

Rakuten, Inc.

Patent Portfolio Analysis

May 2019

Introduction

Rakuten, Inc. is one of the central players in Japan's Internet industry. The company is primarily engaged in the Internet services, Fintech and mobile. Rakuten's Internet Services segment consists of e-commerce, travel reservation and digital content sites, and professional sports facilities operation. The company's FinTech business revolves around Internet banking and securities services, life insurance services and electronic money services. The Mobile segment is mainly engaged in the provision of communication services and messaging services.

For this report, we have analyzed a total of 4514 currently active published patent applications in the Rakuten portfolio. Unless otherwise stated, the report displays numbers for published patent applications. The analytics are presented in the various charts and tables that follow. These include the following,

- Portfolio Summary
- Published Applications – Growth
- Key Geographies
- Top Technologies
- Top Sub-technologies
- Top Forward Citing (FC) Assignees
- Technologies cited by the FC Assignees
- Topic Map - Concepts
- Top CPC Codes
- Evolution of the Top CPC Codes
- Select Key Patents in the Portfolio
- Patent Quality by Sub-technologies
- Key Acquisitions of the Portfolio
- Portfolio taxonomy
- Competitor comparison by technology categories

Insights

- A significant upward trend is observed post 2010, in the overall number of published patents. Post 2016, there is a decline in the publication trend for Rakuten. Year 2014 marks the peak year of activity with 553 publications.
- The U.S. and Japan are the favoured filing destinations for Rakuten. Each of these jurisdictions hold a third of its total active published applications.
- About 50% of Rakuten's active patent portfolio covers the technology area of 'Digital Data Processing'.
- Technologies covered by the CPC code G06Q 30/02 (E-Commerce) displayed an increased year-on-year growth till around 2013, but its growth has tapered off in recent years.
- Rakuten's portfolio has an average Relecura Star rating of 2.31 out of 5. Typically, a patent with a Relecura Star rating of 3 or more is deemed as one of high-quality.

References

1. [Rakuten \(Wikipedia.org\)](https://en.wikipedia.org/wiki/Rakuten)

Published Applications - Summary

TOTAL DOCUMENTS COUNT (APPLICATIONS)
4,514

PUBLICATION TYPES



● Applications ● Grants

Peak Year of Activity
2014 (553)

Top Active Jurisdiction
US (1,658)

IP TYPES



● Invention ● Design

No of technologies (141)

Top Rated
US6671683B2 (4)

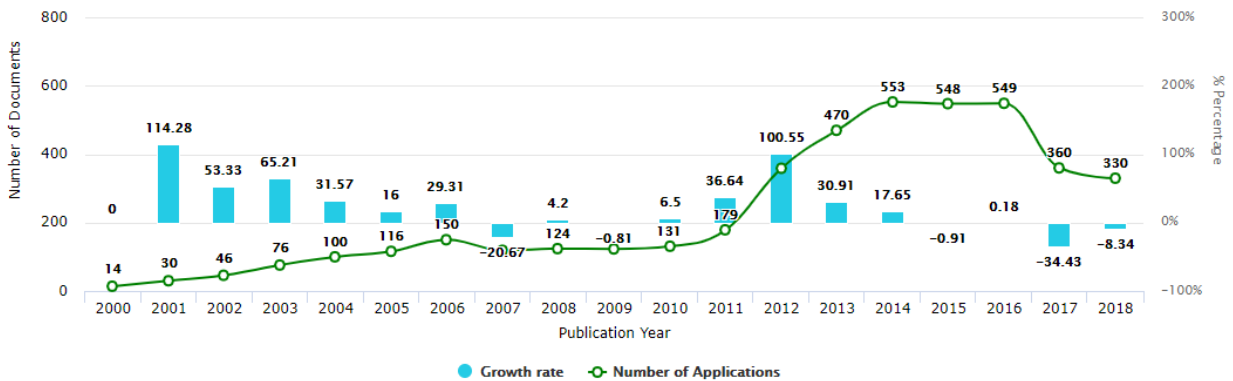
Top Cited
US7043757B2 (229)

PATENT BY STAR RATING

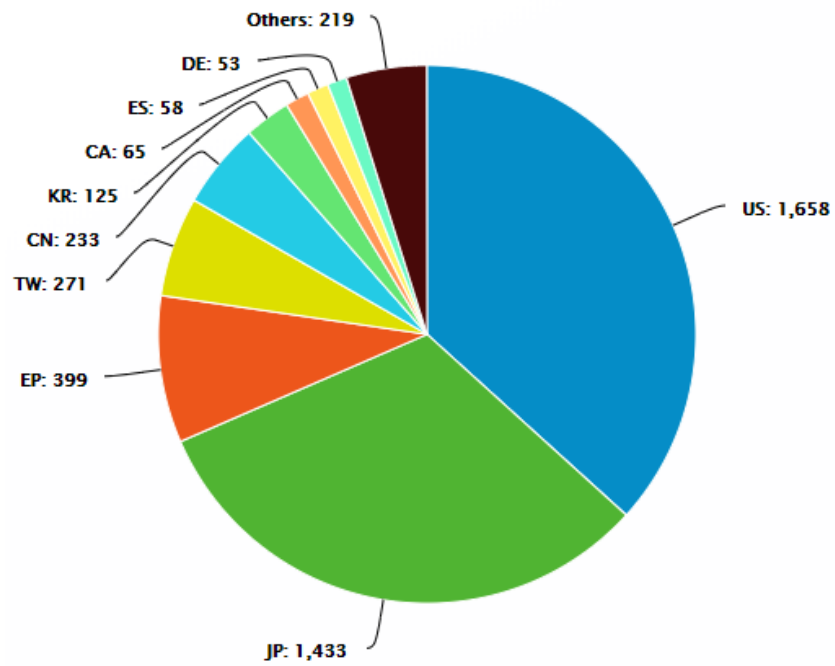
2.31



Published Applications – Growth



Key Geographies



Top Technologies

Technologies	# Applications
Digital Data Processing	2258
Data Processing Systems	1933
Data Transmission	823
Pictorial Communication	504
Image Data Processing	422
Telephonic Communication	288
Data Presentation	287
Wireless Communication Networks	279
Information Storage	201
Displays (Circuits)	186

Top Sub-technologies

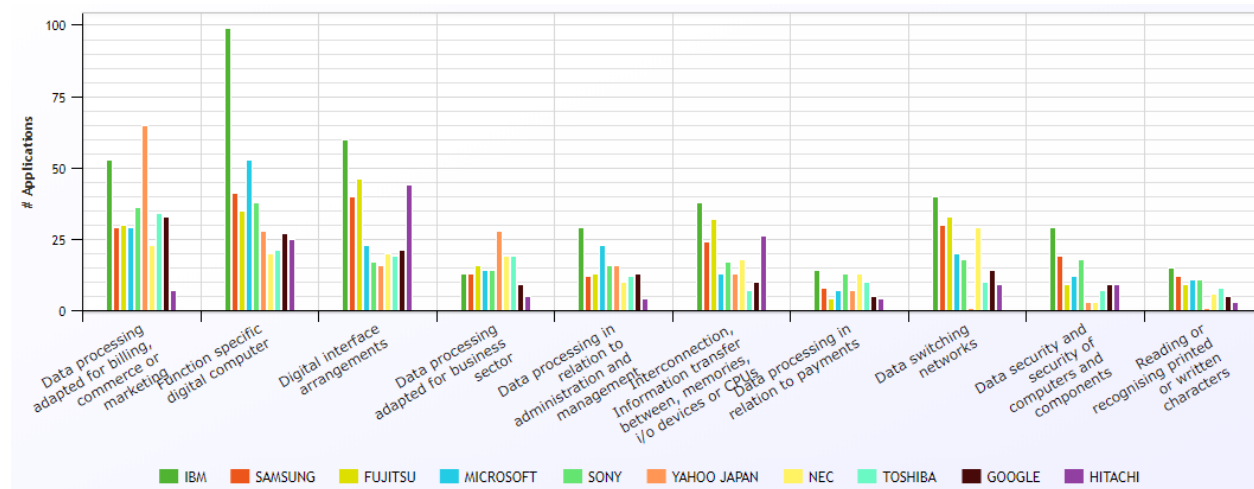
Sub-Technologies	# Applications
Data processing adapted for billing, commerce or marketing	1451
Function specific digital computer	1134
Digital interface arrangements	689
Data processing adapted for business sector	607
Data processing in relation to administration and management	512
Interconnection, Information transfer between, memories, i/o devices or CPUs	389
Data processing in relation to payments	335
Data switching networks	316
Data security and security of computers and components	237
Reading or recognising printed or written characters	228

Top Forward Citing (FC) Assignees

FC Assignees	# Applications
IBM	324
SAMSUNG	259
FUJITSU	195
SONY	195
MICROSOFT	185
HITACHI	153
PANASONIC	153
NEC	152
TOSHIBA	143

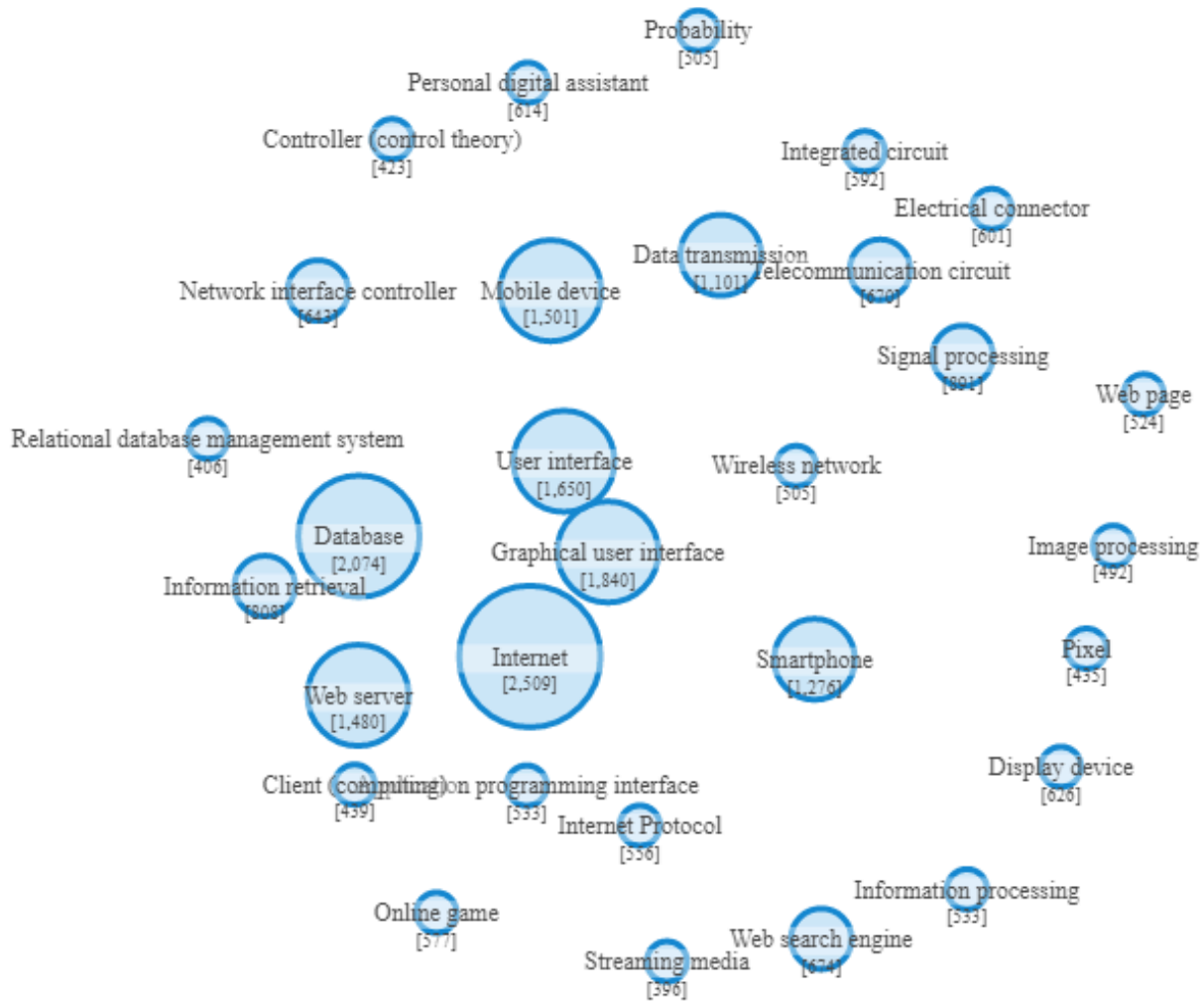
FC Assignees	# Applications
AT&T	133
CANON	118
GOOGLE	111
INTEL	99
LG	98
YAHOO JAPAN	85
MITSUBISHI	81
AMAZON	80
HEWLETT PACKARD	76

Technologies cited by FC Assignees



Topic Map – Concepts

- The bubble size corresponds to the total number of patent applications for each concept.
- The bubble proximity corresponds to the “relatedness” of the individual concepts.

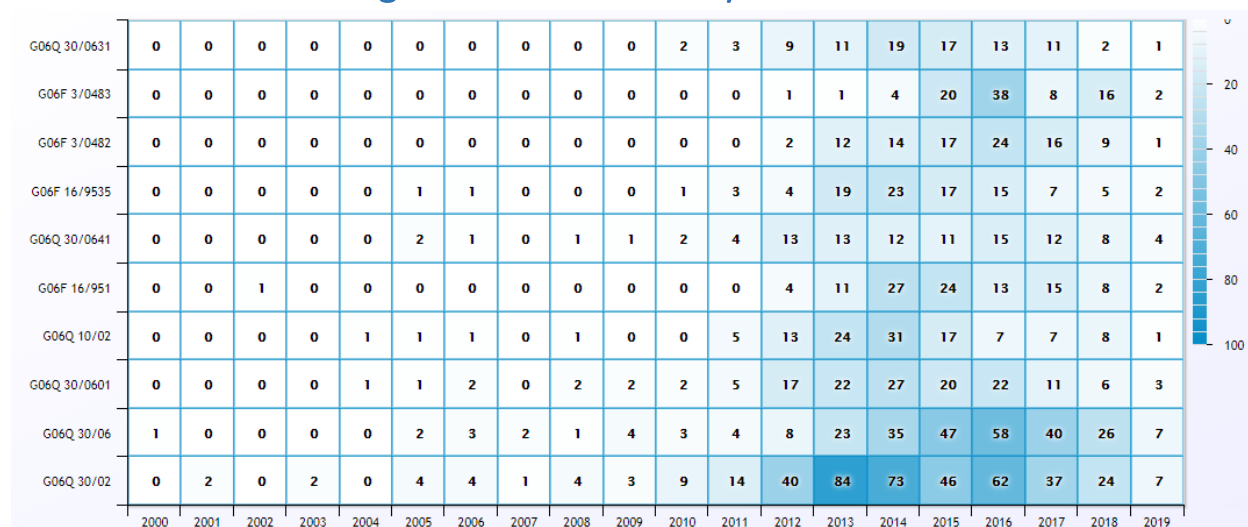


Published Applications - Top CPC Codes

CPC Code	Description	# Applications
G06Q 30/02	Data processing adapted for billing, commerce or marketing >> Marketing, e.g. market research and analysis, surveying, promotions, advertising, buyer profiling, customer management or rewards; Price estimation or determination	416
G06Q 30/06	Data processing adapted for billing, commerce or marketing >> Buying, selling or leasing transactions	264
G06Q 30/0601	Data processing adapted for billing, commerce or marketing >> Electronic shopping	143
G06Q 10/02	Data processing in relation to administration and management >> Reservations, e.g. for tickets, services or events	117

CPC Code	Description	# Applications
G06F 16/951	Information retrieval; Database structures therefor; File system structures therefor >> Indexing; Web crawling techniques	105
G06Q 30/0641	Data processing adapted for billing, commerce or marketing >> Shopping interfaces	99
G06F 16/9535	Information retrieval; Database structures therefor; File system structures therefor >> Search customisation based on user profiles and personalisation	98
G06F 3/0482	Digital interface arrangements >> interaction with lists of selectable items, e.g. menus	95
G06F 3/0483	Digital interface arrangements >> interaction with page-structured environments, e.g. book metaphor	90
G06Q 30/0631	Data processing adapted for billing, commerce or marketing >> Item recommendations	88
G06F 21/10	Data security and security of computers and components >> Protecting distributed programs or content, e.g. vending or licensing of copyrighted material	81
G06F 3/0488	Digital interface arrangements >> using a touch-screen or digitiser, e.g. input of commands through traced gestures	77
G06Q 30/0255	Data processing adapted for billing, commerce or marketing >> based on user history	77
G06Q 30/00	Data processing adapted for billing, commerce or marketing >> Commerce, e.g. shopping or e-commerce	75
G06F 3/0485	Digital interface arrangements >> Scrolling or panning	74
G06Q 10/10	Data processing in relation to administration and management >> Office automation, e.g. computer aided management of electronic mail or groupware ; Time management, e.g. calendars, reminders, meetings or time accounting	71
G06Q 30/0643	Data processing adapted for billing, commerce or marketing >> Graphical representation of items or shoppers	71
G06F 3/04842	Digital interface arrangements >> Selection of a displayed object	66
G06F 3/04883	Digital interface arrangements >> for entering handwritten data, e.g. gestures, text	65
G06F 16/9577	Information retrieval; Database structures therefor; File system structures therefor >> Optimising the visualization of content	62

Evolution of Technologies - CPC Code Analysis

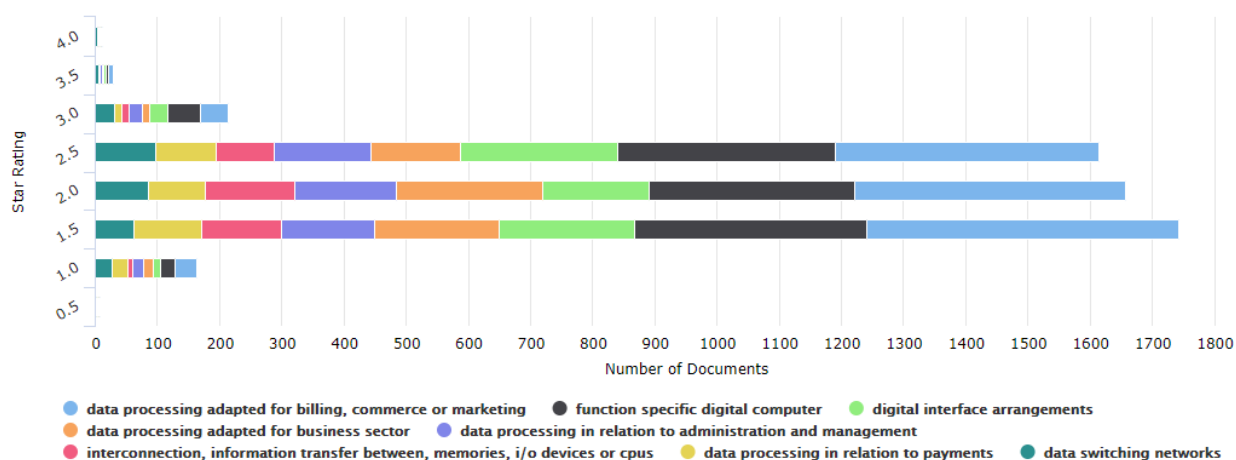


Select Key Patents in the Portfolio

Publication Number	Title	Star Rating	# Forward Citations
US8543095B2	Multimedia services include method, system and apparatus operable in a different data processing network, and sync other commonly owned apparatus	4	124
US8160064B2	Systems and methods for providing a network link between broadcast content and content located on a computer network	4	191
US8306874B2	Method and apparatus for word of mouth selling via a communications network	4	128
US6829250B2	Automatic programming of customer premises equipment for vertical services integration	4	168
US7043757B2	System and method for malicious code detection	4	229
US7529676B2	Audio device control device, audio device control method, and program	4	150
US6880082B2	Broadcast verification system, broadcast verification method, broadcast verification apparatus and storage medium storing broadcast verification program	4	179
US8417938B1	Environment preserving cloud migration and management	4	92
US6424657B1	Traffic queueing for remote terminal DSLAMs	4	172
US8762206B2	Method and system for word of mouth advertising via a communications network	4	160

Patent Quality by Sub-technologies

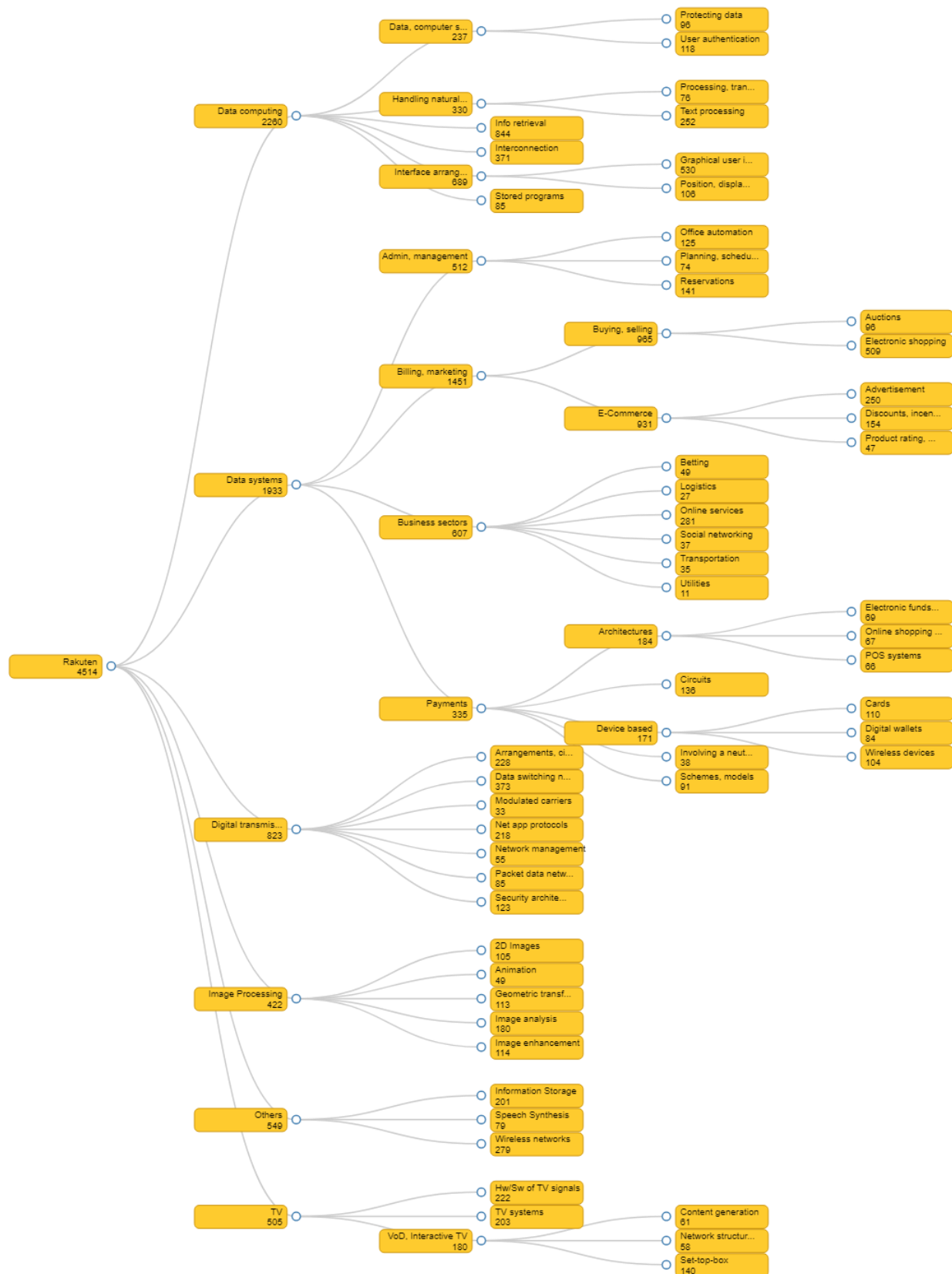
(*High Quality ~ Relecura Star Rating 3 or more on a scale of 5)



Key Acquisitions of the Portfolio

Seller	# Applications	Technologies
JVC KENWOOD	186	Information storage (83), Pictorial communication (58), Digital data processing (36), Data transmission (33)
KOBO	158	Digital data processing (142), Data processing systems (36), Data transmission (20), Displays (circuits) (14), Image data processing (12)
NEC	120	Data transmission (73), Digital data processing (46), Pictorial communication (28), Telephonic communication (28), Wireless communication networks (22)
IBM	107	Digital data processing (86), Data transmission (28), Data processing systems (24), Greentech - others (9), Information storage (7)
GLOBAL D LLC	80	Digital data processing (73), Pictorial communication (44), Photography - camera (37), Data transmission (26), Optical elements (26)
AT&T	77	Digital data processing (68), Data transmission (49), Telephonic communication (26), Data processing systems (16), Wireless communication networks (15)
VERIZON	40	Data transmission (30), Telephonic communication (22), Data processing systems (16), Digital data processing (16), Communication switches & relays (8)
MITSUBISHI	35	Photography - camera (30), Pictorial communication (30), Optical elements (26), Displays (circuits) (17)
HITACHI	31	Digital data processing (30), Data transmission (16), Greentech - others (13), Information storage (9), Printed circuits (7)
INTERDIGITAL	31	Signal transmission (22), Wireless communication networks (22), Data transmission (19), Multiplex communication (19)

Portfolio Taxonomy



Competitor Comparison – Break-up by Technology Categories

(# Applications given for color-coded categories)

Technology Categories			Rakuten	Amazon	Alibaba	Ebay	Walmart	
Data computing	Data, computer security	Protecting data	96	159	85	30	5	
		User authentication	118	466	1126	162	38	
	Handling natural language	Processing, translating	76	114	124	62	2	
		Text processing	252	389	506	140	31	
	Info retrieval		844	2249	4621	952	383	
	Interconnection		371	381	278	44	14	
	Interface arrangements	Graphical user interfaces	530	855	1300	426	117	
		Position, displacement	106	448	106	28	32	
Stored programs		85	2264	2315	167	94		
Data systems	Admin, management	Office automation	125	225	248	141	117	
		Planning, scheduling	74	350	421	98	379	
		Reservations	141	24	51	115	67	
	Billing, marketing	Buying, selling	Auctions	96	97	30	439	9
			Electronic shopping	509	1282	942	1517	757
		E-Commerce	Advertisement	250	422	365	443	133
			Discounts, incentives	154	146	134	134	101
	Business sectors	Product rating, recommendation		47	64	88	106	14
			Betting	49	0	0	0	1
			Logistics	27	113	177	12	192
			Online services	281	78	177	92	46
			Social networking	37	105	175	193	55
			Transportation	35	29	66	5	65
			Utilities	11	6	12	3	6
	Payments	Architectures	Electronic funds transfer	69	108	260	131	39
			Online shopping	67	117	128	104	82
			POS systems	66	91	88	93	393
		Circuits		136	17	116	53	65
		Device based	Cards	110	44	83	43	36
Digital wallets			84	69	54	44	26	
Wireless devices			104	65	536	174	158	
Involving neutral party			38	37	166	37	20	
	Schemes, models	91	23	194	81	35		
Digital transmission	Arrangements, circuits	228	2921	3954	441	179		
	Data switching networks	373	2175	1880	276	81		
	Modulated carriers	33	2	3	0	0		
	Net app protocols	218	2531	2523	487	217		
	Network management	55	1074	374	55	25		
	Packet data networks	85	274	208	43	20		
	Security architecture	123	1769	1884	242	132		
Image Processing	2D Images	105	160	140	111	32		
	Animation	49	18	65	10	1		
	Geometric	113	60	119	26	1		
	Image analysis	180	343	265	119	104		
	Image enhancement	114	252	137	91	64		
Others	Information Storage	201	216	34	0	5		
	Speech Synthesis	79	619	290	31	72		
	Wireless networks	279	878	1296	388	357		
TV	Hw/Sw of TV signals	222	501	139	53	94		
	TV systems	203	390	82	26	115		
	VoD, Interactive TV	Content generation	61	224	105	43	4	
		Network structure, processes	58	123	58	2	0	
		Set-top-box	140	346	276	65	8	

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