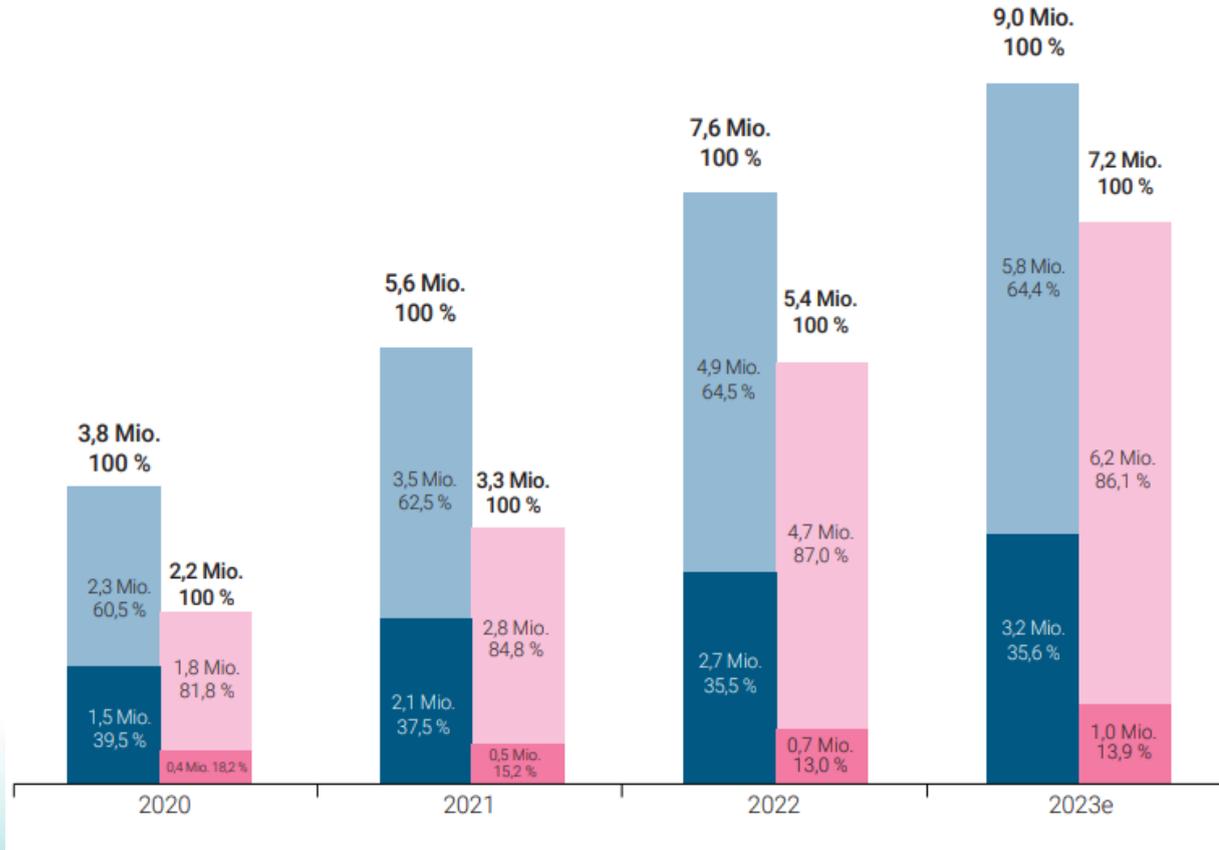
Stephan Freitas Krause, KfW IPEX-Bank

Dr. Nico Grove, kawikani

Thomas Langer, kawikani

FTTH Germany Homes Passed and Homes Activated

Competitors Homes Activated Share is higher than the incumbent's share



- Competitors: Homes Passed, not activated
- Incumbent (DTAG): Homes Passed, not activated
- Competitors: Homes Activated
- Incumbent (DTAG): Homes Activated

Source: VATM (2023)

FTTH Investment Platforms in Germany I/VII

Initially, capital was injected into smaller players; now, dominant market players have established their own fiber JV investment platforms

Platform	Investor	Informationen
Glasfaser Plus	IFM & DTAG	<ul style="list-style-type: none">– 50:50 Joint Venture with Australischen Investor ifm: GlasfaserPlus– Focus areas: rural/sub-urban– Target of 4m home sby 2028
Deutsche Glasfaser & Inexio	EQT & OMERS	<ul style="list-style-type: none">– 02/2020: Akquisition of DG by EQT (51%) und Omers (49%)– Integration of inexio– 01/2020 debt financing of €1.4bn (+ optional €0.4bn €)– Bereitstellung von 16 Banken (u.a. KfW IpeX)
UGG	Allianz & Telefonica	<ul style="list-style-type: none">– 10/2020: Joint Venture (50:50)– Target of 2.2m Homes Passed by 2027– Capex of € 5bn– Debt financing of €1.65bn € (9 banks)
Infracapital (Leonet & BBV)	Infracapital	<ul style="list-style-type: none">– 07/2018: Erwerb einer Mehrheitsbeteiligung an CCNST– 06/2020: Übernahme der BBV Deutschland Gruppe– 06/2021: Konsolidierung in der Infracapital Germany GmbH– Geplante Capex von 1 Mrd €, > 150.000 HP

Source: Kawikani Research (2023)

FTTH Investment Platforms in Germany II/VII

Initially, capital was injected into smaller players; now, dominant market players have established their own fiber JV investment platforms

Platform	Investor	Informationen
Deutsche Giganetz	Infared & DWS	<ul style="list-style-type: none">– 07/2020 Acquisition of a majority stake in DGN– Capex plan of up to €3bn– 07/2022 DWS becomes second equity investor– Capex plan raised
TNG	ICG	<ul style="list-style-type: none">– 12/2020: Acquisition of a majority stake– Target: >200,000 Homes Connected– Capex of €500m
DNS	3i	<ul style="list-style-type: none">– 04/2021: Acquisition of a 60% stake from existing shareholders– Other information is scarce
Hessenkom, ndix,novanetz, vodafone YplaY	Primevest	<ul style="list-style-type: none">– Since 2018: Primevest has invested in the passive fiber network of existing VDSL players and/or ISPs– Limited public information

Source: Kawikani Research (2023)

FTTH Investment Platforms in Germany III/VII

Initially, capital was injected into smaller players; now, dominant market players have established their own fiber JV investment platforms

Platform	Investor	Informationen
Deutsche Giga Access	DBAG	<ul style="list-style-type: none">– DGA acts as Holding for the acquisition of other networks– 09/2020: Acquisition of Northern Access GmbH– Cooperation with GVG (ServCo)
Vatenfall Eurofiber	Antin	<ul style="list-style-type: none">– 09/2020 Joint Venture (50:50)– Target of 500,000 Homes by 2026– Wholesale-only
telecolumbus	MorganStanley	<ul style="list-style-type: none">– 04/2021: Morgan Stanley acquires ~92%– Banks support the transaction in light of:– Net debt/EBITDA >6x (source: finance-magazin.de)
GVG, DTAG Garbsen, Avacomm	Palladio Partners	<ul style="list-style-type: none">– 01/2020: Acquisition of GVG Group– 05/2021: Acquisition of a majority stake in Avacomm– 05/2022: JV with StW Garbsen and DT as OpCo (~40K Homes)

Source: Kawikani Research (2023)

FTTH Investment Platforms in Germany IV/VII

Initially, capital was injected into smaller players; now, dominant market players have established their own fiber JV investment platforms

Platform	Investor	Informationen
Glasfaser direct, Eifel-Net, JobstNet	KKR / John Laing	<ul style="list-style-type: none">– 04/2021: Acquisition of two local providers– Limited public information Insolvency
Bnt, goestel, soco	Basalt	<ul style="list-style-type: none">– 2020/21 Akquisition of smaller operators in Hesse and Northrhine-Westfalia– 01/2022: Goetel debt financing of up to €345m (+ optional €200m)– Target of up to 250K homes by 2024
vodafone	altice	<ul style="list-style-type: none">– JV with Altice (50:50)– Target of up to 7m Homes– Thereof 20% in non DOCSIS areas
		<ul style="list-style-type: none">– Icon erwarb 98% der SFN in 10/2021– Zu diesem Zeitpunkt umfasste die SFN ~26 Homes Passed

Source: Kawikani Research (2023)

FTTH Investment Platforms in Germany V/VII

Initially, capital was injected into smaller players; now, dominant market players have established their own fiber JV investment platforms

Platform	Investor	Informationen
Metrofibre	DIF	<ul style="list-style-type: none">– Cooperation with Stadt Essen („ruhrfibre“)– Wholesale-only, Vodafone as tenant
wetsonnect	Westenergie & igneo	<ul style="list-style-type: none">– 07/2022: JV Westenergie (Eon) and Igneo Infrastructure Partners– Target of ~2m Kunden– Capex of €3bn
NFH, Lünecom, sewikom	UBS	<ul style="list-style-type: none">– Acquisition of Lünecom in 08/2021– Acquisition of sewikom in 10/2022– Target of >150,000 homes
Montabaur vodafone	Meridiam infrastructure	<ul style="list-style-type: none">– Co-Financing of a public-private NetCo– Open Access (L2 BSA), Vodafone as OpCo– Capex of ~€45m, 17,000 Homes

Source: Kawikani Research (2023)

FTTH Investment Platforms in Germany VI/VII

Initially, capital was injected into smaller players; now, dominant market players have established their own fiber JV investment platforms

Platform	Investor	Informationen
VX Fiber	Digital Bridge & AMP Capital	<ul style="list-style-type: none"> – VX Fiber as developer – LilaConnect GmbH is OpCo (Open Access) and ServCo – Wayss & Freytag is BuildCo – So far, the only project is Wolfenbüttel (TBC)
GlobalConnect	EQT	<ul style="list-style-type: none"> – Global Connect is a Nordic provider of backbone, data center und FTTH access products – Market entry in Germany in 2021 with the HomeNet brand in the larger Kiel area
LibertyNetworks	Liberty Global & Infravia	<ul style="list-style-type: none"> – Joint Venture (50:50) – Esatblished in 03/2021, (Colo
Open German Fiber	Primevest, MEAG, Ärzteversorgung Westfalen-Lippe	<ul style="list-style-type: none"> – JV established in 11/2022 (40:40:20): Open German Fiber – Target area: Hesse, Northrhine – Westfalia – Target of 150,000 Homes – Wholesale only

Insolvency

Source: Kawikani Research (2023)

FTTH Investment Platforms in Germany VII/VII

Initially, capital was injected into smaller players; now, dominant market players have established their own fiber JV investment platforms

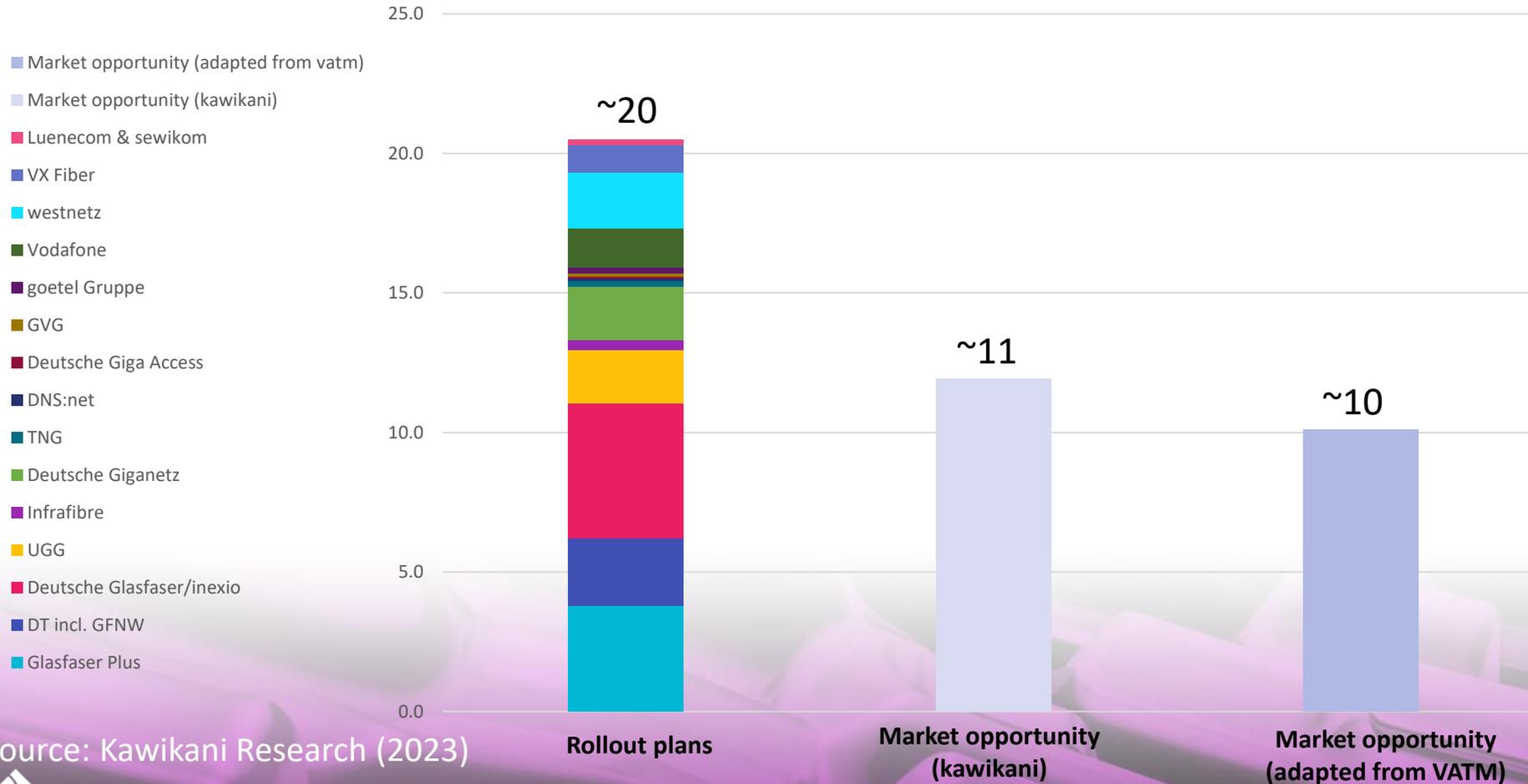
Platform	Investor	Informationen
Vitrum Fiber	Bam & PGGM	<ul style="list-style-type: none">– JV established in Q4/2022 (50:50)– Passive only– Target of 300,000 Homes– Wholesale only

Source: Kawikani Research (2023)

FTTH Investment Platforms and the Market

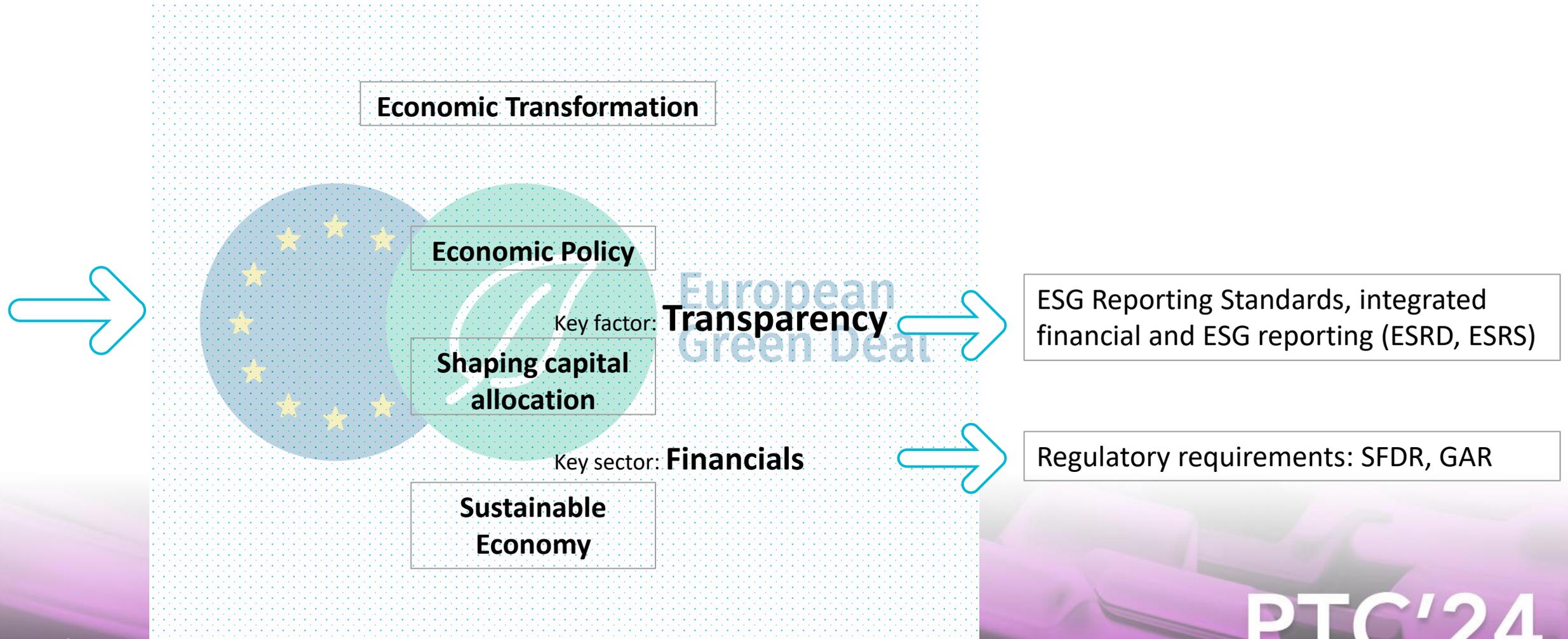
Cumulative rollout plans exceed the market opportunity by at least 8.9m homes or 75%; overbuild is inevitable

Rollout plans vs Market Opportunity (no Gigabit overbuild)
in m homes B2C in Germany, estimates per 06/2023



Source: Kawikani Research (2023)

Additional Impact: ESG and Sustainability Funds require CSRS etc.



Additional Impact: ESG and Sustainability
Funds (and banks) require CSRS etc.

Source: PwC (2023)

Fiber Investments in the Refinancing Phase

The valuation mechanics of Fiber Networks differ massively from the renewables valuations mechanics

Excursus: Valuation of Renewables

*Price * Volume * Availability*

$$P * Q * F_{(x,y,z)}$$

Valuation of Fiber Networks

*Price * Volume * Duration*

$$P(A,C) * Q(H,A,C) * T(C,P)$$

Source: Kawikani Research (2023)

Bottom Line

1,000 Days are left for the Transaction Back Office (as of August 2023)



Source: Kawikani Research (2023)

Mahalo!



Stephan Freitas Krause

VP - Digital Infrastructure Financing
KfW IPEX-Bank



Nico Grove

MD
kawikani GmbH & Co. KG



Thomas Langer

MD
kawikani GmbH & Co. KG