Intelligent Wave / 4847

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How to read a Shared Research report: This report begins with the trends and outlook section, which discusses the company's most recent earnings. First-time readers should start at the business section later in the report.

Executive summary

Software developer, and member of the Dai Nippon Printing group; strength in credit card transaction processing

- Intelligent Wave mostly sells software solutions based on in-house developed package software. The main clients are in the financial services industry; core products focus on credit card transaction processing, low-latency secure communications, and data protection. Dai Nippon Printing Co., Ltd. (DNP; TSE1: 7912) holds 50%+ of the company shares.
- The company's businesses are broadly divided into two mainstay segments: the Financial Systems Solutions segment, which generated about 90% of sales and nearly all operating profit in FY06/19, and the Product Solutions segment.
- The Financial Systems Solutions segment combines hardware and software sales, with a focus on software development for clients in the financial industry. The company offers added-value integrated systems and maintenance services. The company's information processing technology is mainly used in online systems for 24 hours a day, 365 days a year real-time reliable credit card transaction processing. This segment has the following three core products: *NET+1* which is in-house package software having top domestic share in the field of credit card transaction processing and is involved in about 70% of authorization (credit inquiries from member stores and authorization at credit card companies) systems of Japan's primary credit card companies; *ACE-Plus* which is a software system for detecting and preventing fraudulent use of credit cards; and *OnCore*, incorporating the functions of Net+1, which provides functions such as network connection for smartphone payment.
- At the Product Solutions segment, the company offers value-added systems and maintenance services for various industries and sectors, with a focus on in-house package software for information security and third-party package software for cybersecurity. The segment has products including *CWAT*, an in-house software for information security and *Traps*, a third-party product for cybersecurity.

Trends and outlook

- For FY06/19, IWI reported parent sales of JPY10.4bn (-1.5% YoY), operating profit of JPY922mn (+68.3% YoY), recurring profit of JPY954mn (+66.2% YoY), and net income of JPY684mn (+81.2% YoY).
- For FY06/20, IWI forecasts sales of JPY10.6bn (+1.5% YoY), operating profit of JPY1.0bn (+8.5% YoY), recurring profit of JPY1.0bn (+4.9% YoY), and net income of JPY720mn (+5.3% YoY). The company aims to achieve operating profit of JPY1.0bn one year earlier than projected under the previous medium-term management plan. At the Financial Systems Solutions segment, the company is targeting sales of JPY9.4bn (+0.7% YoY) and at the Product Solutions segment, sales of JPY1.2bn (+8.5% YoY).
- The company unveiled a new medium-term business plan (covering FY06/20 to FY06/22) along with its announcement of full-year results for FY06/19. In the final year of the new medium-term plan (FY06/22), the company is targeting sales of JPY12.0bn (+14.9% versus FY06/19), operating profit of JPY1.2bn (+30.2% versus FY06/19), and an operating profit margin of 10.0%. The new plan assumes no major changes in the current business environment. At the mainstay Financial Systems Solutions segment, the new medium-term plan sees the company's cloud services business serving as the main growth driver with average annual growth of 30% over the next three years (through FY06/22), and sees this along with slow-but-steady growth in sales from miscellaneous development projects (projected annual growth of 1.9%) underpinning overall sales at the segment to produce a growth rate of 4.3% per annum for segment sales as a whole. With regard to new products such as its next-generation *NET+1* software and new products for the broadcasting industry, the new medium-term plan assumes growing contributions to sales from this area over the medium term. The company did not offer any definitive figures indicating exactly how much growth would be coming from new products, however, saying only that it is working on initiatives to ensure that sales each year come in ahead of plan.

Strengths and weaknesses

Shared Research thinks that the two main strengths of Intelligent Wave are its dominant position in the front-end credit card market, and its cooperation with DNP. Weaknesses: its small size in a market where size matters, and a relatively weak sales channel (see Strengths and weaknesses).

Key financial data

Income statement (JPYmn)	FY06/09 Cons.	FY06/10 Cons.	FY06/11 Cons.	FY06/12 Cons.	FY06/13 Cons.	FY06/14 Cons.	FY06/15 Cons.	FY06/16 Cons.	FY06/17 Parent	FY06/18 Parent	FY06/19 Parent	FY06/20 Parent Est.
Sales	**5,527**	**4,957**	**4,763**	**5,242**	**5,871**	**6,558**	**6,160**	**7,207**	**8,470**	**10,604**	**10,443**	**10,600**
YoY	-17.5%	-10.3%	-3.9%	10.1%	12.0%	11.7%	-6.1%	17.0%	17.5%	25.2%	-1.5%	1.5%
Gross profit	**2,020**	**1,837**	**1,642**	**1,374**	**473**	**1,342**	**1,779**	**1,993**	**2,132**	**2,223**	**2,807**	
YoY	-12.4%	-9.1%	-10.6%	-16.3%	-65.6%	183.4%	32.6%	12.0%	7.0%	4.2%	26.3%	
GPM	36.6%	37.1%	34.5%	26.2%	8.1%	20.5%	28.9%	27.7%	25.2%	21.0%	26.9%	
Operating profit	**229**	**358**	**321**	**132**	**-678**	**146**	**484**	**714**	**703**	**548**	**922**	**1,000**
YoY	-45.3%	56.6%	-10.3%	-59.0%	-	-	232.8%	47.5%	-1.6%	-22.0%	68.3%	8.5%
OPM	4.1%	7.2%	6.7%	2.5%	-11.5%	2.2%	7.9%	9.9%	8.3%	5.2%	8.8%	9.4%
Recurring profit	**235**	**388**	**342**	**155**	**-587**	**184**	**490**	**731**	**766**	**574**	**954**	**1,040**
YoY	-41.8%	64.9%	-11.8%	-54.8%	-	-	166.6%	49.0%	4.9%	-25.1%	66.2%	9.1%
RPM	4.3%	7.8%	7.2%	2.9%	-10.0%	2.8%	8.0%	10.1%	9.0%	5.4%	9.1%	9.8%
Net income	**188**	**212**	**129**	**270**	**-349**	**87**	**471**	**479**	**547**	**377**	**684**	**720**
YoY	-	12.6%	-38.9%	108.9%	-	-	443.2%	1.6%	14.3%	-31.0%	81.2%	5.3%
Net margin	3.4%	4.3%	2.7%	5.2%	-5.9%	1.3%	7.6%	6.6%	6.5%	3.6%	6.5%	6.8%
Per share data												
Shares issued (year-end; '000)	263,400	263	263	263	263	26,340	26,340	26,340	26,340	26,340	26,340	
EPS	761.3	846.0	491.5	1,026.9	-1,325.3	3.29	17.89	18.18	20.78	14.36	25.99	27.37
Dividend per share	500.0	500.0	500.0	500.0	500.0	5.0	5.0	6.0	7.0	7.0	9.0	9.0
Book value per share	16,684	17,626	17,866	18,680	16,884	169	184	192	215	217	242	
Balance sheet (JPYmn)												
Cash and cash equivalents	1,686	2,090	2,783	2,808	2,085	2,420	2,957	2,852	2,578	2,840	3,255	
Total current assets	**3,127**	**3,450**	**3,822**	**4,335**	**3,560**	**3,524**	**4,560**	**4,682**	**4,985**	**5,034**	**6,054**	
Tangible fixed assets	405	403	388	327	307	290	277	401	420	520	541	
Investments and other assets	1,323	1,470	1,375	1,495	1,573	1,459	1,359	1,388	1,682	1,768	2,096	
Intangible fixed assets	157	128	132	206	315	367	285	557	1,421	1,515	1,341	
Total fixed assets	**1,885**	**2,002**	**1,895**	**2,028**	**2,195**	**2,116**	**1,921**	**2,345**	**3,523**	**3,803**	**3,978**	
Total assets	**5,012**	**5,451**	**5,717**	**6,363**	**5,755**	**5,640**	**6,482**	**7,027**	**8,508**	**8,837**	**10,032**	
Accounts payable	290	104	249	617	377	192	321	363	553	543	332	
Short-term debt	0	0	0	0	0	0	0	0	0	0	0	
Total current liabilities	**697**	**587**	**765**	**1,147**	**1,007**	**881**	**1,150**	**1,373**	**2,252**	**2,523**	**3,058**	
Long-term debt	0	0	0	0	0	0	0	0	0	0	0	
Total long-term liabilities	**198**	**221**	**246**	**296**	**301**	**307**	**497**	**591**	**609**	**599**	**601**	
Total liabilities	**895**	**808**	**1,011**	**1,443**	**1,308**	**1,188**	**1,647**	**1,964**	**2,861**	**3,122**	**3,660**	
Net assets	**4,117**	**4,643**	**4,706**	**4,920**	**4,447**	**4,451**	**4,835**	**5,063**	**5,648**	**5,715**	**6,373**	
Total interest-bearing debt	0	0	0	0	0	0	0	0	0	0	0	
Cash flow statement (JPYmn)												
Cash flows from operating activities	432	301	795	252	-588	620	839	124	1,172	1,213	1,237	
Cash flows from investing activities	-107	-200	-61	-25	3	-47	-263	-192	-1,151	-604	-602	
Cash flows from financing activities	-123	310	-132	-138	-142	-143	-143	-34	-198	-349	-220	
Financial ratios												
ROA (RP-based)	4.6%	7.4%	6.1%	2.6%	-	3.2%	8.1%	10.8%	9.9%	6.6%	10.1%	
ROE	4.6%	4.8%	2.8%	5.6%	-	1.9%	10.1%	9.7%	10.3%	6.6%	11.3%	
Equity ratio	82.2%	85.2%	82.3%	77.3%	77.3%	78.9%	74.6%	72.1%	66.4%	64.7%	63.5%	

Source: Shared Research based on company data
Note: Figures may differ from company materials due to differences in rounding methods.
Note: The company performed a 100-for-1 stock split on January 1, 2014.
Note: On June 28, 2016, the company finished liquidating consolidated subsidiary Intelligent Wave Korea Inc. FY06/17 results apply only to the parent company and are not consolidated (YoY growth rate figures for FY06/17 are for reference).

Recent updates

Highlights

On **September 26, 2019**, Intelligent Wave Inc. (IWI) announced the buyback of its own shares via after-hour trading (ToSTNeT-3).

Reasons for and method of acquisition

- ▷ The company resolved to buy back its own shares to enhance shareholder returns and to provide restricted stock awards to its directors and employees.
- ▷ Commissioned share purchase at the closing price of JPY814 (including the last special quote price) as of September 26, 2019 through the Off-Auction Own Share Repurchase Trading System (ToSNeT-3) of the Tokyo Stock Exchange at 8:45 a.m. on September 27, 2019. Purchase order limited to this trading period.

Details of the planned share buyback

- ▷ Type of shares to be acquired: Common stock of the company
- ▷ Total number of shares to be acquired: Up to 167,200 shares
  (equal to 0.64% of total shares issued excluding treasury shares)
- ▷ Aggregate acquisition cost: Up to JPY234mn

On **the same day**, the company announced disposal of treasury shares as restricted stock awards.

Disposal of treasury shares as restricted stock awards to directors

- ▷ Disposal date: October 25, 2019
- ▷ Type and total number of shares to be disposed: 2,800 common shares of the company
- ▷ Disposal price: JPY819 per share
- ▷ Total disposal value: JPY2,283,200

Disposal of treasury shares as restricted stock awards to employees

- ▷ Disposal date: December 6, 2019
- ▷ Type and total number of shares to be disposed: 164,400 common shares of the company
- ▷ Disposal price: JPY819 per share
- ▷ Total disposal value: JPY134,643,600

On **September 11, 2019**, Shared Research updated the report following interviews with the company.

On **August 7, 2019**, the company announced earnings results for full-year FY06/19, a surplus dividend (dividend increase), and a new medium-term management plan; see the results section for details.

For previous releases and developments, please refer to the News and topics section.

Trends and outlook

Quarterly trends and results

Quarterly performance (JPYmn)	FY06/17 (parent) Q1	Q2	Q3	Q4	FY06/18 (parent) Q1	Q2	Q3	Q4	FY06/19 (parent) Q1	Q2	Q3	Q4		
Sales	1,654	2,140	2,263	2,413	2,322	2,371	3,136	2,775	2,337	2,702	2,650	2,754		
YoY	24.2%	28.5%	19.7%	4.0%	40.4%	10.8%	38.6%	15.0%	0.7%	14.0%	-15.5%	-0.8%		
Gross profit	342	572	656	563	551	472	564	636	526	672	884	725		
YoY	3.1%	19.8%	18.0%	-10.5%	61.1%	-17.4%	-14.0%	13.0%	-4.6%	42.3%	56.9%	14.0%		
GPM	21%	26.7%	29.0%	23.3%	23.7%	19.9%	18.0%	22.9%	22.5%	24.9%	33.4%	26.3%		
SG&A expenses	304	362	381	383	422	411	387	455	455	474	478	479		
YoY	2.3%	17.1%	15.8%	11.3%	38.8%	13.5%	1.7%	18.8%	7.8%	15.3%	23.4%	5.2%		
SG&A ratio	18.4%	16.9%	16.8%	15.9%	18.2%	17.3%	12.3%	16.4%	19.5%	17.5%	18.0%	17.4%		
Operating profit	38	210	275	180	129	61	177	181	71	198	406	246		
YoY	9.9%	24.8%	21.0%	-36.8%	239.6%	-70.7%	-35.7%	0.5%	-45.1%	222.8%	130.1%	36.0%		
OPM	2.3%	9.8%	12.1%	7.5%	5.5%	2.6%	5.6%	6.5%	3.0%	7.3%	15.3%	8.9%		
Recurring profit	37	237	289	203	128	69	176	201	79	203	407	265		
YoY	-7.9%	35.5%	25.5%	-28.8%	243.1%	-71.0%	-39.1%	-1.0%	-38.7%	195.2%	130.9%	32.3%		
RPM	2.3%	11.1%	12.8%	8.4%	5.5%	2.9%	5.6%	7.2%	3.4%	7.5%	15.3%	9.6%		
Net income	20	171	215	141	83	46	109	139	48	157	262	217		
YoY	-40.1%	53.2%	52.0%	-26.7%	313.8%	-73.2%	-49.2%	-1.2%	-42.3%	240.7%	140.1%	56.1%		
Net margin	1.2%	8.0%	9.5%	5.8%	3.6%	1.9%	3.5%	5.0%	2.1%	5.8%	9.9%	7.9%		
Cumulative	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**% of FY**	**FY Est.**
Sales	1,654	3,793	6,057	8,470	2,322	4,693	7,829	10,604	2,337	5,039	7,689	10,443	97.6%	10,700
YoY	24.2%	26.6%	23.9%	17.5%	40.4%	23.7%	29.3%	25.2%	0.7%	7.4%	-1.8%	-1.5%		0.9%
Gross profit	342	914	1,570	2,132	551	1,023	1,587	2,223	526	1,198	2,082	2,807		
YoY	3.1%	13.0%	15.0%	7.0%	61.1%	12.0%	1.1%	4.2%	-4.6%	17.1%	31.2%	26.3%		
GPM	20.7%	24.1%	25.9%	25.2%	23.7%	21.8%	20.3%	21.0%	22.5%	23.8%	27.1%	26.9%		
SG&A expenses	304	666	1,047	1,430	422	833	1,220	1,675	455	929	1,407	1,885		
YoY	2.3%	9.9%	12.0%	11.8%	38.8%	25.0%	16.5%	17.1%	7.8%	11.5%	15.3%	12.5%		
SG&A ratio	18.4%	17.6%	17.3%	16.9%	18.2%	17.8%	15.6%	15.8%	19.5%	18.4%	18.3%	18.1%		
Operating profit	38	248	523	703	129	190	367	548	71	269	676	922	104.7%	880
YoY	9.9%	22.3%	21.6%	-1.6%	239.6%	-23.3%	-29.8%	-22.0%	-45.1%	41.5%	84.2%	68.3%		60.7%
OPM	2.3%	6.5%	8.6%	8.3%	5.5%	4.1%	4.7%	5.2%	3.0%	5.3%	8.8%	8.8%		8.2%
Recurring profit	37	275	564	766	128	197	373	574	79	282	688	954	106.0%	900
YoY	-7.9%	27.3%	26.4%	4.9%	243.1%	-28.3%	-33.8%	-25.1%	-38.7%	43.0%	84.5%	66.2%		56.9%
RPM	2.3%	7.2%	9.3%	9.0%	5.5%	4.2%	4.8%	5.4%	3.4%	5.6%	9.0%	9.1%		8.4%
Net income	20	192	406	547	83	129	238	377	48	205	467	684	110.3%	620
YoY	-40.1%	31.7%	41.7%	14.3%	313.8%	-32.5%	-41.3%	-31.0%	-42.3%	58.4%	95.8%	81.2%		64.3%
Net margin	1.2%	5.1%	6.7%	6.5%	3.6%	2.8%	3.0%	3.6%	2.1%	4.1%	6.1%	6.5%		5.8%

Source: Shared Research based on company data
Note: Figures may differ from company materials due to differences in rounding methods.
Note: Company estimates based on most recent figures
Note: The company switched to non-consolidated reporting starting in Q1 FY06/17. YoY comparisons are made with consolidated results for Q1 FY/06/16 since differences between consolidated and parent earnings for that period were negligible.

Results by segment

	(New segments *)												
Quarterly	FY06/17 (parent)				FY06/18 (parent)				FY06/19 (parent)				FY06/19 (parent)
(JPYmn)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Sales	1,654	2,140	2,263	2,413	2,322	2,371	3,136	2,775	2,337	2,702	2,650	2,754	
Financial Systems Solutions	1,460	1,852	2,029	2,107	2,146	1,931	2,929	2,326	2,140	2,475	2,454	2,269	
Product Solutions	194	288	234	307	177	439	207	449	197	227	196	485	
Operating profit	38	210	275	180	129	61	177	181	71	198	406	246	
Financial Systems Solutions	53	164	304	131	164	107	225	103	105	213	431	142	
Product Solutions	-15	46	-29	49	-36	-46	-48	78	-34	-14	-25	104	
OPM	2.3%	9.8%	12.1%	7.5%	5.5%	2.6%	5.6%	6.5%	3.0%	7.3%	15.3%	8.9%	
Financial Systems Solutions	3.6%	8.8%	15.0%	6.2%	7.7%	5.6%	7.7%	4.4%	4.9%	8.6%	17.6%	6.3%	
Product Solutions	-	16.1%	-	16.0%	-	-	-	17.4%	-	-	-	21.4%	
Sales breakdown													
Financial Systems Solutions	1,460	1,852	2,029	2,107	2,146	1,931	2,929	2,326	2,140	2,475	2,454	2,269	
Software development	1,036	1,119	1,216	1,464	1,487	1,208	2,328	1,416	1,311	1,480	1,354	1,523	
Maintenance	218	224	239	238	239	264	276	262	268	273	288	295	
Hardware	87	364	384	139	324	226	129	244	265	485	239	151	
In-house packaged software	78	93	122	148	84	191	132	221	229	196	517	207	
(Cloud services)	0	43	68	67	81	95	101	109	126	159	174	178	
Third-party packaged software	39	51	70	117	8	43	66	182	64	41	56	93	
Product Solutions	194	288	234	307	177	439	207	449	197	227	196	485	
Software development	21	17	17	7	10	11	46	22	15	14	9	34	
Maintenance	26	40	48	139	23	28	31	130	23	25	84	150	
Hardware	3	0	43	0	5	248	30	82	1	1	0	80	
In-house packaged software	20	67	23	12	40	3	2	13	42	71	2	18	
Third-party packaged software	122	162	104	149	97	149	97	202	115	115	103	201	
Cumulative	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**% of FY**	**FY Est.**
Sales	1,654	3,793	6,057	8,470	2,322	4,693	7,829	10,604	2,337	5,039	7,689	10,443	97.6%	10,700
Financial Systems Solutions	1,460	3,312	5,341	7,448	2,146	4,077	7,006	9,332	2,140	4,615	7,068	9,337	100.4%	9,300
Product Solutions	194	481	715	1,022	177	616	823	1,272	197	425	621	1,106	79.0%	1,400
Operating profit	38	248	523	703	129	190	367	548	71	269	676	922	104.7%	880
Financial Systems Solutions	53	216	520	651	164	272	496	599	105	317	748	890	106.0%	840
Product Solutions	-15	31	2	51	-36	-81	-129	-51	-34	-48	-73	31	77.8%	40
OPM	2.3%	6.5%	8.6%	8.3%	5.5%	4.0%	4.7%	5.2%	3.0%	5.3%	8.8%	8.8%	-	8.2%
Financial Systems Solutions	3.6%	6.5%	9.7%	8.7%	7.7%	6.7%	7.1%	6.4%	4.9%	6.9%	10.6%	9.5%	-	9.0%
Product Solutions	-	6.5%	0.3%	5.0%	-	-	-	-	-	-	-	2.8%	-	2.9%
Sales breakdown														
Financial Systems Solutions	1,460	3,312	5,341	7,448	2,146	4,077	7,006	9,332	2,140	4,615	7,068	9,337	100.4%	9,300
Software development	1,036	2,155	3,371	4,835	1,487	2,695	5,023	6,439	1,311	2,791	4,145	5,668	94.5%	6,000
Maintenance	218	442	681	919	239	503	779	1,041	268	541	829	1,124	104.1%	1,080
Hardware	87	451	835	974	324	550	679	923	265	750	989	1,140	111.8%	1,020
In-house packaged software	78	171	293	441	84	275	407	628	229	425	942	1,149	135.2%	850
(Cloud services)	0	43	111	178	81	176	277	386	126	285	459	637	98.0%	650
Third-party packaged software	39	90	160	277	8	51	117	299	64	105	161	254	72.6%	350
Product Solutions	194	481	715	1,022	177	616	823	1,272	197	425	621	1,106	79.0%	1,400
Software development	21	38	55	62	10	21	67	89	15	29	38	72	160.0%	45
Maintenance	26	66	114	253	23	51	82	212	23	48	132	282	108.5%	260
Hardware	3	3	46	46	5	253	283	365	1	2	2	82	149.1%	55
In-house packaged software	20	87	110	122	40	43	45	58	42	113	115	133	91.7%	145
Third-party packaged software	122	284	388	537	97	246	343	545	115	230	333	534	59.7%	895

Source: Shared Research based on company data
Note: New segments from Q1 FY06/16. Sales and costs of Face Concierge were transferred from the Product Solutions segment to the Financial Systems Solutions segment.
Note: Figures may differ from company materials due to differences in rounding methods.

Full-year FY06/19 results (out August 7, 2019)

Results overview

- For FY06/19, IWI reported parent sales of JPY10.4bn (-1.5% YoY), operating profit of JPY922mn (+68.3% YoY), recurring profit of JPY954mn (+66.2% YoY), and net income of JPY684mn (+81.2% YoY)
- Sales achieved 97.6% of the full-year FY06/19 target, operating profit 104.7%, recurring profit 106.0%, and net income 110.3%. Although sales marginally underperformed, all profit categories exceeded their respective targets.
- Sales were down 1.5% YoY. In Financial Systems Solutions, sales were flat with FY06/18 (achieving 100.4% of the full-year target), with the dropout of some JPY1.3bn in sales from large-scale FEP (Front End Processing) systems development projects for major clients (for further details, see discussion below under *Trends by client*.) booked in FY06/18 being offset by sales to other clients and the cloud service business. Product Solutions sales fell 13.0% YoY (underperforming the target by JPY294mn) on declining hardware sales.
- Operating profit up 68.3% YoY. Financial Systems Solutions profit posted a sharp 48.7% YoY increase on higher sales of the company's in-house developed package software used in FEP systems development. In Product Solutions, robust sales of in-house developed package software resulted in operating profit of JPY31mn (compared with a loss of JPY51mn in FY06/18). Aided by top-line growth and productivity gains, the gross profit margin rose 5.9pp YoY (to 26.9%), easily offsetting the 2.3pp YoY rise in the SG&A expense ratio (to 18.1%) stemming from the increase in personnel costs as the company's workforce expanded and leaving the operating profit margin up 3.6pp YoY (at 8.8%).
- Dividend increase: The company raised its annual dividend to JPY9.0 per share (from JPY7.0 in FY06/18). This is the sum of an JPY8.0 year-end dividend, and a JPY1.0 dividend commemorating the company's listing on the First Section of the Tokyo Stock Exchange.

Trends by client (top three companies)

- Sales to the top three corporate clients (in order) are as follows: Dai Nippon Printing (DNP) accounted for JPY2.0bn in sales (smartphone payment, payment platforms, and security products; -JPY164mn YoY). A credit card company accounted for sales of JPY684mn (network connection; +JPY278mn YoY), and another credit card company accounted for sales of JPY674mn (credit card brand integration; -JPY1.3bn YoY).
- The company and DNP run a joint payment business and have been winning orders for new projects not only for credit card payment systems, but also smartphone payment systems. The client company above with second-highest billing total ordered a network connections project. The client company with the third-highest billing total in FY06/19 completed a large credit card brand integration project the previous year and, as a result, sales to this company were down JPY1.3bn from FY06/18.

Overview by segment

Financial Systems Solutions segment

- In full-year FY06/19 results, this segment reported sales of JPY9.3bn (+0.0% YoY) and operating profit of JPY890mn (+48.7% YoY).
- Sales reached 100.4% and operating profit 106.0% of the company's FY06/19 forecasts.

Sales and operating profit of Financial Systems Solutions segment

(JPYmn)	FY06/18	FY06/19	YoY change	Rate of change	FY06/19 Est.	% of FY Est.
Sales	**9,332**	**9,337**	**5**	**0.0%**	**9,300**	**100.4%**
Software development	6,439	5,668	-771	-12.0%	6,000	94.5%
Maintenance	1,041	1,124	83	8.0%	1,080	104.1%
Hardware	923	1,140	217	23.5%	1,020	111.8%
In-house packaged software	628	1,149	521	83.0%	850	135.2%
Third-party packaged software	299	254	-45	-15.1%	650	39.1%
Operating profit	**599**	**890**	**292**	**48.7%**	**840**	**106.0%**
OPM	6.4%	9.5%	-	-	9.0%	

Source: Shared Research based on company data

▷ The Financial Systems Solutions segment primarily develops FEP (Front End Processing) systems with network connectivity, card usage authentication and other functions necessary to complete the processing of credit card payments. In the financial and credit card industries, IWI's main business areas, capex projects have remained robust in light of promotion of a cashless society and diversification in payment methods. To the company, this means the business environment remains favorable.

▷ The dropout of JPY1.9bn in sales from large-scale FEP (Front End Processing) systems development projects for major clients booked in FY06/18 was offset by package software sales (+JPY490mn YoY), hardware/other sales including hardware, maintenance services, and third-party packaged software (+JPY254mn YoY), and sales relating to the development of FEP systems for other clients and the cloud service business including the company's proprietary service packages (+JPY521mn YoY).

- In this segment, the company booked sales from existing clients for development projects for multiple FEP system updates and additions. Operating profit increased on a sharp rise in sales of NET+1, in-house package software used in the development of FEP systems.
- Note that there were no unprofitable development projects.
- The cloud service business, which supplies acquiring services systems and credit card fraud detection systems to regional banks and credit card companies, grew sales from JPY386mn in FY06/18 to JPY637mn in FY06/19 (versus plan of JPY650mn) and reduced losses, cutting losses at the gross profit level from JPY296mn in FY06/18 to JPY105mn in FY06/19 (versus plan of JPY92mn).

Factors contributing to changes in profit margin

▷ In the Financial Systems Solutions segment, the order scale varies from one development project to another. Moreover, costs may come out higher than expected in each separate process of the project, and gross profit margin varies from project to project. All these factors contribute to fluctuation in profits of the segment as a whole.

▷ Furthermore, as the company sells servers and other equipment when clients order new systems or upgrade their existing systems, hardware sales vary depending on the project. Fluctuation in profits from hardware sales also contributes to fluctuation in profit margin of the entire segment.

Product Solutions segment

▷ The segment reported sales of JPY1.1bn (-13.0% YoY) and operating profit of JPY31mn (operating loss of JPY51mn in FY06/18).

▷ Sales achieved 79.0% and operating profit 77.8% of the company's FY06/19 forecast.

▷ The company recorded sales generated from the proprietary CWAT system, which prevents internal data leaks for companies, and from selling third-party products such as Traps, a program for preventing targeted cyberattacks caused by malware.

▷ Hardware sales got a temporary boost in FY06/18 from specific projects, but fell back in FY06/19 as these sales dropped out. Sales of third-party products fell short of the target due to the difficulty of acquiring new clients. In contrast, sales of in-house products were up YoY and in line with plan thanks mainly to installations by large companies.

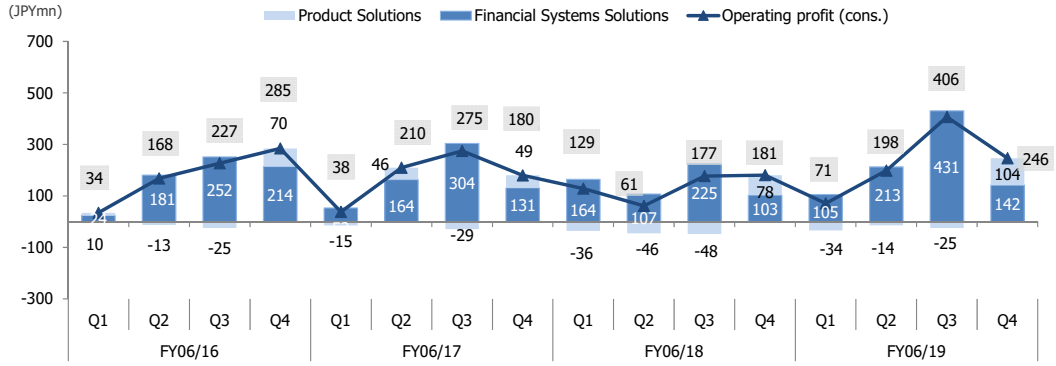
▷ Operating profit largely achieved the initial forecast thanks to a fall in sales of hardware with a relatively low profit margin, and an increase in sales of in-house products with a relatively high profit margin.

Sales and operating profit of Product Solutions segment

(JPYmn)	FY06/18	FY06/19	YoY change	Rate of change	FY06/19 Est.	% of FY Est.
Sales	**1,272**	**1,106**	**-165**	**-13.0%**	**1,400**	**79.0%**
Software development	89	72	-17	-19.1%	45	160.0%
Maintenance	212	282	70	33.0%	260	108.5%
Hardware	365	82	-283	-77.5%	55	149.1%
In-house packaged software	58	133	75	129.3%	145	91.7%
Third-party packaged software	545	534	-11	-2.0%	895	59.7%
Operating profit	**-51**	**31**	**82**	**-**	**40**	**77.8%**
OPM	-4.0%	2.8%	-	-	-	

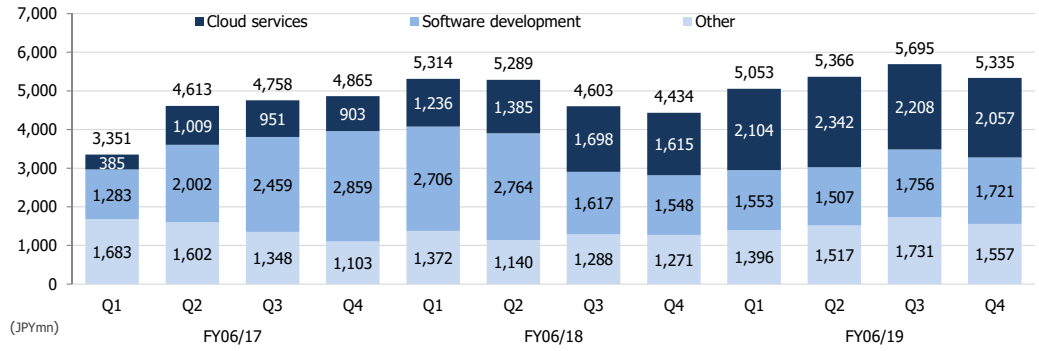
Source: Shared Research, based on company data

Operating profit by segment



Source: Shared Research, based on company data

Order backlog



Source: Shared Research, based on company data

For details on previous quarterly and annual results, please refer to the Historical financial statements section.

Full-year company forecast for FY06/20 (announced August 7, 2019)

	FY06/18 (parent)			FY06/19 (parent)			FY06/20 (parent)		
(JPYmn)	1H	2H	FY	1H Act.	2H Est.	FY Est.	1H Act.	2H Est.	FY Est.
Sales	**4,693**	**5,911**	**10,604**	**5,039**	**5,404**	**10,443**	**5,000**	**5,600**	**10,600**
YoY	23.7%	26.4%	25.2%	7.4%	-8.6%	-1.5%	-0.8%	3.6%	1.5%
Cost of sales	3,670	4,712	8,381	3,842	2,351	6,193			
Gross profit	**1,023**	**1,200**	**2,223**	**1,198**	**1,609**	**2,807**			
YoY	12.0%	-1.6%	4.2%	17.1%	34.1%	26.3%			
GPM	21.8%	20.3%	21.0%	23.8%	29.8%	26.9%			
SG&A expenses	833	842	1,675	929	956	1,885			
SG&A ratio	17.8%	14.2%	15.8%	18.4%	17.7%	18.1%			
Operating profit	**190**	**358**	**548**	**269**	**653**	**922**	**340**	**660**	**1,000**
YoY	-23.3%	-21.4%	-22.0%	41.5%	82.5%	68.3%	26.4%	1.1%	8.5%
OPM	4.1%	6.0%	5.2%	5.3%	12.1%	8.8%	6.8%	11.8%	9.4%
Recurring profit	**197**	**377**	**574**	**282**	**672**	**954**	**360**	**680**	**1,040**
YoY	-28.3%	-23.4%	-25.1%	43.0%	78.4%	66.2%	27.8%	1.2%	9.1%
RPM	4.2%	6.4%	5.4%	5.6%	12.4%	9.1%	7.2%	12.1%	9.8%
Net income	**129**	**248**	**377**	**205**	**479**	**684**	**250**	**470**	**720**
YoY	-32.5%	-30.2%	-31.0%	58.4%	93.0%	81.2%	22.1%	-1.9%	5.3%

Source: Shared Research based on company data
Note: Figures may differ from company materials due to differences in rounding methods.
Note: Company estimates based on most recent figures
Note: On June 28, 2016, the company finished liquidating consolidated subsidiary Intelligent Wave Korea Inc. FY06/17 estimates apply only to the parent company and are not consolidated (YoY growth rate figures for FY06/17 are for reference).

FY06/20 company forecast (announced August 7, 2019)

▷ OverviewFor FY06/20, IWI is forecasting parent company sales of JPY10.6bn (+1.5% YoY), operating profit of JPY1.0bn (+8.5% YoY), recurring profit of JPY1.0bn (+4.9% YoY), and net income of JPY720mn (+5.3% YoY). The company aims to achieve operating profit of JPY1.0bn one year earlier than given in the previous medium-term management plan (as discussed below).

- At the Financial Systems Solutions segment, the company is targeting sales of JPY9.4bn (+0.7% YoY) and an operating profit of JPY960mn (+7.8% YoY) and, at the Product Solutions segment, is targeting sales of JPY1.2bn (+8.5% YoY) and an operating profit of JPY40mn (+28.5% YoY).
- The modest 1.5% growth projected for in parent sales reflects the drag from the dropout of JPY674mn in billings in FY06/18 in connection with the completion of the remaining parts of a large credit card brand integration projection. The company said it is fielding a large number of inquiries for cloud services and, based on this, sees sales growth picking up from FY06/21.

▷ Operating profit of JPY922mn in FY06/19 surpassed the company's full-year target of JPY880mn and also came close to reaching the company's FY06/20 target of JPY930mn under the previous medium-term business plan. This prompted the company to come out with a new medium-term plan at the time of its FY06/19 results announcement. Covering the three-year period from FY06/20 through FY06/22, the new medium-term plan includes revised targets for FY06/20; the company is assuming there will be no major changes in the current business environment. (For further details, see discussion in the following section, New medium-term business plan: FY06/20 –FY06/22.)

Company forecast by segment

Financial Systems Solutions segment

▷ For the Financial Systems Solutions segment, the company is forecasting FY06/20 sales of JPY9.4bn (+0.7% YoY) and an operating profit of JPY960mn (+7.8% YoY).

- Systems development projects for card cards and other systems are expected to generate sales of JPY8.6bn (down 1.1% YoY). This reflects the dropout of JPY674mn in billings in FY06/18 booked in connection with the completion of the remaining

parts of a large credit card brand integration project and a JPY575mn increase in revenue from various other development projects.

- At the company's cloud service business, the forecast calls for revenue of JPY800mn (+25.6% YoY) and, at the gross profit level, a loss of only JPY25mn versus last year's loss of JPY105mn.

Financial Systems Solutions segment: company forecast for FY06/20

	FY06/19				FY06/20			
(JPYmn)	1H Act.	2H Act.	FY Act.	YoY	1H Est.	2H Est.	FY Est.	YoY
Sales	**4,615**	**4,722**	**9,337**	**0.0%**	**4,500**	**4,900**	**9,400**	**0.7%**
Software development	2,791	2,877	5,668	-12.0%	2,649	3,311	5,960	5.2%
Maintenance	541	583	1,124	8.0%	588	632	1,220	8.5%
Hardware	750	390	1,140	23.5%	611	259	870	-23.7%
In-house packaged software	425	724	1,149	83.0%	564	476	1,040	-9.5%
Third-party packaged software	105	149	254	-15.1%	87	223	310	22.0%
Operating profit	**317**	**573**	**890**	**48.7%**	**430**	**530**	**960**	**7.8%**

Source: Shared Research, based on company data

Product Solutions segment

▷ For the Product Solutions segment, the company is forecasting FY06/20 sales of JPY1.2bn (+8.5% YoY) and an operating profit of JPY40mn (+28.5% YoY).

- For its proprietary CWAT software (including proprietary software packages, software development, and maintenance), the company is projecting full-year sales of JPY430mn (-11.9% YoY), the decline reflecting the dropout of sales booked in connection with installations at several large companies in FY06/19.
- For third-party products (including third-party packaged software and hardware), the company is projecting full-year sales of JPY770mn (+24.8% YoY). The gains reflect a larger product lineup and reinforced sales force as dictated by its solutions map.
- Based on its outlook for top-line growth, the company sees a second straight year of positive operating profit in FY06/20.

Product Solutions segment: company forecast for FY06/20

	FY06/19				FY06/20			
(JPYmn)	1H Act.	2H Act.	FY Act.	YoY	1H Est.	2H Est.	FY Est.	YoY
Sales	**425**	**682**	**1,106**	**-13.0%**	**500**	**700**	**1,200**	**8.5%**
Software development	29	43	72	-19.1%	7	53	60	-16.7%
Maintenance	48	234	282	33.0%	45	245	290	2.8%
Hardware	2	80	82	-77.5%	1	39	40	-51.2%
In-house packaged software	113	20	133	129.3%	50	30	80	-39.8%
Third-party packaged software	230	304	534	-2.0%	398	332	730	36.7%
Operating profit	**-48**	**80**	**31**	**-**	**-90**	**130**	**40**	**28.5%**

Source: Shared Research, based on company data

Management strategy and long-term outlook

New medium-term business plan: FY06/20–FY06/22 (announced August 7, 2019)

Overview

▷ The company unveiled its new medium-term business plan (covering FY06/20 to FY06/22) along with its announcement of full-year results for FY06/19 on August 7, 2019. In the final year of the new medium-term plan (FY06/22), the company is targeting sales of JPY12.0bn (+14.9% versus FY06/19), operating profit of JPY1.2bn (+30.2% versus FY06/19), and an operating profit margin of 10.0%.

- Operating profit of JPY922mn reported for FY06/19 surpassed the company's target of JPY880mn and came close to reaching the target of JPY930mn set for FY06/20 under its previous medium-term business plan. The company experienced an unexpected suspension of a large project in FY06/19 but did not see any major changes in its operating environment.
- The above-plan results for FY06/19 prompted the company to come out with a new medium-term plan at the time of its full-year results announcement. The new medium-term plan covers the three-year period through FY06/22.

▷ The forecasts under the new medium-term plan do not include revenue from any large-scale development projects in the future. This reflects the company's thinking that, even without large-scale development projects the current operating environment is such that it will be able to sustain positive top-line growth over the medium term.

▷ At the mainstay Financial Systems Solutions segment, the new medium-term plan sees the cloud services business serving as the main growth driver with average annual growth of 30% over the next three years (through FY06/22), and sees this along with slow-but-steady growth in sales from miscellaneous development projects (projected annual growth of 1.9%) underpinning overall sales at the segment to produce a growth rate of 4.3% per annum for segment sales as a whole. Under the new medium-term plan, the company is assuming increasing contributions to sales of new products such as its next-generation NET+1 software and new products for the broadcasting industry. The company did not provide any definitive figures indicating exactly how much growth would be coming from new products, however, saying only that it is working on initiatives to ensure that sales each year come in ahead of plan.

- The company is looking to its cloud service business as a key growth driver in the years ahead, projecting sales of JPY1.4bn for FY06/22 (versus JPY637mn in FY06/19). For clients in the financial services industry, the company is providing cloud-based systems and services including merchant managing services (acquiring) and fraud detection services.
- The company is currently developing a next-generation version of its NET+1 software product. The development of next-generation NET+1 and the preparation of new products featuring credit card fraud detection functions are progressing steadily.
- The marketing of new products for the broadcasting industry is due to get fully underway from FY06/20.

New medium-term business plan follows lead set by previous medium-term business plan

(New plan)

(JPYmn)	FY06/19 Act.	FY06/20 Est.	FY06/21 MTP	FY06/22 MTP	CAGR
Sales	10,443	10,600	11,200	12,000	4.7%
Financial Systems Solutions	9,337	9,400	9,900	10,600	4.3%
Cloud services	637	800	1,100	1,400	30.0%
Other development projects	8,700	8,600	8,800	9,200	1.9%
Product Solutions	1,106	1,200	1,300	1,400	8.2%
Operating profit	922	1,000	1,080	1,200	9.2%
OPM	8.8%	9.4%	9.6%	10.0%	-

(Old plan)

(JPYmn)	FY06/18 Act.	FY06/19 Est.	FY06/20 MTP	FY06/21 MTP	CAGR
Sales	10,604	10,700	11,000	11,200	1.8%
Financial Systems Solutions	9,332	9,300	9,500	9,600	0.9%
Product Solutions	1,272	1,400	1,500	1,600	8.0%
Operating profit	548	880	950	1,000	22.2%
OPM	5.2%	8.2%	8.5%	8.9%	-

Source: Shared Research, based on company data

Medium-term business plan

Under the new medium-term plan, the company will continue along the lines set out under its previous medium-term plan (*Evolving in three dimensions*).

- ▷ Road to 10B: The company is looking to keep sales above JPY10bn and generate an operating profit of JPY1.0bn
- ▷ Cultivating the next generation: The company aims to become better at training and cultivating employees and, through these efforts, raise up technicians that can add to sales and earnings (for details, see discussion below).
- ▷ Improve corporate culture: The company is looking to create an enterprising and friendly workplace aimed at cultivating employees that want to be engaged in development work (for details, see discussion below).

New medium-term plan: Sales

Under its new medium-term plan, the company has set an absolute minimum target for annual sales of JPY10.0bn regardless of trends in specific large-scale development projects and, for FY06/22, has established a sales target of JPY12.0bn (representing a 14.9% increase over sales in FY06/19). By continuing to actively recruit new personnel, expand its workforce, and strengthen its organizational structure, the company is looking to actively grow sales and surpass these targets.

New medium-term plan: Operating profit

Under its new medium-term plan, the company is sticking with the operating profit target of JPY1.0bn set for JPY06/20 under its previous medium-term plan, and for FY06/22 has established an operating profit target of JPY1.2bn (representing a 30.2% increase over operating profit in FY6/19). Towards this end, the company plans to continue strengthening its development project management structure and push ahead with employee education initiatives to ensure timely execution of development projects in a framework that assures sustainable profit margins and earnings growth.

Financial Systems Solutions segment

- ▷ Under the new medium-term plan, the company has set a target for sales at the Financial Systems Solutions segment of JPY10.6bn, representing average annual growth of 4.3% over the three-year period starting in FY06/20.
- ▷ Most of the sales at the Financial Systems Solutions segment currently come system development projects, but going forward the company is not counting on any specific large-scale projects to help it reach its sales target. Instead, it is looking to cloud services as the main growth driver, projecting cloud service-related sales of JPY800mn in FY06/20 rising to JPY1.1bn in FY06/21 and JPY1.4bn in FY06/22 (representing an average annual growth rate of 30% over the three-year period starting in FY06/20). The

company already has a number of new client companies lined up on this front, including one that will install its IOASIS cloud services for acquiring businesses (merchant systems) and several more lined up to install its IFINS credit card fraud detection ASP service as well as its IGATES OnCore Switch (network connection) service in FY06/21 and FY06/22.

The company will continue to expand its development services, enhance the reliability of its proprietary systems, strengthen project management, and accordingly bolster its earnings power. The company aims to increase the share of cloud systems projects (increase sales in cloud services business) while simultaneously growing front-end brokerage systems and new business projects, but did not provide any specific figures under its new medium-term plan for the contributions expected to sales from new products such as its next-generation NET+1 gateway system and next-generation fraud detection system (to be discussed in detail later in this report). Similarly, the company is forecasting credit card-related development work to grow steadily due to the spread of cashless payments and the upcoming 2020 Olympics/Paralympics. Looking beyond 2020, the company also expects payment methods to become increasingly card-less, and seeing this is looking to make its next move now.Development of cloud services and new business

▷ IWI looks to acquire new clients for its cloud services business over the medium term, develop cloud services not only for credit card acquiring services but also credit card fraud detection and other related services, and accordingly bolster its earnings power. The company indicates that, moving forward, it would like to add new services, such as a QR code-based payment system. Additionally, the company aims to functionally enhance its cloud services. IWI is also developing its next-generation NET+1 gateway system and next-generation fraud detection (using AI technology), using NET+1 in particular to open up new markets.

▷ In other new business areas, the company is currently focusing on new product development for business systems geared toward the securities industry and IP flow monitoring systems for the broadcasting industry, and is looking for these new product initiatives to contribution to sales and earnings in the future as the respective businesses scale up.

Next-Generation NET+1

▷ With its next-generation NET+1 software, IWI plans to create a system that will enable connectivity with existing networks (multi-integrated ATMs, Zengin-Net, etc.) and credit card systems as well as easier network connectivity overall. The company is developing a next-generation NET+1 package that will make connection to banks (core banking, CRM), consumer financing systems and new payment services (smartphone, QR codes, etc.) possible at a low cost and within a short period of time. IWI has already identified requirements for the next-generation NET+1 software and plans to complete development work before the end of 2019.

▷ The current NET+1 software (network connectivity gateway) can only run on native operating systems and its design is almost 30 years old. For its next-generation NET+1 software, IWI converted the old design into a modern and open-source architecture. With this product, the company is setting its sights on expanding sales into new fields, in addition to the previous financial institutions and credit card companies. For example, when linking smartphone payment and credit card systems, each company involved must construct a gateway from scratch if they do not have a software that functions like NET+1.

With its next-generation NET+1 software (open-source network connectivity gateway), IWI is aiming for simplified and accelerated development processes, reduced cost and expanded versatility.

▷ The company is thinking that demand for its next-generation NET+1 system will start to grow once companies start considering upgrading their current NET+1 system so as to establish new network connections that will allow them to handle a wider variety of payment methods, including smartphone payments and QR code-based payment systems. And, because there is a good chance that it will be able to deliver its next-generation NET+1 system at a lower cost than its current system, the company is also considering marketing its next-generation NET+1 system overseas.

▷ The next-generation NET+1 system will be able to more than just handle credit card payments, it will serve as a platform for network connections with a wide variety of other payment methods. This is important because no longer is it only credit card

companies and financial institutions operating credit card businesses, companies in other industries such as retail and telecommunications are starting their own credit card businesses as well. As for new entrants into the payment processing field, the company believes its expertise in network connections will put its next-generation NET+1 system in a good position to play an active role once data starts being transmitted over these new networks.

▷ With regard to specific sales targets, the company noted that its new medium-term business plan does not include any sales from its next-generation NET+1 system.

Next-generation fraud detection system

▷ In the field of artificial intelligence, the company already has a new product in *OpAI*. This software uses the company's proprietary artificial intelligence technology to properly process natural spoken, conversational language. This processes ambiguous natural language and understands the intent of words and questions. This transforms the content into an easy-to-answer format and delivers it to AI platforms such as IBM Watson and search systems, which enhances the accuracy of searches and information processing.

▷ On March 30, 2017, IWI announced that it had received an order to develop a project using this technology from a major nonlife insurance company. The company said it is considering using AI technology in its credit card fraud detection system, ACE-Plus. IWI is in the process of developing a next-generation fraud detection system (ApAI: next-generation fraud detection system) that will enable an employee with limited experience to detect fraud, which was traditionally only possible by someone with considerable experience.

▷ The next-generation fraud detection system is currently undergoing proof-of-concept testing by a number of credit card companies that are IWI clients. This type of performance verification testing, in which the user sets specific performance targets for metrics such as detection rates, accuracy rates, loss avoidance numbers, and the system must meet or beat the targets before it will be accepted, was not done in the past. The company reports that the verification testing is proceeding smoothly and says it hopes to have contracts with several companies before the end of FY06/20.

▷ With respect to potential demand, the company noted that the growth of e-commerce has increased the need for fraud detection systems to handle transaction where there is no face-to-face contact between the buyer and seller.

Other new product development/rollout, projects

▷ The company is currently doing verification testing in Japan in cooperation with a major Japanese broadcasting company of its IP Flow Monitoring Solution, a system that can handle internet protocol-based broadcasting systems essential for 4K/8K broadcasting. Having received good feedback, the company has started to market IP Flow Monitoring Solution to broadcast companies overseas, where the move to IP among broadcasters is more advanced. This represents an application of a technology that IWI had already been developing in response to demand from financial services companies for high-speed data transmission. IP Flow Monitoring Solution identifies the data type and applies high-speed data analysis through *Fast Event Streamer* (FES), its self-developed CEP engine, and processes the data so as to facilitate overall trend analysis. This IP Flow Monitoring Solution focuses on stream (IP flow) monitoring and can visualize not only the bit rate or packet drop within every stream, but latency (or "jitter") within every stream received.

▷ SMBC Nikko Securities adopted IWI's Fast Event Streamer for use in its AI-based stock advice service that was launched on July 26, 2019. In this application, the system is designed to provide advice on the timing of trades in the stocks in the accounts of account owners. SMBC Nikko Securities developed its own AI-engine to forecast stock price trends; IWI's Fast Event Streamer is used to send out advice to account owners with regard to the timing of trades based on those projections for percentage changes in the price of a particular stock.

▷ As a new project in the IoT business, IWI plans to combine NET+1 with an all-purpose Hardware Security Module (HSM: an encryption processor specially designed to preserve encryption key lifecycles). The company aims to expand marketing for its cryptographic key management systems on a wide scale, targeting automobile manufacturers and other industries.

Southeast Asia expansion

The company's Southeast Asia expansion is primarily through OnCore Switch. IWI aims to customize it so it can sell it in Thailand. Other than OnCore Switch, the company aims to explore what sort of products are in demand in Southeast Asia, such as ACE-Plus, where it has a track record in the domestic market. As mentioned above, the company is also eyeing overseas expansion for its next-generation NET+1 software.

System development that realizes secure payment methods amid push toward cashless society

▷ IWI sees government moves support the creation of a cashless society (as detailed later in this report under the *Market and Value Chain* section) and related calls for safe and secure payment methods driving demand for systems development work over the medium to long term, and intends to take advantage of this opportunity and expand its business by leveraging its expertise and capabilities in system development to develop a range of systems to handle the growing array of payment methods.

* System development for key clients—credit card companies, banks, and brokerages—that mainly includes network connection functions to complete online transactions, as well as functions to authenticate credit cards (which are a prerequisite for payments), detect fraudulent credit card use, and manage merchant operations.
** System development related to the growing popularity of prepaid cards and debit cards, IC cards payments, and the use of smartphone payments and electronic money.

▷ Towards this end, the company plans to continue strengthening its management structure for development projects and push ahead with employee education initiatives to ensure timely execution of development projects in a framework that secures sustainable profit margins and earnings growth.

Product Solutions segment

The Product Solutions segment includes data security product sales and maintenance and technical services. Under the medium-term business plan, the company has set a target for segment sales of JPY1.4bn for FY06/22, representing average annual growth of 8.2% over the three-year period starting in FY06/20. In addition to its proprietary CWAT system (for preventing internal data leaks), IWI is currently selling five packaged software products from outside vendors, *Traps* from Palo Alto Networks, *Deceptions Everywhere* from illusive networks, *SecBI* from SecBI, *ayehu NG* from ayehu, and *Morphisec* from Morphisec. The company has additional plans to expand its service in this area by handling products designed to thwart external cyber-attacks, including products such as the recently released *WiFiWall* from Israel-based WiFiWall, *Cybear* from Cyber Networks, *RESEC* from ReSeC Technologies, and *Virtual Security Officer (VSO)* from Pullsec Lab. For further details regarding in-house products and third-party products sold by the company see descriptions under the *Business Description* section later in this report.

▷ In the Product Solutions segment, which mainly engages in sales and maintenance of information security measures and technical services, IWI expects demand for security-related investments to increase going forward against the backdrop of increasing damage from cyberattacks and intends to proactively take advantage of growing business opportunities in this sphere.

Comprehensive provider of cybersecurity products and services

Going forward, the company is looking to establish itself as a comprehensive provider of cybersecurity products and services designed to meet a broad range of cyber-threats. Towards this end, it plans to continue domestic sales of top-class cybersecurity products from overseas companies and further expand its sales efforts in this area. Medium-term plans call for introducing a series of cyber-security products developed by Israeli companies to domestic clients, and continually strengthening its support service structure for third-party products. In addition to introducing new products to counter a broad range of cybersecurity threats, IWI is looking to expand its business in this area by adding additional services for not only its in-house developed *CWAT* (for preventing internal data leaks) but also third-party cybersecurity products designed to counter external threats.

Expansion of product lineup as IWI moves to become a comprehensive cybersecurity provider

Measures	Internal	External: cyber attack				
Threat / Function	Leaks	Vulnerabilities or targeted attacks	Ransomware, other malware	Manual attacks, contamination	Massive log data threats	Man in the middle attacks on WiFi
Detect attacks	CWAT	paloalto		illusive	SECBI	wifi wall
Notify manager	In-house product: CWAT	Palo Alto Networks: Traps		illusive networks: Deceptions Everywhere	SecBI: SecBI	WiFiwall: WiFiwall
Report forensics						New
Halt behavior	ayehu: ayehu NG					
Incident response						
Incident analysis		Cybear Networks: Cybear				New
Integrated monitoring		Cyber Observer: Cyber Observer		cyber OBSERVER		New
Invalidating attacks		Morphisec: Morphisec				
Invalidating files (CDR)		ReSeC Technologies: RESEC		New		
Monitoring for SMB		Pulisec Lab: VSO (Virtual Security Officer)		New		

Source: Company data

Training/establishing next generation of human resources

IWI thinks it needs to create an environment where hired personnel can make immediate contributions to the workplace and also enjoy a long tenure at the company. In FY06/19 the company will start up a training team that will conduct the type of training that is necessary for each level of employee at the company (management, directors, section managers, leaders, junior employees with two to three years at the company, new hires), instead of conducting training on an ad hoc basis. The training will comprise three main pillars: Technological ability (skills necessary in a specialized field), innovative capability and human skills. IWI is already implementing more than half of the measures outlined in this training plan and is also developing human resources through systematic training of new hires, which had previously been conducted exclusively through OJT.

Corporate cultural reform

Every month the company holds a meeting spearheaded by the CEO with representatives from each division to get an accurate picture of individual employees' overtime work and come up with a response to help employees work effectively and reduce work outside normal hours. The purpose is not to reduce overtime but cut long working hours to enable individuals to pursue their own interests and spend time with their families. The company also gives awards for particularly praiseworthy projects (covering not just development, but all departments including personnel systems and those aimed at boosting efficiency). In July 2017, 43 projects from FY06/17 received awards. Feedback from the company regarding initiatives generates motivation for the employees, and IWI continued the awards in FY06/18. IWI also has a mentoring program where employees can have discussions with the heads of other divisions and a free agent system for those who want to volunteer for new challenges. This is also continued from FY06/19.

Business

Business description

Software developer and member of the Dai Nippon Printing group; strength in credit card transaction processing

▷ IWI's business consists of system development and system product (hardware and software) sales. The company mainly sells software solutions based on in-house developed package software.

▷ The main clients are in the financial services industry; core products focus on credit card transaction processing, low-latency secure communications (with quick response), and data protection.

▷ Dai Nippon Printing Co., Ltd. (DNP; TSE1: 7912) holds 50%+ of the company.

Main business segments

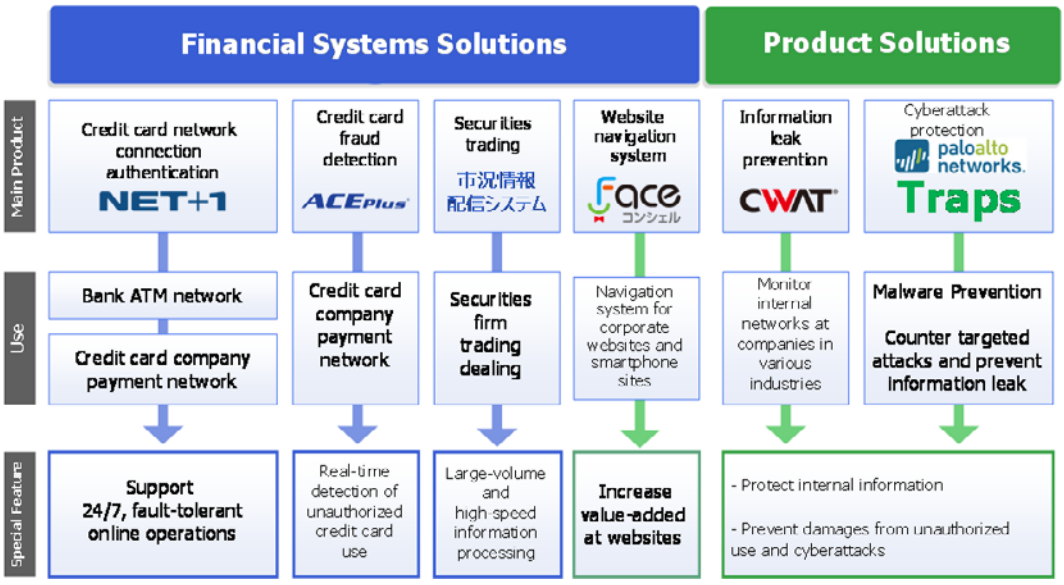
▷ In Q1 FY06/15, IWI changed reporting segments, combining these into two segments: Financial Systems Solutions, and Product Solutions. Previously, the company had three segments: Retail Banking Online Systems, System Solutions, and Security Systems.

Overview of segment merger

Old segments	New segments
Retail Banking Online Systems	Financial Systems Solutions
System Solutions	
Security Systems	Product Solutions
Other	

Source: Shared Research, based on company data

Overview based on the old segmentation



Source: Company image

Financial Systems Solutions (FY06/19 sales: JPY9.3bn [89.4% of sales]; OP: JPY890mn [96.6% of OP])

	FY06/18				FY06/19			
(JPYmn)	1H Act.	2H Act.	FY Act.	% of sales	1H Act.	2H Act.	FY Act.	% of sales
Sales	**4,077**	**5,256**	**9,332**	**100.0%**	**4,615**	**4,722**	**9,337**	**100.0%**
Software development	2,695	3,744	6,439	69.0%	2,791	2,877	5,668	60.7%
Maintenance	503	538	1,041	11.2%	541	583	1,124	12.0%
Hardware	550	373	923	9.9%	750	390	1,140	12.2%
In-house packaged software	275	353	628	6.7%	425	724	1,149	12.3%
Third-party packaged software	51	248	299	3.2%	105	149	254	2.7%
Operating profit	**272**	**327**	**599**	**6.4%**	**317**	**573**	**890**	**9.5%**

Source: Shared Research based on company data
Note: Figures may differ from company materials due to differences in rounding methods.

- The Financial Systems Solutions segment combines hardware and software sales, with a focus on software development for clients in the financial industry. The company offers added-value systems and maintenance services.
- Current sales in this segment are divided into card business (roughly 80% of segment sales) and securities business (roughly 20% of segment sales). In the card business, the company develops systems such as for authenticating the connection to credit card networks and systems for detecting fraudulent credit card use. In the securities business, the company is developing a data distribution base as well as network monitoring systems.
- Sales in the Financial Systems Solutions fluctuate, due mainly to development of contract-type software. The company is focusing on expanding its business areas. In the card business, in addition to demand for upgrades for existing products, IWI is seeking to acquire various system development orders related to payments, such as credit card brand integration, upgrades to handle branded prepaid cards, branded debit cards, IC cards, and overseas ATM cards. In the securities businesses, the company had been concentrating on the Information Delivery Distribution System, but now is aiming to expand its business area to operations systems.
- Further, in order to expand beyond the financial industry, IWI started to sell a new product "OnCore" from 2015. OnCore is a simplified version of the "NET+1", a software package the company developed that commands the largest domestic market share of credit card payment systems.
- In the fall of 2016 IWI launched its joint-use type system for its acquiring services for credit cards (discussed below), and to expand its recurring-revenue services. As the expansion of recurring-revenue cloud services proceeded, cloud service sales in FY06/19 jumped to JPY637mn from JPY386mn in FY06/18. As of the end of FY06/19, four client companies had adopted IWI's merchant managing services (joint-use system for acquiring services), three had adopted its fraud detection service and two had adopted its network connection service. IWI expects that the number of companies adopting these services will increase moving forward.

Overview of main products and services

NET+1

- The company's main product in this segment is NET+1, a package software developed by IWI that holds the top domestic share in the field of credit card processing systems. NET+1 is a solution that is used by credit card companies for transaction authorizations and similar front-end functions. The main clients in this segment are credit card companies and other financial institutions. IWI estimates that NET+1 is involved in approximately 70% of major credit card firms' authorization systems in Japan. The business need that NET+1 solves is the creation and maintenance of a special network where credit card companies can connect to merchants (either single point of sale terminals or large credit card processing centers) as well as creditworthiness data companies involved in credit card transactions.
- Generally speaking, the credit card transaction related systems are divided into front-end (the information from a merchant terminal to the credit card company; authorizations and electronic draft capture) and back-end systems (internal information at a

credit card company; settlement, retrieval, client data management etc.). IWI's Retail Banking Online Systems business is focused on the front-end processing side. The back-end systems are large, which means that development and integration projects are very substantial in scope, last for years, and can normally be only handled by the first-tier system integrators. Front-end solutions, while important, are decided upon after the back-end has been "sorted out".

▷ NET+1 consists of both hardware and in-house developed package software. The system is generally used without major alterations for 4–5 years (sometimes longer) and the company realizes maintenance and support revenue over the life cycle of the systems it installed.

▷ The other main products include products related to data communications (internally developed "Market Information Delivery Distribution System") and credit card fraud detection (ACE-Plus).

▷ From FY06/12, the company has actively working on entrusted system development projects for DNP's group companies.

▷ To grow this segment, the company needs to either sell more server licenses to new and existing clients or add new features to sell to existing clients. Overseas sales (as domestic brokers expand overseas) could be a potential growth area. Domestically, IWI looks to increase the number of smaller brokerage clients. This can be done for instance, by linking price feeds with other services (order processing, algorithmic trading engines) and then marketing those as a single comprehensive solution. Another way of augmenting revenues could be to expand the current product line-up by selling packages developed overseas to clients in Japan.

ACE-Plus

▷ ACE-Plus is a software system that detects and prevents unauthorized credit card usage. The system uses either a "score" based system or predefined "rules" which determine if a transaction could be fraudulent. The scoring algorithm is a flexible solution where IWI provides the logic for generating scores, and users of the system update the data so scores are determined by recent (and relevant) transaction data.

▷ The company indicated that ACE-Plus is typically sold as a package (software, hardware, and installation) for approximately JPY150mn. The prices for maintenance range from JPY6mn to JPY10mn per year. Gross profit margins for the package exceed 50% and as typical for package software would tend to improve with more clients buying the system. At the same time, variable costs associated with installation and customization, mean that the margins are lower than for pure off-the-shelf packages (where they can theoretically reach 100%).

Technical Detail

▷ The logic in the ACE-Plus system can be configured to use either "rules" or "scores" to determine if a transaction is potentially fraudulent. The rules system is straight forward: if a transaction meets a set of established criteria (e.g. a rapid succession of purchases), action is taken to either delay and verify, or decline the purchase. The rules system supports up to several tens of thousands of rules. The scores system is more complicated. Internal logic determines if a specific purchase matches previous purchasing behavior and produces an approve/confirm/deny decision for the transaction. The historic purchasing behavior model is based on accumulated prior purchases (the system 'learns' how particular consumers typically buy).

▷ The practical implication for the learning ability of the scoring system is that the database becomes 'smarter' about consumer purchasing as the number of transactions for a particular consumer increase. This feature could be considered a competitive advantage; Shared Research understands that some competing products are based on data updates from software publisher, which leads to relatively higher prices when compared to ACE-Plus.

▷ Although some companies have opted for internally developed solutions, the company estimates that ACE-Plus is used by approximately 50% of the domestic market. The company indicated that it sees growth potential of overseas markets (mostly in Asia), citing two positive factors – emerging credit card usage in Asian countries, and the flexibility of ACE-Plus in terms of customization possibilities compared to packages offered by the overseas competitors.

▷ At the same time, IWI feels the need to develop package requiring less customization and thus carrying higher margins. Customization means higher additional variable labor costs. Incremental costs per unit of package software per se are very low, leading to higher margins.

Face Concierge

▷ Face Concierge is a system to enhance the usefulness and value of corporate and smartphone sites by directing visitors to appropriate pages and providing accurate responses to client questions. It can be applied to websites operated by businesses in various sectors. Under the system, the user speaks to a concierge (an image of a person) on the screen and asks questions. The user is then directed to relevant information and products. The company strengthened its sales activities for the service from FY06/14.

▷ This service can be applied for business-to-consumer websites with many FAQs. The company expected to generate JPY20mn–JPY30mn per client in initial payments, and JPY2mn–JPY3mn a year in maintenance services. However, sales did not rise as much as expected, so the company is considering adopting a new pricing structure that holds down initial payments.

OnCore

▷ Based on the technologies the company cultivated through operations related to securities trading, OnCore serves as a fundamental platform, mounted with NET+1 and ACE-Plus functions, for the development of various systems. The company plans to sell OnCore to various industries and businesses beyond the financial industry as bundled products (part of a set with hardware). In FY06/16, the product received its first order. IWI plans to expand sales not only in Japan but also in Southeast Asia and is simultaneously carrying out marketing research and system development.

Cloud services (Joint-use system for acquiring services, etc.)

▷ As part of new service creation, the company is providing a cloud-based joint-use system for its acquiring services (merchant managing services). IWI stated that installing the joint-use type system reduces the initial investment burden and makes it easier for financial institutions to start subscribing to the company's acquiring services, so it expects its business opportunities to expand. IWI stated that it had already received enquiries from multiple financial institutions, including regional banks for the development of acquiring services systems. As this system allows for joint cloud use, the previous need for customized system development for individual clients has been minimized (In cases where it is necessary, the company collects the appropriate development costs).

▷ IWI began offering the cloud-based acquiring service (merchant managing services) to three companies in the fall of 2016 and, as of the end of FY06/19, four companies had adopted it. Additionally, three other companies have adopted its fraud detection service and two others have adopted its network connection service. IWI is expanding marketing for its cloud services to secure more orders from financial institutions.

Product Solutions segment (FY06/19 sales: JPY1.1bn [10.6% of sales]; operating profit: JPY31mn [3.4%of OP])

	FY06/18				FY06/19			
(JPYmn)	1H Act.	2H Act.	FY Act.	% of sales	1H Act.	2H Act.	FY Act.	% of sales
Sales	**616**	**656**	**1,272**	**100.0%**	**425**	**682**	**1,106**	**100.0%**
Software development	21	68	89	7.0%	29	43	72	6.5%
Maintenance	51	161	212	16.7%	48	234	282	25.5%
Hardware	253	112	365	28.7%	2	80	82	7.4%
In-house packaged software	43	15	58	4.6%	113	20	133	12.0%
Third-party packaged software	246	299	545	42.9%	230	304	534	48.3%
Operating profit	**-81**	**30**	**-51**	**-4.0%**	**-48**	**80**	**31**	**2.8%**

Source: Shared Research, based on company data
Note: Figures may differ from company materials due to differences in rounding methods.

▷ This segment provides value-added systems and maintenance services for a range of industries and sectors, with a focus on packaged software for information security and other applications, including software developed both in-house and by other companies. The main in-house package software sold in this segment is CWAT (internal information leakage detection system); its third-party package software offering includes *Traps* (a cybersecurity product from Palo Alto Networks), *Deceptions Everywhere* (a targeted-attack solutions product from illusive networks), *SecBI* (a cybersecurity using a proprietary machine-learning engine to counter large-scale and/or prolonged cyber-attacks from SecBI), and *Ayehu NG* (an automated IT operating solution from ayehu).

▷ The Product Solutions segment, which had been stuck in the red for years, finally moved into the black in FY06/16 on the back of increased sales following rising demand for security-related products. The segment remained profitable in FY06/17 but slipped back into the red in FY06/18 on lower sales of CWAT, its very profitable in-house software, then moved back into the black in FY06/19 as sales of CWAT contributed.

▷ In order to respond to rising demand for cyber-security products, IWI plans to sell superior products, not only in-house package software, and to further expand business scale. As part of this effort, IWI conducts surveys for new products every three months in Israel, where cyber security measures are robust.

▷ Security is an area of great interest and high potential growth for IWI, when considering possible product collaborations with DNP. The companies already jointly worked on a security system for Credit Saison Co. (TSE1: 8253), combining DNP's IC cards with IWI's security networking technology. In addition to new products, IWI could receive access to DNP clients (potential users of CWAT system).

CWAT

▷ CWAT was developed in 2004 to secure information within a company's IT infrastructure and detect and neutralize threats in real-time. The system protects internal networks (preventing unauthorized computers from making network connections) and secures data (by detecting and preventing unauthorized use and access to sensitive files). CWAT uses a client/server architecture, which means that the system is installed on employee PCs, as well as a central server that collects system-wide information for monitoring and control.

Technical Detail

▷ CWAT is an extrusion detection system, which is a relatively new area of computer security which has garnered increased awareness since the late 1990s. Prior to that, the security community focused on ensuring intrusion detection and defense – to

stop threats “coming in from the outside”. Extrusion detection refers to security problems that originate from within a computer network or system. Examples of information extrusion can include either an employee emailing confidential documents to an outside party, or a virus-infected workstation uploading proprietary information to an outside attacker.

▷ The CWAT system is suitable for local networks (within one facility) and can optionally be configured to provide protection between company sites. Data provided by the company indicates that the software includes multi-language support: English, Japanese, Chinese, and Korean and allows for central management of a mixed-language environment.

▷ The technical challenge in developing an extrusion detection system is that both internal and external network traffic must be analyzed to determine if a threat exists. This contrasts with intrusion detection which can be as simple as blocking all external traffic at a network router or other gateway. For extrusion systems to achieve maximum effectiveness, the systems must examine data being sent out from the network and incoming data and be equipped with logic to determine the type of information being exchanged across the network. An example of the kind of problem that an extrusion system must be able to solve is if an email attachment is a proprietary memo or a personal letter to a friend.

▷ CWAT is a comprehensive information security system; it monitors and controls information accesses by employees and can detect and prevent information removal.

▷ Typically, clients purchase the CWAT system and maintenance as a package; the software is priced on a per-user (employee PC) basis, at approximately 19,800 yen per computer.

Other security-related products

▷ In FY06/12, IWI started selling third-party systems and package products from vendors it deemed to have superior technology . This new undertaking involved the offering of quasi-consulting services by coordinating these systems and products for users. The company now handles products for cybersecurity from a number of different overseas vendors, including *Traps* from US-based Palo Alto Networks.

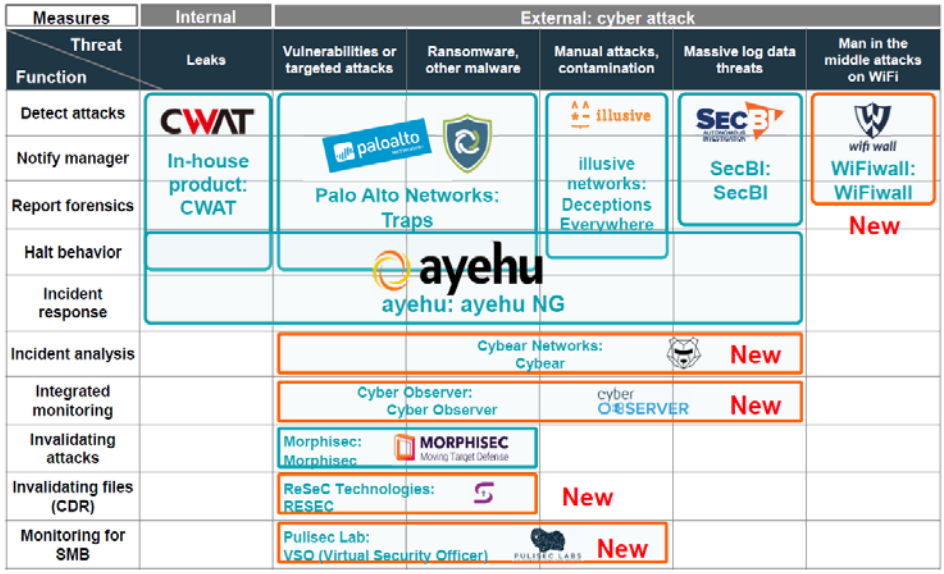
▷ In 2016, IWI began selling *Deceptions Everywhere*, a security software package designed to neutralize targeted attacks. To counter manual cyber-attacks mounted by technologically sophisticated attackers, *Deceptions Everywhere* uses lightweight deceptions at interior network endpoints to create an agent-less system to deceive and detect attackers that have gained entry to a network without detection.

▷ Ayehu NG from US-based ayehu is a vendor-neutral IT automation and orchestration platform that helps companies automate IT and security operations.

▷ In July 2018, the company reached an exclusive domestic sales agreement with SecBI (Israel) for the SecBI technology, which detects targeted attacks with AI (autonomous analytical engines analyze proxy communication logs for hidden threats). This technology is not installed into PCs but instead establishes a proxy through which all logs pass and analyzes the logs that accumulate within the proxy with AI to discover malicious software.

▷ In this manner IWI is expanding its lineup of in-house and third-party security solutions to meet the market's growing needs for security measures.

Security Solutions



Source: Company data

Relationship with Dai Nippon Printing (DNP; TSE1: 7912)

▷ The relationship between DNP and IWI began in began in roughly 2006. The two companies formed a business alliance in 2007 for the launch of a joint office security service for financial institutions and jointly developed an integrated security system for Credit Saison (completed in 2008). DNP made a tender offer for the company in August 2008, which was unsuccessful due to the inability to secure the minimum number of shares. Following the unsuccessful tender offer, the companies entered into an additional business alliance in November 2008, exchanging personnel in 2009 and entering into a joint marketing effort of IWI's new software product EUCSecure.

▷ DNP started a security-related industry group, Shared Security Formats Cooperation (SSFC) in 2005, to establish and promote a security format for contactless access cards (so-called "smart cards" with embedded electronic chips). IWI is a member of the SSFC, and support for SSFC is available in the company's CWAT system.

▷ DNP performed another tender offer for the company in February 2010 through which DNP became the largest shareholder of IWI (holding 50.61% as of April 9, 2010) and IWI became a consolidated subsidiary of DNP. As of June 30, 2018, DNP holds 50.66% of IWI's shares.

▷ For IWI, the closer relationship with DNP could mean increased opportunities for future growth. For example, the advances in cloud computing should increase demand for more intelligent security for resources and networks. The integration of IWI's security technologies with DNP's content and publishing products could be developed to meet the needs of the evolving market and delivered to the clients utilizing DNP's vast sales and distribution network.

Main facilities

The company has two facilities (Tokyo and Hakodate), with the majority of employees in Tokyo (as of FY06/18).

Earnings structure

The company's revenues are made up of initial payments for software packages or labor (for maintenance service) and license fees. Existing products and services are sold slightly differently: NET+1 projects are sold on a project basis (meaning that effective project management is needed to boost profitability), the Market Information Delivery Distribution System is sold on a per server basis (revenues are the same to the company if a client has 50 or 1000 dealers using the system), and the CWAT package is sold on a per protected PC basis. On a top-line basis, this means that the following variables are key for segment sales:

▷ Card business: number of projects, size of those projects, and project management

▷ System solutions business: number of server installations

▷ Security systems business: number of protected end user PCs (licenses)

The majority of the company's revenues stem from software development related to the company's in-house developed products (see Main Business Segment discussion). At the margin the cost structure can be described as more variable cost than fixed cost driven, to the extent that the company is operating at or near the full capacity in terms of its engineers.

The company has been investing in R&D to develop packages which can be more easily integrated into client systems. If the efforts to develop more packaged software (or software-as-service) are successful, this would increase incremental margins, increasing the financial attractiveness of the business model (after a software product has been created, it can be resold with minimal incremental costs).

Profitability snapshot, financial ratios

Profit margins (JPYmn)	FY06/09 Cons.	FY06/10 Cons.	FY06/11 Cons.	FY06/12 Cons.	FY06/13 Cons.	FY06/14 Cons.	FY06/15 Cons.	FY06/16 Par.	FY06/17 Par.	FY06/18 Par.	FY06/19 Par.
Gross profit	2,020	1,837	1,642	1,374	473	1,342	1,779	1,993	2,132	2,223	2,807
GPM	36.6%	37.1%	34.5%	26.2%	8%	20%	29%	28%	25%	21%	27%
Operating profit	229	358	321	132	-678	146	484	714	703	548	922
OPM	4.1%	7.2%	6.7%	2.5%	-	2.2%	7.9%	9.9%	8.3%	5.2%	8.8%
EBITDA	328	500	470	238	-547	336	740	928	1,040	1,033	1,629
EBITDA margin	5.9%	10.1%	9.9%	4.5%	-	5.1%	12.0%	12.9%	12.3%	9.7%	15.6%
Financial ratios											
ROA (RP-based)	4.6%	7.4%	6.1%	2.6%	-9.7%	3.2%	8.1%	10.8%	9.9%	6.6%	10.1%
ROE	4.6%	4.8%	2.8%	5.6%	-7.5%	1.9%	10.1%	9.7%	10.3%	6.6%	11.3%
Total asset turnover	1.1	0.9	0.9	0.9	1.0	1.2	1.0	1.1	1.1	1.2	1.1
Inventory turnover	13.4	18.3	24.5	12.9	10.2	12.6	22.8	26.2	11.6	12.2	12.9
Days in inventory	21.8	15.5	14.2	45.3	39.0	17.6	11.1	18.5	47.7	23.8	30.6
Working capital	1,093	1,218	947	1,249	1,227	882	985	1,420	1,709	1,530	2,022
Current ratio	449%	587%	500%	378%	353%	400%	397%	341%	221%	200%	198%
Quick ratio	369%	541%	472%	316%	275%	350%	334%	302%	158%	156%	154%
OCF / Current liabilities	53.9%	46.9%	117.5%	26.3%	-54.6%	65.7%	82.6%	9.9%	64.7%	50.8%	44.3%
Net debt / Equity	21.7%	17.4%	21.5%	29.3%	29.4%	26.7%	34.1%	38.8%	50.7%	54.6%	57.4%
OCF / Total liabilities	48.3%	37.2%	78.6%	17.4%	-45.0%	52.2%	50.9%	6.3%	41.0%	38.9%	33.8%
Cash conversion cycle (days)	51	84	48	44	56	41	37	58	58	38	66
Change in working capital	-321	125	-272	302	-22	-345	103	435	289	-179	492

Source: Shared Research based on company data
Note: Figures may differ from company materials due to differences in rounding methods.

The company's gross profit margins were relatively stable from FY06/01 through FY06/11. But in FY06/12 and FY06/13, the GPM nosedived to 26% and 8% due to some unprofitable large projects. Earnings recovered in FY06/14 as the impact of an unprofitable project receded. However, profits are trending up, with a significant reduction in the number of unprofitable transactions from FY06/14 and the company is maintaining a gross profit margin of 20% or more. However, the FY06/18 gross profit margin fell 4.2 pp YoY as large-scale projects became unprofitable due to defects discovered in internal integration testing.

Group companies

ODN Solutions is an IWI's affiliate (in which IWI holds a 33.9% stake). Based in Okinawa, ODN Solutions primarily serves as a software development subcontractor for some of the work done by IWI's Financial Systems Solution business.

Group strategy

The majority of the company's business activity is domestic. The company seems keen to increase its presence overseas, however it will likely take time before overseas revenues can make a meaningful contribution.

Market and value chain

Market overview

The IT services industry market in Japan was approximately JPY16tn (source: Ministry of Internal Affairs and Communication (MIC) and Ministry of Economy, Trade, and Industry (METI) 2018 survey). The industry can be broadly categorized into multiple tiers, from large companies that serve as prime contractors for complex projects spanning multiple years to smaller firms that have specific fields of expertise. Large projects (such as back-end office system integration for a financial institution) are usually taken by “Tier 1” prime contractors (e.g. NTT Data Corp. (TSE1: 9613), Nomura Research Institute (TSE1: 4307), IBM Japan), who then allocate parts of the project to lower tier subcontractors, with the work then going down the food chain to the lowest level, small software firms with few employees.

IT needs of Japanese banks and other financial companies are relatively unique when seen from outside of Japan. In Japan, the system of “kouza furikae,” or automatic account transfer, is widely used for moving funds both between the accounts of one person (from ordinary to savings etc.) and for outside payments ranging from utility bills to taxes. This system leads to massive amounts of transactions concentrated in a few days of each month (mostly the 27th and 3rd). Banks therefore need to use large-scale batch processing to enable smooth settlement flow. The use of batch processing is one reason why mainframe computers (large machines often occupying dedicated computer centers) remained at the core of Japanese financial IT systems, while global counterparts have migrated to distributed (client/server and increasingly cloud) computing.

Mainframes are big and expensive and represent substantial sunk costs for customized software. Furthermore, until the 1990s, mergers between Japanese corporations and overseas acquisitions were uncommon, as were frequent job changes for managers. That meant lower need for system compatibility and “best practices” sharing. The result was that processes and systems evolved into unique ecosystems requiring proprietary software and large-scale customizations as opposed to buying packaged software and building management practices around it. Systems were updated in an evolutionary rather than revolutionary way. Additionally (although that has been changing in the past years), relatively few M&A meant that needs for standardized plug-and-play systems were less pronounced than in the US or Europe.

The situation has been changing dramatically in the past few years. Waves of consolidation and overseas expansion meant that most Japanese industries shifted to distribute computing models (the banking industry being an exception). The drive to lower costs boosted demand for package software. However, in many respects the domestic business package software industry never truly took hold while overseas packages often needed so much customization to fit Japanese management practices that in many ways they stopped being “packages”.

The arrival of cloud computing and software-as-a-service (SaaS) brings about new and accelerating wave of change. In Shared Research’s opinion, packages were hard to sell in Japan partially because this needed to be done through system integrators whose real incentives were to customize. SaaS-type solutions, on the other hand, can be provided either directly by developers or through service providers. For instance, a publishing company could integrate its offering of digital document security with a rights management system. Such developments could represent an intriguing opportunity for IWI in light of its relationship with DNP.

Cashless society

Japanese government promotes cashless society

Aims for 40% of transactions to be cashless by 2025

Under its Revision of Japan Revitalization Strategy put in place in 2014, the Japanese government first raised the issue of increasing the prevalence of cashless payments as a means of increasing payment convenience and efficiency. In its Japan Revitalization Strategy 2016, the government went a step further by actively promoting the spread of cashless payment systems with an eye on facilitating spending by the large number of overseas visitors coming to Japan for the 2020 Summer Olympics and Paralympics. This was followed in May 2017 by the release of the government's *FinTech Vision*, a comprehensive set of policy recommendations aimed at promoting the move towards cashless payments, an essential element to the digitalization of settlement accounting that was needed to fully realize the added-value of FinTech services. This was followed in June 2017 by the

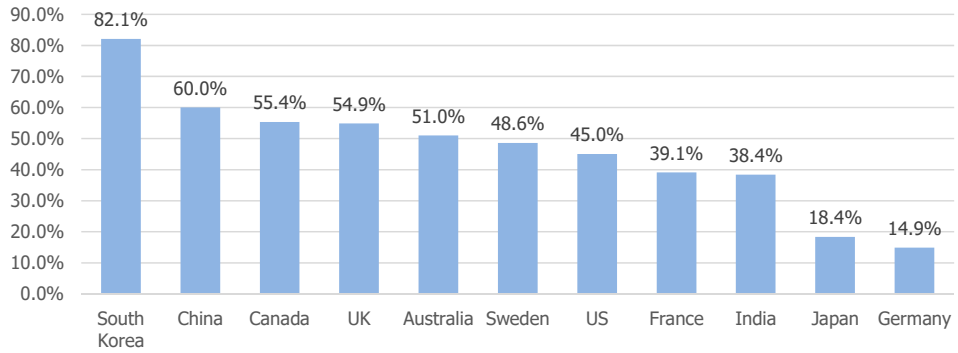
Cabinet's approval of the government's Investments for the Future Strategy 2017 in which it established a target for Japan's cashless transaction ratio of 40% within 10 years (i.e., by 2027).

In April 2018, Japan's Ministry of Economy, Trade, and Industry then came out with its *Cashless Vision* policy paper, in which it moved forward the target for a cashless payment ratio of 40% by two years, to 2025, when Japan is slated to host the World Expo in Osaka. METI's Cashless Vision included the "Declaration of Payment Reform" under which the government set a future goal for Japan's cashless payment ratio of 80%, which would be among the highest in the world.

METI's Cashless Vision

According to METI's Cashless Vision policy paper published in Aril 2018, cashless payments were used for only 18.4% of household final consumption expenditures in 2015. (Note: According to figures published in the *Cashless Roadmap* 2019 by Payments Japan, the cashless payment ratio was up to 21.3% in 2017, with 90% of this accounted for by payments made with credit cards.) As shown in the figure below, Japan's cashless payment ratio is low compared with many other countries.

Cashless payment ratio: international comparison (2015 data)



Source: Shared Research, based on data from METI *Cashless Vision*, which calculated the cashless payment ratio using 2015 household final consumption expenditure data from the World Bank and annual data on noncash payments from the BIS Redbook Statistics (2015). Figures for China drawn from report by Better Than Cash Alliance, and included for reference purposes only

According to the figures in METI's Cashless Vision policy paper, Japan's cashless payment ratio has risen steadily from 11.9% in 2008 to 20.0% in 2016. It still remains well below the level seen in other countries, however, a result that is believed to be due in part to the affinity Japanese seem to have for cash transactions. The policy paper listed four factors that contributed to the affinity of Japanese for cash payments:

- ▷ The high level of public order, in which robberies are few and even lost wallets with cash are said to be returned to their contents intact
- ▷ The good condition of paper money in circulation, the scarcity of counterfeit bills, and the high level of trust accorded cash payments
- ▷ The speed and accuracy of cashiers at stores and scarcity of mistake handling cash payments
- ▷ The ease and convenience with which consumers can withdraw money from ATMs

At the same time, METI's Cashless Vision policy paper identified a number of issues on the merchant side, including installation, operation and maintenance, and cash flow-related issues, that are impeding the move to cashless payment systems on the side of the store operator.

- ▷ Cashless payment systems installation: the policy paper noted that in addition to the usual direct costs associated with the installation of payment terminals, there were other costs that the store operators have to bear including the cost of the space needed for the new terminals and the cost of the line connections to the new terminals.

▷ Operation and maintenance of cashless payment systems: the policy paper noted that stores have to bear usage fees in the case of cashless payments that they do not bear when the payments are made in cash. There are also additional operating costs incurred by stores, such as providing sales receipts, that are not incurred when payments are made in cash.

▷ Cash flow: the policy paper noted that cash payments provide immediate liquidity to store operators while the receipt of payments made by most credit cards comes with delays of two to four weeks.

From the perspective of consumers, METI's Cashless Vision policy paper noted that the presence of many stores that do not accept cashless payments and the various concerns*1 consumers have about credit cards and other forms of cashless payments also present a barrier to the more widespread use of cashless payments.

From the perspective of the payment service business operator, the policy paper noted that the added cost and Japan's unusual multi-acquiring environment*2 also present barriers to adopting cashless payment systems.

*1 These concerns include credit card security, worries about the risk that their rights may be violated with them knowing, and worries about credit card use by the elderly.
*2 In the US, Europe, and in other countries where banks are involved in the credit card business, each merchant normally uses a single acquiring service. In contrast, in Japan, the way industry practices have developed over the years has merchants choosing from multiple acquiring services. Because under this arrangement merchants in Japan cannot be locked into a single acquirer through an exclusive contract, the principle of free market competition has worked over the years and large merchants that can be expected to generate large volumes of credit card transactions have been able to drive down their own merchant fees by precipitating price wars among acquiring companies. In contrast, small shops that do not generate many credit card transactions have been stuck paying relatively high merchant fees. As a result of this client mix —very large retailers that have high credit card transaction volumes but pay very low merchant fees, and very small retailers that pay high merchant fees but have very low credit card transaction volumes—the acquiring business as a whole is not very profitable. This low profitability in turn makes acquiring businesses reluctant to actively investing in recruiting new merchant stores for their payment service, leaving the number of merchant stores accepting credit cards largely unchanged, according to the analysis presented in METI's Cashless Vision policy paper.

METI's Cashless Vision policy paper set out the following policy recommendations to help promote cashless payments (excerpts):

▷ To eliminate resistance to the installation of cashless payment systems at the store level, make cashless payment acceptance obligatory/recommended, make provisions for small-value purchases, promote digitalization of receipts, provide subsidies to support cashless payment system installation/operations, provide tax incentive for cashless payment system installation.

▷ To provide more opportunities for consumers to see how cashless payment systems are more convenient, get a better handle on real consumer needs with regard to cashless payments, put in place services that will become the de facto standard, address consumer concerns about cashless payments systems, put in place reliable consumer protection laws (such as zero liability*1), provide more consumer education, provide incentives for using cashless payment systems.

▷ To create an environment that will encourage more payment service businesses to change their business models, reconsider merchant fee structures*2, put in place universal identification and identification confirmation system.

*1 Under a zero liability system, consumer protections (zero liability) put in place by card network would, assuming the conditions set out by the payment service business operators are met, exempt consumers from all liabilities for purchases of goods and services resulting from the unauthorized use of their cards.
*2 According to METI's Cashless Vision policy paper, the fees paid by merchant to the card settlement company they are using averages 3.09% per transaction with a median of 3.00%. The fees borne by the merchant must cover all the necessary operating costs of the payment service provider; these feeds are broken down into include the merchant discount rate (MDR), paid to the payment service company whose system is installed, an interchange fee (called an interchange reimbursement fee in the case of Visa), a private license fee, and the bank transfer fee to handle the final transfer of funds into the merchant's bank account.

In conjunction with the consumption tax rate hike in October 2019, the Japanese government will introduce a "point rebate" system to encourage greater use of cashless payment systems.

▷ The point rebate system will go into effect when the consumption tax rate is hiked on October 1, 2019, and will be in place for a total of nine months after the consumption tax rate is increased. With the point rebate system, the government is looking to spread out the impact the tax hike will have on consumer demand while at the same time promoting the use of cashless payment systems with the aim of increasing productivity and consumer convenience. This includes providing support for small and medium-sized businesses operators that accept cashless payments*1. The government's budget for FY2020 includes a total of JPY279.8bn for this and related initiatives, as detailed below.

▷ Rebates to consumers: During the first nine months after the consumption tax rate hike takes place on October 1, 2019, consumers will be rebated a portion of the consumption taxes paid*2 when using cashless payment systems to pay for purchases of goods and services from qualified small and medium-sized businesses operating retail shops, restaurants/drinking establishments, and service businesses.

*1 In the case of retail businesses, small and medium-size businesses are defined as those with capital of less than JPY50mn and fewer than 50 employees. To qualify for the rebate program, the business operator must register with one of the credit cards companies or cashless payment service operators from a government-approved list and must install cashless payment terminals from the cashless payment service provider. The specific types of businesses that qualify for the program will be posted in a list created by the Ministry of Economy, Trade, and Industry. Among small and medium-sized companies, those fitting the following description are not eligible for the program. Those whose average annual income for the three fiscal years prior to applying for the program is more than JPY1.5bn and those that are wholly owned either directly or indirectly by a company with legal capital or capital is JPY500mn or greater.
*2 As a general rule, consumer will receive a rebate equal to 5% of the amount spent at the qualified business. If the small/medium-sized business is a franchise outlet of a major franchise chain operator, the rebate rate will be only 2%.

▷ Subsidies for installation of cashless payment terminals: For qualified small and medium-sized businesses, the government will provide subsidy payments to cover the cashless payment terminals and their installation equal to two-thirds of the total cost, provided the payment service provider covers one-third during the nine-month period immediately following the consumption tax hike.

▷ Subsidies for cashless payment fees paid by merchant: For qualified small and medium-sized businesses, the government will provide subsidy payments equal to one-third of the merchant fees (must be less than 3.25%) paid by these businesses during the nine-month period immediately following the consumption tax hike.

Excerpt from the book *Denshi manee kakumei ga yattekuru!* (The Electronic Money Revolution is Coming!)

The following is an excerpt from *Denshi manee kakumei ga yattekuru!* (The Electronic Money Revolution is Coming!) co-written by the founder and chairman of IWI Kazuhiko Adachi and former senior researcher at Nomura Research Institute Hideo Yamazaki (partially modified by Shared Research).

FinTech such as Apple Pay*1 are drastically affecting core information processing services, causing vast FinTech-related development expenditure to flow into the industry. The information processing industry is fueled by the advent of FinTech such as server-based electronic money*2 including Apple Pay and Android Pay*3 and virtual currencies*4. Realization of FinTech is predicated on abandonment of cash, in other words, the advent of a cashless society owing to smartphone-based payment systems*5 such as Apple Pay and Android Pay, reform of money transfer mechanisms by server-based electronic money and virtual currencies, and employment of NFC chips*6 and a mobile POS method*7 on paying device end. In the cashless society, digitalized money basically travels across barriers irrespective of banking frameworks and categories such as virtual and server-based. Although only a small amount of digitalized money will be handled in the beginning, limitations will be eliminated gradually.

*1 Apple Pay
Apple Pay is an electronic payment service based on iPhones and Apple Watches. By using an iPhone 7, iPhone 7 Plus, or Apple Watch Series 2 which were sold in Japan, the electronic payment service can be used at public transportation and stores in Japan and on applications. Some functions are available on iPhones 6. Users can transfer data from a Suica card or credit card to the iPhone to use it in Apple Pay. The service was started on October

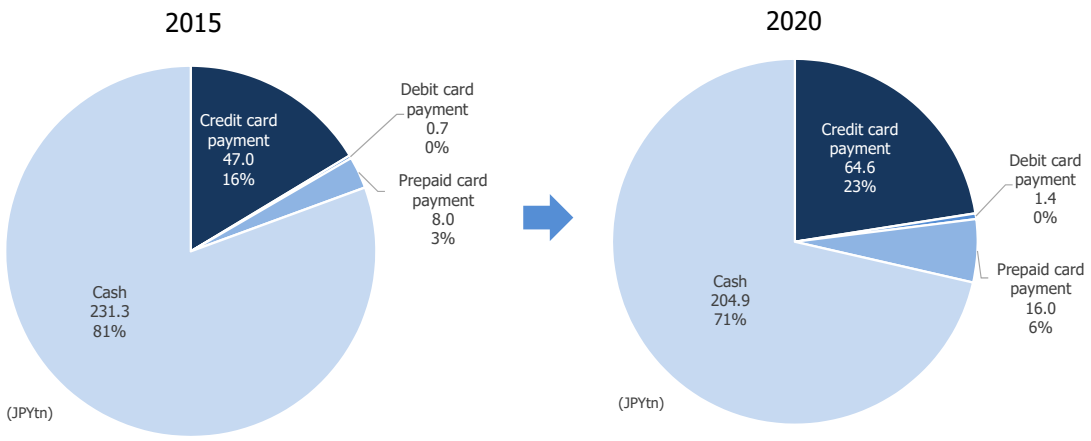
25, 2016 in Japan following nine countries including the US, UK, and Australia where the service had been started. Apple Pay is compatible with Suica, iD, and QUICPay.

*[2] Server-based electronic money
A report on the survey of household economy issued by the Ministry of Internal Affairs and Communications defines electronic money as currency value equivalent to cash transferred into the following cards and devices: IC card-type electronic money including Rakuten Edy, Suica, ICOCA, and PASMO, mobile phone-type electronic money including mobile wallets, and prepaid-type electronic money including Web Money, BitCash, and QUO cards. Electronic money can also be categorized by whether currency value is contained in a card or managed on a server on the Internet. The former method can be called stored value card. The latter method is generally called server-based electronic money, which corresponds to the methods of Web Money and BitCash. Server-based electronic money is spreading in e-commerce and online game payment. In October 2016, Apple Pay became available in Japan. Payment via Apple Pay within Japan is always correlated with server-based electronic money such as Suica, iD, and QUICPay. This is significantly different from overseas payment via Apple Pay as it is credit card payment.

*[3] Android Pay
Android Pay is an electronic payment service based on Android smartphones (devices with Android OS 4.4 KitKat or later installed). The service was started on December 13, 2016. It is compatible with Rakuten Edy and nanaco.

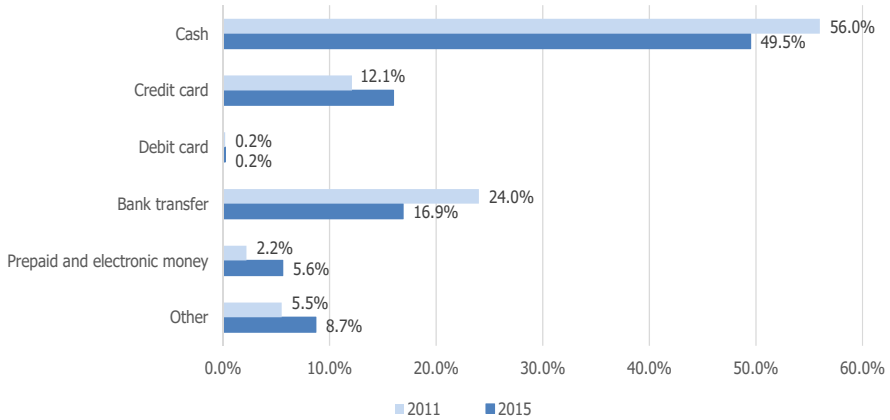
Shift from conventional electronic money to server-based electronic money
JR East's Suica had been stored value cards, but they were reborn as server-based electronic money to be compatible with Apple Pay. Likewise, Rakuten Edy is transforming itself into server-based electronic money to be compatible with Android Pay. The currency value of server-based electronic money is stored on a cloud server on the Internet.

Prediction of electronic payment ratio (2015-2020)



Source: Shared Research based on data from *Denshi Kessai Soran 2015-2016* issued by CardWave Co., Ltd., ePayments Laboratory Inc., and Yamamoto International Consultants

Ratios of payment methods in Japan's consumer expenditure



Source: Shared Research based on Credit Saison Co.'s financial results

***4 Virtual currency**
The Payment Services Act revised in 2016 defines virtual currency as property value that can be used in payment for goods and services, trading, and exchange among many and unspecified persons and that can be transferred by an information processing system. Although virtual currencies are not legal currencies, they are understood as one of payment means. Besides, virtual currencies are considered to be one of variations of server-based electronic money. Note, however, that virtual currencies can be traded for speculation purposes as conversion rates fluctuate while electronic money is used for payment purposes.

***5, 6 FeliCa chips incorporated into smartphones**
Smartphones sold in Japan (Android phones and iPhones 7) are provided with a FeliCa chip using a non-contact IC card technology developed by Sony. Smartphones provided with a FeliCa chip are used as IC transit cards, electronic money, IDs, tickets, membership cards, etc. FeliCa is non-contact IC card technology for performing communication between a reader/writer and a card (chip) by electromagnetic wave (Communication is performed in a 13.56MHz frequency band and at a speed of 212kbps/424kbps; Characterized by asymmetrical transmission without a subcarrier). FeliCa is characterized by: high-speed processing capability that allows processing between a reader/writer and a card and cryptography processing to finish within about 0.1 second; management of multi-purpose data by a single card; and security. FeliCa's technical specification (NFC-F) is different from Type A and Type B of NFC (Near Field Communication) technology which are standard specifications in Europe and the US. However, FeliCa also supports the wireless communication protocols and command/response protocols of Type A and Type B. FeliCa Networks (capital composition: Sony Imaging Products & Solutions accounts for about 57%; NTT DoCoMo about 38%; and East Japan Railway Company about 5%), which is the FeliCa chip developer, formed business alliances with NXP (currently QUALCOMM in the US; QUALCOMM acquired NXP in October 2016) in the Netherlands which supplies chips of Type A and Type B and with Samsung to jointly develop a chip combining the three types: NFC-F, Type A, and Type B since 2012. The outcome led to the incorporation of FeliCa chips into iPhones 7. Shared Research thinks that the high-speed processing capability (within a processing time of 0.1 second of automatic wickets, which is about 1/50 of processing time of Type A and Type B) of FeliCa (NFC-F) played a crucially important role for deciding to incorporate FeliCa chips into iPhones 7. That is, Type A and Type B do not allow passengers to smoothly pass through Japanese automatic wickets. That said, iPhones 7 sold in Japan allows the electronic payment service only in Japan. FeliCa chips are manufactured by Dai Nippon Printing Co., Ltd. (TSE1: 7912) that owns over 50% of IWI shares. In March 2017, besides, DNP started selling cards that allow non-contact IC payment in and outside Japan (i.e. cards compatible with all the transmission methods: NFC-F in Japan and NFC-A and NFC-B outside Japan).

***7 Mobile POS**
POS systems using tablet terminals and smartphones. Making existing POS terminals work in conjunction with tablet terminals or replacing existing POS terminals with tablet terminals allows reduction in initial investment.

Clients

The company's main clients are credit card companies and other financial institutions (securities firms, banks, non-bank consumer finance companies).

Suppliers

The company's main offering is software and services that it develops, however the company does act as an agent for some software packages (see Business description).

Barriers to entry

Barriers to entry surrounding the company's main business (credit card processing network) are relatively high. The largest challenge that a potential entrant would have to overcome would be technological: recreating the company's 24/7 fault tolerant NET+1 computer system. Another potential barrier to entry is the existing depth of the market penetration—the NET+1 system is already used by 70% of all major credit card companies and the benefits for existing users should be very significant to justify switching to a new system, something that could be hard for a competitor to offer.

Barriers to entry for the company's other products types (security and systems-related) are relatively high due to the costs and time required to develop similar technologies.

Competition

In terms of Retail Banking Online Systems, the company's product offering is relatively unique, and its dominant position in Japan's credit card transaction network means that there the direct competitors are few. Few companies that offer competing solutions are worth mentioning. In credit card systems, TIS Inc. (TSE1: 3626) developed a large-scale integrated package (both

back- and front-end) for JCB Co. In an approach unique for the Japanese back-end systems, the TIS' system is based on UNIX platform.

Japan Research Institute, Ltd. (Unlisted) has extensive experience in credit card systems. It is 100% owned by the Sumitomo Mitsui Financial Group (TSE1: 8316) and is its official systems purveyor.

Substitutes

There are few substitutes for the company's core product (NET+1) or the company's security products. Both the credit card network and security detection and prevention can be considered essential to the company's clients.

Strengths and weaknesses

Strengths

- **Dominant position in the front-end credit card market**: The company claims a high market share (70% of the front-end processing of the major credit card companies). This means stable maintenance and repeat order cash flows, allowing IWI to explore new avenues of growth while leveraging its sales network to deliver new products and services to its established client base.
- **Cooperation with DNP**: seems apparent that the relationship with DNP holds significant promise for IWI. The clout of DNP's financial strength and its vast relationship network could mean substantial growth opportunities if utilized skillfully. Shared Research thinks that a couple conditions need to be met for this strength not to become an Achilles heel. First, IWI must sustain its independent status and develop its own flexible and profitable agenda in the alliance, without succumbing to a large bureaucracy that inevitably characterizes firms the size of DNP. Second, any projects that IWI undertakes with DNP must have a time frame and a cash flow profile optimal for a smaller and younger company such as IWI. In simple terms, this means that joint projects must come in easy-to-digest sizes and have high ROI.

Weaknesses

- **Small size in the market where size matters**: The biggest revenue drivers are currently linked to large projects of which IWI is a small part, the company is unable to provide prime contractor level large-scale system integration. That makes it difficult for IWI to develop a truly independent long-term strategy. At the same time, this is a situation when the weakness can lead to cultivating a new strength as the management is focused on developing package software and service solutions for growth.
- **Relatively weak sales channels when it comes to distributing small scale package software to numerous, especially non-financial clients (e.g., security packages)**: IWI cultivated relationships with a few financial institutions but increasingly needs a more broad-and-shallow distribution network suitable for selling packaged software, software-as-a-service, and distributed service solutions to new client types. To some extent, this weakness might be partially manifesting itself in a fact that the most promising area for the company, the Security Systems, is currently the least profitable. The company's ability to sell overseas is also an area of weakness. While the company feels that its products could be competitive internationally, particularly in Asia, building the channels is costly, time consuming, and fraught with challenges.

Historical performance and financial statements

Historical performance

Q3 FY06/19 results

▷ For cumulative Q3 FY06/19, IWI reported parent sales of JPY7.7bn (-1.8% YoY), operating profit of JPY676mn (+84.2% YoY), recurring profit of JPY688mn (+84.5% YoY), and net income of JPY467mn (+95.8% YoY). Operating profit in cumulative Q3 F06/19 has already surpassed the full-year FY06/18 operating profit of JPY548mn. The progress rate of profits in cumulative Q3 FY06/19 has also exceeded the level in cumulative Q3 FY06/18 (see below).

▷ Sales were down 1.8% YoY. In Financial Systems Solutions, the business environment remained favorable in light of moves toward a cashless society and diversification in payment methods, but sales were up just 0.9% YoY due to the smaller scale of large development projects. Product Solutions segment sales fell 24.6% YoY on declining hardware sales.

▷ Operating profit up 84.2% YoY. Financial Systems Solutions profit posted a sharp 50.8% YoY increase on higher sales of the company's in-house developed package software used in FEP systems (Front End Processor: systems that relay inquiries regarding credit card payment approval to credit card companies' credit centers) development. In Product Solutions, robust sales of in-house developed package software helped to narrow the operating loss from JPY129mn in Q3 FY06/18 to JPY73mn. The GPM improved by 6.8pp YoY to 27.1%, the SG&A ratio rose 2.7pp to 18.3%, and the OPM rose by 4.1pp to 8.8%.

▷ Cumulative Q3 sales achieved 71.9% of the full-year FY06/19 target (versus 73.8% in cumulative Q3 FY06/18 sales against the FY06/18 sales results), operating profit 76.8% (67.0%), recurring profit 76.5% (65.0%), and net income attributable to parent company shareholders 75.3% (63.2%). Each profit item has achieved significantly high progress rate. By segment, while the Financial Systems Solutions segment results have exceeded company targets, the results in the Product Solutions segment have short of the targets.

▷ The order backlog as of end-Q3 FY06/19 was JPY5.7bn (+23.7% YoY); JPY2.2bn (+30.0% YoY) in the cloud services business, JPY1.8bn (+8.6% YoY) in the software development business, and JPY1.7bn (+34.4% YoY) in other business. Lack of large-scale development projects was compensated for by other development projects and growth in cloud services, leading to strong results.

▷ The company has not changed its FY06/19 forecasts.

In the financial and credit card industries, IWI's main business areas, negotiations for capex projects have remained robust in light of promotion of a cashless society and diversification in payment methods. To the company, this means the business environment remains favorable.

Trends by client (top three companies)

Sales to the top three corporate clients are as follows: Dai Nippon Printing (DNP) accounted for JPY1.3bn in sales (smartphone payment, payment platforms, and security products; -JPY303mn YoY), more than any other client. A credit card company accounted for the second highest sales amount at JPY674mn (credit card brand integration; -JPY965mn YoY). Third highest was also a credit card company, at JPY608mn (network connections; +JPY362mn YoY). The company and DNP run a joint payment business and have been winning orders for new projects not only for credit card payments, but also smartphone payments. Even so, sales declined YoY. While the company has significantly increased sales through large-scale credit card brand integration projects, it booked large sales in FY06/18 under contract agreements for several processes (design, development, and testing), but this has peaked, and the current process (external integration) is being performed under system engineering service (SES) contracts. The project noted above for third highest sales is a network connections project.

DNP and credit card brand integration projects mainly drove growth in sales through FY06/18, but these saw declines in FY06/19 as anticipated in its initial forecasts. At the same time, sales in cloud and development services for clients other than the top three companies increased and credit card fraud detection projects expanded, compensating for the decrease in sales to DNP and from large scale projects.

Segment overviews

Financial Systems Solutions segment

- In cumulative Q3 FY06/19, this segment reported sales of JPY7.1bn (+0.9% YoY) and operating profit of JPY748mn (+50.8% YoY). Sales reached 76.0% and operating profit 89.1% of the company's FY06/19 forecasts.
- In the software development business, YoY decline in software development sales (-17.5% YoY in cumulative Q3 FY06/19) was factored into the company plan due to reduced major development projects as their testing processes have been completed. Other development projects and cloud services performed well, and the Financial Systems Solutions segment as a whole achieved an increase in sales of 0.9% YoY. Supported by the shift to cashless transactions, new construction, expansion, and reconstruction of FEP systems in particular performed well.
- Operating profit rose 50.8% YoY. Main factors behind this increase were higher sales of in-house software package used for network connections (particularly NET+1, the core of FEP system development), improved cloud services sales, no occurrence of unprofitable projects (in cumulative Q3 FY06/18 unprofitable projects reduced profit by JPY172mn), and more effective use of human resources which were previously allocated to large-scale projects. Package sales include earnings (approximately JPY200mn-300mn) booked ahead of schedule (in Q4 FY06/19) due to client inspection timing.
- IWI focused on consigned development in Q3 FY06/18, but changed its focus to system engineering service (SES) contracts in Q3 FY06/19, putting downward pressure on margins. Despite this factor, it is notable that OPM improved 3.5pp YoY to 10.6% as a result of factors described above. The number of contracts for cloud services grew steadily and in line with plan*[1].
- The company is proceeding with development of the next-generation NET+1 gateway system (allowing easy connection not only with existing networks, but with a range of other networks, including for new payment services) and a next-generation fraud detection system*[2] (using artificial intelligence to handle expansion in transactions conducted in the absence of face-to-face contact).

*[1] Fees from cloud services such as the acquiring business (IOASIS), credit card fraud detection ASP service (IFINDS), and OnCore Switch (IGATES) were JPY459mn (+JPY182mn YoY) during cumulative Q3 FY06/19. Four companies have been using IOASIS, and IWI has completed a contract with a fifth company. The company plans to develop the customized system in the next half year for this fifth client, and to begin operations in FY06/20. IFINDS has been in operation with a second company since Q1 FY06/19, and with a third company since Q3 FY06/19. IGATES has been in operation with a second company since Q2.

*[2] IWI's ACEPlus (the fraud detection product it has been providing to prevent damage from illicit credit card transactions), whenever there is a credit request from either inside or outside Japan, conducts real-time verification based on rules registered by the user. In contrast, the next-generation fraud detection system has improved processing capacity by using AI to assign a score to transactions, determining any transaction with a score beyond a predetermined threshold to be illicit. However, the system automatically produces a score for many foreign products and the detection and valid detection rates are low, so there is a risk that even proper transactions will be identified as illicit. Nevertheless, IWI has completed a trial of the next-generation system and achieved the initial target figures for detection and valid detection rates, so it plans to launch the product during 2019. As with ACEPlus, the company aims to achieve a top market share with this new fraud detection system to be used specifically for ecommerce to shorten the time required for fraud detection in non-face-to-face (online) transactions.

Fluctuation in profit margin

In the Financial Systems Solutions segment, the order scale varies from one development project to another. Moreover, costs may come out higher than expected in each separate process of the project, and gross profit margin varies from project to project. All these factors contribute to fluctuation in profits of the segment as a whole. Furthermore, as the company sells servers and other equipment when clients order new systems or upgrade their existing systems, hardware sales vary depending on the project. Fluctuation in profits from hardware sales also contributes to fluctuation in profit margin of the entire segment.

New project: for broadcasters

The company has proposed a product for broadcasters to support the migration of broadcasting systems to IP technology, began operation on a trial basis in Q3 FY06/19, and is currently testing it. This is a system for the high speed delivery of large volumes of 4K and 8K high-density and high-definition data, and monitoring loss of files. According to the company there are no similar products, either in Japan or overseas. The results of a survey of the company's main members of overseas demand in April 2019, indicate the likelihood of strong demand overseas as well, and so the company aims to seize opportunities for actual negotiations overseas in FY06/20.

The company's client targets are mainly in the finance industry, but notably this can be expanded to other industries.

Starting in December 2018, 4K and 8K broadcasts from broadcasting and 110 degree communication satellites will begin. It will be necessary to have receivers and conditional access system (CAS) chips compatible with the new standards for 4K and 8K broadcast reception. IWI is offering broadcasters with low-latency and high-security network connections that connect CASs of the broadcasters and the audience.

Product Solutions segment

- The segment reported sales of JPY621mn (-24.6% YoY) and an operating loss of JPY73mn (operating loss of JPY129mn in Q3 FY06/18). Sales of in-house developed package software were up YoY, but hardware sales and software development were down. Sales reached 44.4% of the company's FY06/19 forecast.
- Large orders for the proprietary CWAT system, which prevents internal data leaks, meant higher sales YoY, but sales of third-party software package Traps (which prevents external cyberattacks) slowed as malware the Traps software could not stop made an appearance. Hardware sales also decreased significantly. User needs are changing, to include not only the prevention of intrusion from outside, but also actions after stopping such intrusions. The company plans to compensate for the drop in sales of Traps with a new Israeli product.

Listing moved to TSE First Section

The company's listing moved from the Second Section of the Tokyo Stock Exchange (TSE) to the First Section of TSE on March 27, 2019.

1H FY06/19 results

- For 1H FY06/19, IWI reported parent sales of JPY5.0bn (+7.4% YoY), operating profit of JPY269mn (+41.5% YoY), recurring profit of JPY282mn (+43.0% YoY), and net income of JPY205mn (+58.4% YoY)
- Orders were up YoY, increasing for cloud services and for software development and hardware sales targeting existing clients
- Sales were up 7.4% YoY and operating profit up 41.5% YoY as the business environment remained favorable in light of promotion of a cashless society and diversification in payment methods. In Financial Systems Solutions, sales were up 13.2% YoY and operating profit up 16.9%, contributing significantly to overall results. In Product Solutions, sales were down 31.0%, but robust sales of in-house developed package software helped to narrow the operating loss
- 1H sales achieved 107.2% of the 1H FY06/19 target, operating profit 84.1%, recurring profit 85.4%, and net income attributable to parent company shareholders 89.1%. 1H sales were ahead of plan, but profits lagged on higher personnel expenses and R&D spending (costs increased with temporarily increase in personnel to deal with malfunctions in cloud development)
- 1H sales achieved 47.1% of the full-year FY06/19 target (1H FY06/18 sales were 44.3% of FY06/18 sales result), operating profit 30.6% (34.3%), recurring profit 31.3% (34.3%), and net income attributable to parent company shareholders 33.0% (34.2%)
- The company has not changed its FY06/19 forecasts

In the financial and credit card industries, IWI's main business areas, negotiations for capex projects have remained robust in light of promotion of a cashless society and diversification in payment methods. To the company, this means the business environment remains favorable.

Trends by client (top three companies)

Sales to the top three corporate clients are as follows: Dai Nippon Printing (DNP) accounted for JPY937mn in sales (smartphone payment, payment platforms, and security products; -JPY104mn YoY), more than any other client. A credit card company accounted for the second highest sales amount at JPY568mn (credit card brand integration; -JPY141mn YoY). Third highest was also a credit card company, at JPY378mn (fraud detection; +JPY276mn YoY). The company and DNP run a joint payment business and have been winning orders for new projects not only for credit card payments, but also smartphone payments. While the company has significantly increased sales through large-scale credit card brand integration projects, it booked large sales in FY06/18 under contract agreements for several processes (design, development, and testing), but this has peaked, and the current process (external integration) is being performed under system engineering service (SES) contracts. The project noted above for third highest sales is a fraud detection project.

DNP and credit card brand integration projects drove growth in sales through FY06/18, but these saw declines in FY06/19 as anticipated in its initial forecasts. At the same time, credit card fraud detection projects expanded, allowing the company to secure a JPY31mn YoY increase in sales for the top three companies together.

Segment overviews

Financial Systems Solutions segment

▷ In 1H FY06/19, this segment reported sales of JPY4.6bn (+13.2% YoY) and operating profit of JPY317mn (+16.9% YoY).

▷ IWI focused on consigned development in 1H FY06/18, but changed its focus to system engineering service (SES) contracts in 1H FY06/19. This put downward pressure on margins, but OPM improved 0.2pp YoY to 6.9% owing to improved earnings from cloud services. The number of contracts for cloud services grew steadily and in line with plan*[1]. Further, the company says that if the brand integration project had remained consigned development in 1H, as it was in FY06/18, the OPM in 1H FY06/19 would have risen to about 8%.

▷ The company is proceeding with development of the next-generation NET+1 gateway system (allowing easy connection not only with existing networks, but with a range of other networks, including for new payment services) and a next-generation fraud detection system*[2] (using artificial intelligence to handle expansion in transactions conducted in the absence of face-to-face contact).

▷ Sales reached 46.9% and operating profit 37.8% of the company's FY06/19 forecasts.

▷ The number of projects is increasing due to promotion of a shift to cashless transactions.

*[1] Fees from cloud services such as the acquiring business (IOASIS), credit card fraud detection ASP service (IFINDS), and OnCore Switch (IGATES) were JPY285mn (+JPY109mn YoY) during 1H FY06/19.
*[2] IWI's ACEPlus (the fraud detection product it has been providing to prevent damage from illicit credit card transactions), whenever there is a credit request from either inside or outside Japan, conducts real-time verification based on rules registered by the user. In contrast, the next-generation fraud detection system has improved processing capacity by using AI to assign a score to transactions, determining any transaction with a score beyond a predetermined threshold to be illicit. However, the system automatically produces a score for many foreign products and the detection and valid detection rates are low, so there is a risk that even proper transactions will be identified as illicit. Nevertheless, IWI has completed a trial of the next-generation system and achieved the initial target figures for detection and valid detection rates, so it plans to launch the product during 2019. As with ACEPlus, the company aims to achieve a top market share with this new fraud detection system to be used specifically for ecommerce to shorten the time required for fraud detection in non-face-to-face (online) transactions.

It offered software development and maintenance services and sold packaged software and hardware to financial industry clients, centering on credit card companies and securities companies.

System development projects related to network connectivity for credit card payment have increased, centering on existing clients, and sales derived from software development and hardware sales were up YoY. A large brand integration project for a client is progressing smoothly, and sales from software development were in line with plan. Solid performance in the software development business has also helped the company to achieve a profit increase.

Fluctuation in profit margin

In the Financial Systems Solutions segment, the order scale varies from one development project to another. Moreover, costs may come out higher than expected in each separate process of the project, and gross profit margin varies from project to project. All these factors contribute to fluctuation in profits of the segment as a whole. Furthermore, as the company sells servers and other equipment when clients order new systems or upgrade their existing systems, hardware sales vary depending on the project. Fluctuation in profits from hardware sales also contributes to fluctuation in profit margin of the entire segment.

Payment-related services from TIS to include IWI's IFINDS (fraud detection functionality)

In December 2018, TIS INTEC Group's TIS Inc. (TSE1: 3626) and IWI announced that DebitCube+ and PrepaidCube+, payment-related services offered by TIS, would be paired with IWI's fraud detection solution IFINDS.

This pairing of TIS's DebitCube+ and PrepaidCube+ with IWI's IFINDS makes it possible for the companies to offer a one-stop solution covering everything from the processing systems required when launching debit and prepaid card services to the fraud detection systems required during the operational phase after launch. Pairing the ASP services DebitCube+ and PrepaidCube+ with IFINDS allows these services to be provided at a lower price than if they were adopted individually. This cooperation can be realized via cloud infrastructure and allows IWI to reach clients it was previously unable to reach, so the partnership with TIS offers significant business opportunity to the company.

Product Solutions segment

- ▷ The segment reported sales of JPY425mn (-31.0% YoY) and an operating loss of JPY48mn (operating loss of JPY81mn in 1H FY06/18).
- ▷ Large orders for the proprietary CWAT system, which prevents internal data leaks, meant higher sales YoY, but sales of third-party software package Traps slowed as malware the Traps software could not stop made an appearance. Hardware sales also decreased significantly. The company plans to compensate for the drop in sales of Traps with a new Israeli product.
- ▷ Sales reached 30.3% of the company's FY06/19 forecast.

The company recorded sales generated from the proprietary CWAT system, which prevents internal data leaks for companies, and from selling third-party products such as Traps, a program for preventing targeted cyberattacks caused by malware.

Q1 FY06/19 results

Summary

For Q1 FY06/19, IWI reported parent sales of JPY2.3bn (+0.7% YoY), operating profit of JPY71mn (-45.1% YoY), recurring profit of JPY79mn (-38.7% YoY), and net income of JPY48mn (-42.3% YoY).

The underlying tone of the financial and credit card industries, the company's main business areas, remains unchanged from FY06/18, with steady progress on negotiations for capex projects. Sales were essentially flat YoY, but the ratio of sales from contract agreements to total sales from software development work dipped temporarily*[1]. Headcount increased temporarily due to malfunctions in cloud development*[2] and SG&A expenses increased*[3]. These factors caused double-digit YoY declines in profits. The gross profit margin slipped 1.2pp YoY to 22.5% as the SG&A ratio rose 1.3pp YoY to 19.5%, causing the operating profit margin to plummet 2.5pp YoY to 3.0%.

*[1] In card brand integration projects, the company had conducted processes including design, development, and testing under contract agreements in FY06/18. However, it is conducting the current external integration processes under system engineering service (SES) contracts. Margins on SES contracts are roughly 60–70% of those under contract agreements.
*[2] The company has resolved malfunctions.
*[3] IWI is focusing on recruitment against a backdrop of strong orders. SG&A expenses rose by JPY32mn YoY in Q1, primarily due to increases of JPY26mn in personnel expenses and JPY10mn in R&D.

Progress

Q1 sales achieved 49.7% of the 1H FY06/19 target (Q1 FY06/18 sales were 49.5% of 1H FY06/18 sales result), operating profit 22.1% (67.7%), recurring profit 23.8% (65.1%), and net income attributable to parent company shareholders 20.9% (64.4%).

Q1 sales achieved 21.8% of the full-year FY06/19 target (Q1 FY06/18 sales were 21.9% of FY06/18 sales result), operating profit 8.0% (23.5%), recurring profit 8.7% (22.4%), and net income attributable to parent company shareholders 7.8% (22.1%).

Per the company, Q1 sales were slightly above plan while profit was below plan. The profit shortfall was due to higher expenses accompanying a temporary increase in personnel to deal with malfunctions in cloud development, as well as a product mix effect. In the Financial Systems Solutions segment, IWI expects 1H sales to be above its forecast and operating profit to be below. However, it aims to make up for the shortfall in 2H through further order growth. In the Product Solutions segment, for 1H the company expects solid sales of its high-margin proprietary CWAT software packages, and operating losses may be smaller than the forecast. Based on the above, IWI aims to achieve its initial companywide operating profit forecast of JPY320mn (+68.3% YoY) in 1H FY06/19.

Trends by client (top three companies)

Sales to the top three corporate clients are as follows: Dai Nippon Printing (DNP) accounted for JPY417mn in sales (smartphone payment, payment platforms, and security products; +JPY117mn YoY), more than any other client. A credit card company accounted for the second highest sales amount at JPY311mn (credit card brand integration; -JPY337mn YoY). Third highest was also a credit card company, at JPY301mn (fraud detection; +JPY249mn YoY).

The company and DNP run a joint payment business and have been winning orders for new projects not only for credit card payments, but also smartphone payments. While the company has significantly increased sales through large-scale credit card brand integration projects, it booked large sales in FY06/18 under contract agreements for several processes (design, development, and testing), but this has peaked, and the current process (external integration) is being performed under system engineering service (SES) contracts. The project noted above for third highest sales is a fraud detection project.

Financial Systems Solutions segment

This segment reported sales of JPY2.1bn (-0.3% YoY) and operating profit of JPY105mn (-36.2% YoY). Sales reached 51.0% and operating profit 26.2% of the company's 1H FY06/19 forecasts. Sales reached 23.0% and operating profit 12.5% of the company's FY06/19 forecasts.
During Q1 FY06/18, IWI booked sales related to a large systems development project conducted under contract, but sales from this project decreased in Q1 FY06/19. Nevertheless, segment sales were essentially flat YoY as the company booked sales from development projects to update systems and add functionality for existing clients, along with hardware, software, and cloud services sales. The external environment remains favorable, with the move to cashless transactions and trend to strengthen security. The ratio of sales from comparatively profitable contract agreements dipped temporarily as the ratio of sales from large development projects to total sales from software development work declined, and the relative increase in sales from quasi-mandate agreements caused a double-digit YoY drop in profits.

It offered software development and maintenance services and sold packaged software and hardware to financial industry clients centering on credit card companies and securities companies.

Sales of core software development projects were JPY1.3bn, -11.8% YoY. The major credit card brand integration project changed from a contract agreement to a system engineering service (SES) contract. Sales dropped from JPY648mn in Q1 FY06/18

to JPY311mn in Q1 FY06/19. Still, other software development projects are showing solid growth (software development project sales excluding brand integration projects grew from JPY839mn in Q1 FY06/18 to JPY1.0bn in Q1 FY06/19.

Other sales (e.g., hardware and cloud services) were JPY829mn, up from JPY658mn (+26.0% YoY).

Sales of card-related services including major projects (credit card brand integration, IC card projects, smartphone payments, fraud detection, securities development, branded prepaid card projects, and branded debit card projects) were JPY2.0bn (+13.4% YoY). Sales were 23.5% of the company's JPY8.4bn FY06/19 forecast.

Sales of cloud services (including IOASIS [acquiring], IFINDS [fraud detection], and IGATES [OnCore Switch] were JPY126mn versus JPY106mn in Q1 FY06/18 [including JPY25mn in development charges for individual clients]). Sales were 19.4% of the company's JPY650mn full-year forecast. Service use charges (recurring revenue) alone grew from JPY81mn to JPY126mn. Cloud service clients included four companies using acquiring services (no change from end FY06/18), two using fraud detection services (increase of one), and one company using OnCore Switch (no change). In addition, during FY06/19, one more client is scheduled to start using OnCore Switch (in Q2) and another will start using fraud detection (Q4).

Sales from new projects (Next-Generation NET+1, Next-Generation Fraud Detection, IoT, and AI) were JPY45mn. The company said that the launch of packages such as Next-Generation Fraud Detection went smoothly.

Fluctuation in profit margin

In the Financial Systems Solutions segment, the order scale varies from one development project to another. Moreover, costs may come out higher than expected in each separate process of the project, and gross profit margin varies from project to project. All these factors contribute to fluctuation in profits of the segment as a whole. Furthermore, as the company sells servers and other equipment when clients order new systems or upgrade their existing systems, hardware sales vary depending on the project. Fluctuation in profits from hardware sales also contributes to fluctuation in profit margin of the entire segment.

Product Solutions segment

The segment reported sales of JPY197mn (+11.8% YoY) and an operating loss of JPY34mn (operating loss of JPY36mn in Q1 FY06/18). Sales reached 39.5% of the company's 1H forecast and 14.1% of the company's FY06/19 forecast.

IWI delivers products related to information security to clients, and provides maintenance and technical support services for these. These products are not limited to any specific clients or industries. The company recorded sales generated from the proprietary CWAT system, which prevents internal data leaks for companies, and from selling third-party products such as Traps, a program for preventing targeted cyberattacks caused by malware.

IWI posted particularly strong sales of its high-margin proprietary CWAT software. The company expects this trend to persist in Q2 onward, and flagged the possibility that the 1H operating loss will be smaller than its JPY80mn forecast. New contracts for the third-party product Traps, which accounts for a large proportion of sales, were somewhat sluggish, but other third-party projects were solid. In October 2018, IWI started sales (test marketing) of an Israeli-made security product (Morphisec) targeted at endpoints (PCs) that repels attacks themselves. Features include moving memory space to render targeted attacks ineffective.

Creating new products and services

IWI is focusing on new product development and launching new services including cloud services, Next-Generation NET+1, Next-Generation Fraud Detection, and products for broadcasters. The company said it has focused on these areas since FY06/18, and expects them to contribute to earnings in the future.

In cloud services, there are burgeoning trends in Japan, such as the move to a cashless society with mobile payments and money transfers and QR code payments, in addition to credit card payments. The company is working to provide new services along with its parent, Dai Nippon Printing. IWI has finished identifying requirements and designs for Next-Generation NET+1, and is working on manufacturing in FY06/19. As payment methods become increasingly cashless and diverse, the company aims to

deliver the world a newly constructed NET+1 that will enable a variety of network connections targeting payment operators so they can provide services cheaply and quickly.

In fraud detection, IWI aims to leverage AI and increase accuracy above that of its existing ACEPlus offering. Fraud is increasing in non-face-to-face (online) sales, but traditional fraud detection assumes face-to-face sales. Due to a lack of accumulated fraud patterns, it is difficult to detect fraud in online situations. Next-Generation Fraud Detection incorporates AI functionality to process big data and boost fraud detection rates. The service is already at the testing stage, and the company said it appears to be receiving good reviews.

Starting in December 2018, 4K and 8K broadcasts from broadcasting and 110 degree communication satellites will begin. It will be necessary to have receivers and conditional access system (CAS) chips compatible with the new standards for 4K and 8K broadcast reception. IWI plans to offer broadcasters with low-latency and high-security network connections that connect CASs of the broadcasters and the audience. The company's client targets are mainly in the finance industry, but notably this can be expanded to other industries. In addition, IWI offers online securities companies data transaction and transmission systems for smartphone apps that leverage its strengths of low latency and data protection.

Full-year FY06/18 results

Earnings overview

For FY06/18, IWI reported parent sales of JPY10.6bn (+25.2% YoY), operating profit of JPY548mn (-22.0%), recurring profit of JPY574mn (-25.1%), and net income of JPY377mn (-31.0%).

Sales achieved 109.3% of the revised full-year target announced on January 31, 2018, operating profit 114.1%, recurring profit 114.7% and net income 111.0%. All items exceeded the revised company plan. However, although sales were 117.8% of those predicted in the initial company forecast (announced on August 2, 2017), profit fell well below predictions. Operating profit was 64.4% compared to the initial company forecast while recurring profit was 65.9% and net income was 62.9%.

In FY06/18, the company achieved the sales goal of JPY10.5bn, two years earlier than the target year of FY06/20, the third year in the medium-term business plan announced by the company at the beginning of FY06/18 (on August 2, 2017). Following FY06/17, IWI reported its record high sales since listing. In addition to sales of large-scale systems development projects related to card brand integration in line with the plan, the company also increased sales in other areas, mainly from credit card company clients. However, as large-scale development projects which booked sales in Q3 became unprofitable (described in detail later in this report), IWI was unable to achieve its initially anticipated level of profit, and operating profit declined versus the previous year.

Trends by client (top three companies)

Sales to the top three corporate clients are as follows: Dai Nippon Printing (DNP) accounted for JPY2.1bn in sales (Smartphone payment, payment platforms and security products; up JPY297mn YoY), more than any other client. A credit card company accounted for the second highest sales amount at JPY1.9bn (Credit card brand integration; up JPY1.7bn YoY). Third highest was also a credit card company, at JPY647mn (Network connection; up JPY270mn YoY).

The company and DNP run a joint payment business and have been winning orders for new projects not only for credit card payments, but also smartphone payments. While the company has significantly increased sales through large-scale credit card brand integration projects, some losses have emerged during this process (this is explained in greater detail later in this report). The project noted in 3 above is a network connection project.

Financial Systems Solutions segment

This segment reported sales of JPY9.3bn (+25.3% YoY) and operating profit of JPY599mn (-8.0%). As for progress versus the revised company forecast, sales reached 109.8% and operating profit reached 127.4%.

It offered software development and maintenance services and sold packaged software and hardware to financial industry clients centering on credit card companies and securities companies.

Since FY06/17, IWI has experienced strong growth in projects related to credit card transactions, such as large-scale systems development accompanying card brand integration and work associated with updating existing systems. Systems development projects involving the diversification of settlement methods, including smartphone settlement and the use of electronic money, have also increased.

Profit in large-scale development projects decreased, as mentioned above, turning unprofitable and resulting in an operating loss of JPY182mn[*1]. Other development projects remained steady, generating profit and losses in line with the plan. As a result, overall operating profit fell 8.0% (JPY52mn) YoY in the Financial Systems Solutions segment (excluding large-scale projects that became unprofitable, overall operating profit for the segment rose 20.0% YoY).

*1: Defects were discovered in internal integration testing (consists of preceding process ITa and post-process ITb) utilized in the company's large-scale credit card brand integration projects. Therefore, the company did not record JPY980mn in sales for affected processes, resulting in an operating loss of JPY182mn. The company indicates that it has already fixed these defects. Furthermore, the company states that it would have secured profit if the total sales of affected large-scale projects for FY06/18 (JPY2.2bn) had been recorded. Intelligent Wave is currently conducting initiatives based on analyses of the main causes for this issue that will prevent future reoccurrences. The company believes that it can adequately recover in the three years starting from FY06/19.

The company launched a new business providing credit card merchant managing services (acquiring) and fraud detection capabilities in the cloud in FY06/17. Sales increased in line with the plan in FY06/18 (cloud service sales rose from JPY179mn in FY06/17 to JPY386mn in FY06/18). The company recorded a gross loss of JPY296mn for cloud services, but with business negotiations progressing smoothly, the company expects further improvement in the performance of this business in future.

In addition, the company carried out demonstration tests of its natural language processing AI technology and has generated sales from building an AI system specifically for use by nonlife insurance companies.

In the future, the company will not limit itself to developing systems for just the payment or network connections fields, but rather proactively develop systems which expand the company's realm of business, and in doing so expand its business foundation.

Fluctuation in profit margin

In the Financial Systems Solutions segment, the order scale varies from one development project to another. Moreover, costs may come out higher than expected in each separate process of the project, and gross profit margin varies from project to project. All these factors contribute to fluctuation in profits of the segment as a whole. Furthermore, as the company sells servers and other equipment when clients order new systems or upgrade their existing systems, hardware sales vary depending on the project. Fluctuation in profits from hardware sales also contributes to fluctuation in profit margin of the entire segment.

Product Solutions segment

The segment reported sales of JPY1.3bn (+24.4% YoY) and an operating loss of JPY51mn (operating profit of JP51mn in the same period the previous year).

IWI delivers products related to information security to clients, and provides maintenance and technical support services for these. These products are not limited to any specific clients or industries. The company recorded sales generated from the proprietary CWAT system, which prevents internal data leaks for companies, and from selling third-party products such as Traps, a program for preventing targeted cyberattacks caused by malware.

In FY06/18, sales showed double-digit growth year-on-year, primarily due to growth in sales of hardware for third party cybersecurity services (up JPY319mn YoY). However, with new client growth and orders from existing clients remaining

sluggish, sales of IWI's core high margin products, CWAT and Traps, fell short of expectations. Some major users adopted CWAT in FY06/17 but results for the system experienced a reactionary fall in FY06/18. Sales for Traps did not experience the same growth, with initial implementation sales hovering at JPY11mn (down JPY49mn YoY)[*2]. Software sales for Traps were JPY292mn (up JPY23mn YoY).

*2: According to Intelligent Wave, Traps is highly competitive in terms of protecting against threats such as denial-of-service attacks. On the other hand, the company also indicates that the service has some issues regarding processing functions that go into effect after attack prevention. Preparing to rally back in FY06/19, the company is consulting with seller Palo Alto Networks to determine how it can functionally enhance Traps.

As a result, the segment operating loss came to JPY51mn.

Income statement

Income statement (JPYmn)	FY06/09 Cons.	FY06/10 Cons.	FY06/11 Cons.	FY06/12 Cons.	FY06/13 Cons.	FY06/14 Cons.	FY06/15 Cons.	FY06/16 Cons.	FY06/17 Parent	FY06/18 Parent	FY06/19 Parent
Sales	**5,527**	**4,957**	**4,763**	**5,242**	**5,871**	**6,558**	**6,160**	**7,207**	**8,470**	**10,604**	**10,443**
YoY	-17.5%	-10.3%	-3.9%	10.1%	12.0%	11.7%	-6.1%	17.0%	17.5%	25.2%	-1.5%
Cost of sales	3,507	3,120	3,121	3,867	5,397	5,217	4,381	5,213	6,337	8,381	7,637
Gross profit	**2,020**	**1,837**	**1,642**	**1,374**	**473**	**1,342**	**1,779**	**1,993**	**2,132**	**2,223**	**2,807**
GPM	36.6%	37.1%	34.5%	26.2%	8.1%	20.5%	28.9%	27.7%	25.2%	21.0%	26.9%
SG&A expenses	1,792	1,479	1,321	1,243	1,151	1,196	1,295	1,279	1,430	1,675	1,885
SG&A ratio	32.4%	29.8%	27.7%	23.7%	19.6%	18.2%	21.0%	17.7%	16.9%	15.8%	18.1%
Operating profit	**229**	**358**	**321**	**132**	**-678**	**146**	**484**	**714**	**703**	**548**	**922**
YoY	-45.3%	56.6%	-10.3%	-59.0%	-	-	232.8%	47.5%	-1.6%	-22.0%	68.3%
OPM	4.1%	7.2%	6.7%	2.5%	-	2.2%	7.9%	9.9%	8.3%	5.2%	8.8%
Recurring profit	**235**	**388**	**342**	**155**	**-587**	**184**	**490**	**731**	**766**	**574**	**954**
YoY	-41.8%	64.9%	-11.8%	-54.8%	-	-	166.6%	49.0%	4.9%	-25.1%	66.2%
RPM	4.3%	7.8%	7.2%	2.9%	-	2.8%	8.0%	10.1%	9.0%	5.4%	9.1%
Extraordinary gain	148	139	37	20	67	1	297	-	-	-	0
Extraordinary loss	74	102	119	20	16	0	215	15	0	376	0
Income taxes	120	212	131	-115	-187	86	63	89	219	196	270
Net income	**188**	**212**	**129**	**270**	**-349**	**87**	**471**	**479**	**547**	**377**	**684**
YoY	-	12.6%	-38.9%	108.9%	-	-	443.2%	1.6%	14.3%	-31.0%	81.2%
Net margin	3.4%	4.3%	2.7%	5.2%	-	1.3%	7.6%	6.6%	6.5%	3.6%	6.5%

Source: Shared Research based on company data
Note: Figures may differ from company materials due to differences in rounding methods.

Sales have been volatile. Sales are affected by orders from credit card companies and securities brokers, and hardware sales trends. For this reason, IWI is working on expanding target industries and broadening its security-related product offerings. Since June 2012, the company has continuously recorded year-on-year sales increases, with the exception of FY06/15 and FY06/19. Company sales are on an upward trend due to increasing new investment proposals and system updates in the credit card industry, the company's main business area. In FY06/18, the company reported record-high sales of JPY10.6bn.

In terms of profit and loss, projects will occasionally become unprofitable due to defects that occur in development processes. Profit plunged in FY06/13 as a result of unprofitable projects, and the effects of these unprofitable projects remained until Q1 FY06/14. Gross profit margin has been in decline, falling from its highest point in the past 15 years of 41.2% in FY06/06 to 8.1% in FY06/13 (recording an operating loss). However, the company has maintained rigorous project management and gross profit margins of 20% or more since FY06/14. However, gross profit margin fell 4.2 pp YoY in FY06/18 as large-scale projects became unprofitable due to defects that occurred in internal integration testing. FY06/19 operating profit of JPY922mn was highest operating profit in the last ten years (the record high has been JPY1.9bn logged in FY06/02).

The company recognized noteworthy extraordinary losses three times from FY06/01 through FY06/19: in FY06/07, FY06/08 and FY06/15. The FY06/07 expense was JPY466mn, mostly due to software amortization (JPY146mn), litigation costs (JPY114mn), and a valuation allowance related to investments (JPY156mn). The FY06/08 expense was JPY398mn, mostly due to impairment losses (JPY145mn) and software amortization (JPY137mn). In FY06/15, IWI booked an extraordinary loss of JPY208mn on retirement benefit expenses, as it has changed its method of calculating retirement benefit liabilities from the simplified method to the principle method.

Balance sheet

Balance sheet (JPYmn)	FY06/09 Cons.	FY06/10 Cons.	FY06/11 Cons.	FY06/12 Cons.	FY06/13 Cons.	FY06/14 Cons.	FY06/15 Cons.	FY06/16 Cons.	FY06/17 Parent	FY06/18 Parent	FY06/19 Parent
Assets											
Cash and cash equivalents	1,686	2,090	2,783	2,808	2,085	2,420	2,957	2,852	2,578	2,840	3,255
Accounts receivable	894	1,098	826	814	689	660	881	1,292	982	1,093	1,456
Allowance for doubtful accounts	-10	-12	-1	-1	0	0	0	0	0	0	0
Inventories	209	133	122	480	577	251	133	264	828	547	641
Other	348	142	93	234	209	193	589	273	596	555	703
Total current assets	**3,127**	**3,450**	**3,822**	**4,335**	**3,560**	**3,524**	**4,560**	**4,682**	**4,985**	**5,034**	**6,054**
Tangible fixed assets											
Buildings and structures	237	220	223	168	161	158	151	168	175	214	211
Tools, furniture, and fixtures	44	59	41	31	24	20	17	25	67	121	177
Lease assets	-	-	0	44	37	27	25	124	93	101	68.3
Land	124	124	124	84	84	84	84	84	84	84	84
Total tangible fixed assets	**405**	**403**	**388**	**327**	**307**	**290**	**277**	**401**	**420**	**520**	**541**
Investments and other assets	**1,323**	**1,470**	**1,375**	**1,495**	**1,573**	**1,459**	**1,359**	**1,388**	**1,682**	**1,768**	**2,096**
Intangible fixed assets											
Software	150	112	108	198	279	353	273	262	1,011	1,098	189
Other	7	17	24	8	36	14	12	295	410	417	1,152
Total intangible assets	**157**	**128**	**132**	**206**	**315**	**367**	**285**	**557**	**1,421**	**1,515**	**1,341**
Total fixed assets	**1,885**	**2,002**	**1,895**	**2,028**	**2,195**	**2,116**	**1,921**	**2,345**	**3,523**	**3,803**	**3,978**
Total assets	**5,012**	**5,451**	**5,717**	**6,363**	**5,755**	**5,640**	**6,482**	**7,027**	**8,508**	**8,837**	**10,032**
Liabilities											
Accounts payable	290	104	249	617	377	192	321	363	553	543	332
Short-term debt	-	-	0	9	10	10	12	34	28	36	35.0
Other	407	484	516	521	620	679	817	975	1,671	1,944	2,691
Total current liabilities	**697**	**587**	**765**	**1,147**	**1,007**	**881**	**1,150**	**1,373**	**2,252**	**2,523**	**3,058**
Long-term debt	-	-	0	35	29	18	17	102	74	74	39.3
Other	198	221	246	261	272	289	481	490	535	525	562
Total long-term liabilities	**198**	**221**	**246**	**296**	**301**	**307**	**497**	**591**	**609**	**599**	**601**
Total interest-bearing debt	-	-	**0**	**44**	**39**	**28**	**29**	**136**	**102**	**110**	74.3
Total liabilities	**895**	**808**	**1,011**	**1,443**	**1,308**	**1,188**	**1,647**	**1,964**	**2,861**	**3,122**	**3,660**
Net assets (shareholders' equity)											
Capital stock	844	844	844	844	844	844	844	844	844	844	844
Capital surplus	569	560	560	560	560	560	560	560	560	561	561
Retained earnings	4,000	3,251	3,248	3,346	2,865	2,820	3,160	3,507	3,825	4,018	4,518
Total net assets	**4,117**	**4,643**	**4,706**	**4,920**	**4,447**	**4,451**	**4,835**	**5,063**	**5,648**	**5,715**	**6,373**
Working capital	804	1,126	698	677	889	719	693	1,193	1,257	1,096	1,764
Total interest-bearing debt	-	-	0	44	39	28	29	136	102	110	74.3
Net debt	-1,686	-2,090	-2,783	-2,764	-2,046	-2,392	-2,928	-2,716	-2,477	-2,730	-3,181

Source: Shared Research based on company data
Note: Figures may differ from company materials due to differences in rounding methods.

Assets

The company's asset base has been defined by a greater portion of current than fixed assets, not unusual for an IT company. The company's current assets have effectively been cash and cash equivalents, and accounts receivable.

Liabilities

The company has been debt free since FY06/06 but has used debt financing in the past. Since FY06/12, interest-bearing debt (both short and long term) reflects lease obligations. The company's liabilities are mostly accounts payable and advances received.

Shareholders' equity

There have been no significant changes in shareholders' equity related to impairment or other charges. Retained earnings has been steadily accumulating since FY06/15.

Cash flow statement

Cash flow statement (JPYmn)	FY06/09 Cons.	FY06/10 Cons.	FY06/11 Cons.	FY06/12 Cons.	FY06/13 Cons.	FY06/14 Cons.	FY06/15 Cons.	FY06/16 Cons.	FY06/17 Parent	FY06/18 Parent	FY06/19 Parent
Cash flows from operating activities (1)	432	301	795	252	-588	620	839	124	1,172	1,213	1,237
Cash flows from investing activities (2)	-107	-200	-61	-25	3	-47	-263	-192	-1,151	-604	-602
Free cash flow (1+2)	**325**	**101**	**734**	**227**	**-585**	**573**	**576**	**-68**	**21**	**610**	**635**
Cash flows from financing activities	-123	310	-132	-138	-142	-143	-143	-34	-198	-349	-220
Depreciation and amortization (A)	100	142	149	107	131	190	256	214	337	485	708
Capital expenditures (B)	-101	-120	-117	-93	-207	-233	-151	-512	-1,253	-624	-504
Working capital changes (C)	-321	125	-272	302	-22	-345	103	435	289	-179	492
Simple FCF (NI + A + B - C)	**508**	**109**	**433**	**-19**	**-404**	**389**	**473**	**-254**	**-657**	**417**	**395**

Source: Shared Research based on company data
Note: Figures may differ from company materials due to differences in rounding methods.

Cash flows from operating activities

Excluding FY06/13 outflow resulting from unprofitable projects, IWI's cash flows from operating activities are continuing to maintain stable inflow.

Cash flows from investing activities

The company's cash flows from investing activities mainly consist of investment securities and the acquisition of intangible fixed assets. IWI received dividends of JPY213mn from an investment partnership in FY06/10 while it acquired investment securities for JPY300mn, and made a time deposit of JPY100mn. Most of the cash flow since FY06/11 has been related to the acquisition of intangible fixed assets. However, the company sold investment securities and earned JPY368mn in FY06/13, resulting in a surplus of JPY3mn. The company acquired intangible fixed assets of JPY215mn in FY03/14. This was offset by a JPY200mn withdrawal from a time deposit. In FY06/15, the company had expenditures of JPY141mn for the acquisition of intangible fixed assets, and JPY202mn for the acquisition of investment securities, resulting in expenditures of JPY262mn. In FY06/16, while the company booked JPY380mn on the sale of investment securities, it had cash outflows of JPY192mn because of the acquisition of tangible and intangible assets. In FY06/17 and FY06/18, there were respective outflows of JPY1.2bn and JPY604mn, primarily for the acquisition of intangible fixed assets. The net cash outflow of JPY602mn reported for FY06/29 stemmed primarily from acquisitions of intangible fixed assets and investment securities (which was partly offset by cash inflow from the redemption of investment securities).

Cash flows from financing activities

For the past five years, most of the cash flows from financing activities have been related to dividend payments. The company also sold JPY433mn in treasury shares in FY06/10 and booked JPY114mn from a sale and leaseback arrangement in FY06/16.

News and topics

March 2019

On **March 20, 2019**, the company announced it had received approval to transfer to the Tokyo Stock Exchange (TSE) First Section.

On March 20, 2019, the company received approval from Tokyo Stock Exchange, Inc. to transfer its shares from the TSE Second Section to the TSE First Section, effective March 27, 2019.

Other information

History

Chairman Kazuhiko Adachi established Intelligent Wave in 1984. The company was created to meet the needs of Japan's modernizing credit card companies (NTT Data created the country's first online credit card network in the same year, prior to which authorizations were done by phone and transactions were recorded on paper). Adachi found his experience with fault-tolerant systems at Tandem Computer could be profitably used to fill the emerging demand for front-end networks.

Demand for increased connectivity led to the creation of the company's core product, NET+1. During an upgrade project for UC Card in the late 1980s, IWI realized that more than half of the custom-made systems needed to be rewritten to make necessary changes. The company saw a need for a package solution that would provide interconnectivity with different systems for transaction processing and developed the NET+1 package in 1989.

Since the latter half of the 1980s, issuers gradually began issuing dual-brand credit cards under international brands (both Visa and MasterCard credit cards) in the Japanese credit card industry. This spurred demand for credit card companies to connect to international brand networks, increasing orders and thus business for the company.

The next major industry realignment occurred from the early 1990s into 2000s when a wave of consolidation among banks following the economic bubble collapse reshaped the financial industry. The increase in integration demand due to this industry realignment spurred on growth for IWI's business. While such integration demand has currently subsided, the need to invest in new systems that can handle increasingly diverse payment methods has started to increase.

The company listed on the JASDAQ stock exchange in June 2001. In April 2010, IWI became a subsidiary of Dai Nippon Printing Co., Ltd. following the completion of a public tender offer for IWI shares by Dai Nippon Printing. Since then, the two companies have worked to strengthen their business relations and grow the business. In June 2018, IWI moved its listing to the Second Section of the Tokyo Stock Exchange, and in March 2019, to the First Section of the said Exchange.

Top management

CEO and representative director Tsukasa Iseki (born 1955) joined Dai Nippon Printing Co., Ltd. in 1978, working in the IPS and information solution business departments, and became director of IWI in September 2013. Iseki became the company's executive vice president in September 2014, and its CEO and representative director in September 2015.

Employees

The parent company employed 397 employees (339 employees in FY06/17) as of FY06/18:

- ▷ Average age: 37.6 (38.6 in FY06/17)
- ▷ Average length of employment with the company: 9.6 years (10.5 years in FY06/17)
- ▷ Not unionized

Major shareholders

Top shareholders (as of June 30, 2018)	Shareholding ratio
Dai Nippon Printing Co., Ltd.	50.66%
Kazuhiko Adachi	9.67%
Japan Trustee Services Bank, Ltd. (Trust account)	2.42%
Intelligent Wave Employee Shareholding Association	1.64%
Motoichi Mizota	1.14%
Trust & Custody Services Bank, Ltd. (Trust account)	1.09%
Hideki Nishino	0.79%
MUFG Bank, Ltd.	0.76%
Shinsei Bank, Limited	0.75%
Koji Kobayashi	0.73%

Source: Shared Research based on company data
Note: Shareholding ratio based on shares outstanding (excluding treasury shares)

Dividends and shareholder benefits

The company has paid annual dividends and focuses on maintaining a stable dividend amount (as opposed to a ratio of earnings). The dividend was increased (doubled) to JPY500.0 per share for FY06/06. This dividend amount has been maintained as of FY06/14. The company executed a 100-for-1 stock split on January 1, 2014, and the dividend payout for FY06/14 was JPY5.0 per share. Reflecting strong results, the company raised the annual dividend per share to JPY6.0 in FY06/16, and further to JPY7.0 in FY06/17 (representing a dividend payout ratio of 33.7%). FY06/18 dividends were JPY7.0 per share (dividend payout ratio of 48.8%). In FY06/19 the company raised its dividend to JPY9.0 per share (dividend payout ratio of 34.6%), including a special dividend of JPY1.0 per share to commemorate its listing on the First Section of the Tokyo Stock Exchange. In FY06/20, the company plans to pay a dividend of JPY9.0 per share (representing a dividend payout ratio of 32.9%).

Investor relations

The company maintains an IR website with both English and Japanese information available (http://www.iwi.co.jp/en/ir/index.htm). The company holds quarterly results presentation meetings.

Company profile

Company Name	Head Office
INTELLIGENT WAVE INC.	Kayabacho Tower 1-21-2 Shinkawa Chuo-ku Tokyo, Japan 104-0033
Phone	**Listed On**
+81-3-6222-7111	Tokyo Stock Exchange 1st Section
Established	**Exchange Listing**
December 27, 1984	June 15, 2001
Website	**Financial Year-End**
http://www.iwi.co.jp/en/	June
IR Contact	**IR Web**
Business Planning Department Business Administration Division	http://www.iwi.co.jp/en/ir/
IR Mail	**IR Phone**
ir_info@iwi.co.jp	+81-3-6222-7015

We offer corporate clients comprehensive report coverage, a service that allows them to better inform investors and other stakeholders by presenting a continuously updated third-party view of business fundamentals, independent of investment biases. Shared Research can be found on the web at http://www.sharedresearch.jp.

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Earth Corporation
Elecom Co., Ltd.
en-Japan Inc.
euglena Co., Ltd.
Evolable Asia Corp.
FaithNetwork Co., Ltd.
Ferrotec Holdings Corporation
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Financial Products Group Co., Ltd.
FreeBit Co., Ltd.
FRONTEO, Inc.
Fujita Kanko Inc.
Gamecard-Joyco Holdings, Inc.
GameWith, Inc.
GCA Corporation
Good Com Asset Co., Ltd.
Grandy House Corporation
Hakuto Co., Ltd.
Hamee Corp.
Happinet Corporation
Harmonic Drive Systems Inc.
HOUSEDO Co., Ltd.
IDOM Inc.
IGNIS LTD.
i-mobile Co.,Ltd.
Inabata & Co., Ltd.
Infocom Corporation
Infomart Corporation
Intelligent Wave, Inc.
ipet Insurance CO., Ltd.
istyle Inc.
Itochu Enex Co., Ltd.
JSB Co., Ltd.
JTEC Corporation
J Trust Co., Ltd
Japan Best Rescue System Co., Ltd.
JINS HOLDINGS Inc.
JP-HOLDINGS, INC.
KAMEDA SEIKA CO., LTD.
Kanamic Network Co.,LTD
Kenedix, Inc.
KFC Holdings Japan, Ltd.
KI-Star Real Estate Co., Ltd.
Kondotec Inc.
Kumiai Chemical Industry Co., Ltd.
Lasertec Corporation
LUCKLAND CO., LTD.
MATSUI SECURITIES CO., LTD.
Medical System Network Co., Ltd.
MEDINET Co., Ltd.
MedPeer,Inc.
Mercuria Investment Co., Ltd.
Micronics Japan Co., Ltd.
Milbon Co., Ltd.
MIRAIT Holdings Corporation
Monex Goup Inc.
MORINAGA MILK INDUSTRY CO., LTD.
NAGASE & CO., LTD
NAIGAI TRANS LINE LTD.
NanoCarrier Co., Ltd.
Net One Systems Co.,Ltd.
Nichi-Iko Pharmaceutical Co., Ltd.
Nihon Denkei Co., Ltd.
Nippon Koei Co., Ltd.
NIPPON PARKING DEVELOPMENT Co., Ltd.
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ONWARD HOLDINGS CO.,LTD.
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PIGEON CORPORATION
QB Net Holdings Co., Ltd.
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Sanrio Company, Ltd.
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SHIP HEALTHCARE HOLDINGS, INC.
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Snow Peak, Inc.
Solasia Pharma K.K.
SOURCENEXT Corporation
Star Mica Holdings Co., Ltd.
Strike Co., Ltd.
SymBio Pharmaceuticals Limited
Synchro Food Co., Ltd.
TAIYO HOLDINGS CO., LTD.
Takashimaya Company, Limited
Take and Give Needs Co., Ltd.
Takihyo Co., Ltd.
TEAR Corporation
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3-D Matrix, Ltd.
TKC Corporation
TKP Corporation
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TOYOBO CO., LTD.
Toyo Ink SC Holdings Co., Ltd
Toyo Tanso Co., Ltd.
Tri-Stage Inc.
VISION INC.
VISIONARY HOLDINGS CO., LTD.
WirelessGate, Inc.
YELLOW HAT LTD.
YOSHINOYA HOLDINGS CO., LTD.
YUMESHIN HOLDINGS CO., LTD.
Yume no Machi Souzou Iinkai Co., Ltd.
Yushiro Chemical Industry Co., Ltd.
ZAPPALLAS, INC.

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