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EARNINGS QUALITY & DIVIDEND SUSTAINABILITY RESEARCH

BTN Research

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Cognex (CGNX) EQ Review

Current EQ Rating*	Previous EQ Rating
5-	na

6- "Exceptionally Strong"
5- "Strong"
4- "Acceptable"
3- "Minor Concern"
2- "Weak"
1- "Strong Concerns"

Note that a "+" sign indicates the earnings quality improved in the most recent quarter while a "–" sign indicates deterioration

*For an explanation of the EQ Review Rating scale, please refer to the end of this report

We initiate earnings quality coverage of CGNX with a 5- (Strong) rating

CGNX beat forecasts in the last few quarters. COVID slowed the sales growth in some key markets and led Cognex to undertake a quick and simple restructuring to eliminate 8% of the workforce during the slowdown. We respect a company that doesn't try to spin results and instead puts out an earnings release announcing their "Less-than-Fabulous" results in the headline and one that touts GAAP EPS. We are impressed with the balance sheet having no debt and over $5/share in cash/investments. There are a few items that amount to a penny or two of EPS. None of them looks aggressive to us. The key when looking at CGNX is $2 million of pretax income is worth 1-cent in EPS. Most of what we found as benefits or potential headwinds are unlikely to amount to more than 1-cent.

Items that Deteriorated

- Inventory write-off of 4-cents in 2Q on top of its allowance of 10% of inventory. CGNX admits inventory obsolescence is a key risk. The allowance is normally a +/- 1-cent item.

- Capital spending often lags depreciation for a tech company. CGNX lengthened the depreciation lives for equipment in 2018. The annual EPS impact appears less than 1-cent. Net PP&E is declining. We expect more spending in this area going forward.

- The first large impairment of intangibles of 9-cents happened in 2Q. It focused on lower than forecast cash flows for the Sualab deal – yet no charge hit against the much larger goodwill balance using a similar test. There may be another charge if sales growth does not recover quickly.

- The impairment will produce 1-cent in annual EPS going forward through lower amortization.

Items that Look Good

- The company touts GAAP results for most periods. Adjusted results are normally 1-cent lower per quarter by excluding tax benefits from stock options.

- R&D spending has not dropped with COVID – the sequential decline in 2Q was largely due to lower stock compensation in that expense item.

- Rising deferred revenue should translate to rising sales in the near future.

- Acquired intangibles have amortization lives close to depreciation lives for PP&E.

- CGNX held A/R essentially flat in dollar terms and DSOs remain near normal levels despite the recent sales decline and COVID.

Items to Monitor

- DSOs rising above 60 would be a red flag for us, we would prefer to see them closer to 55 days.

- Inventory has a 5%-10% allowance that rises or falls inversely with sales growth – CGNX could pick up 1-2 cents from the allowance declining and perhaps selling some of the inventory written off in 2Q if sales growth bounces back

- CGNX maintains a high inventory level by design to avoid out of stocks and deal with longer delivery times. Historically, it has been able to handle this and gross margin has held at 73%-75%. A 1% change in gross margin is worth just under 1-cent in quarterly EPS. The high DSIs are going to flag on a computer screen.

- CGNX took its first restructuring charge in 2Q of 7-cents. Slower sales caused it to eliminate duplication in cost and the bulk of the charge is to reduce headcount by 8%. After multiple acquisitions, we will give a pass on this one as it is small and the company is not promising wild amounts of synergy, only that wages should decline.

The Balance Sheet Has No Leverage and Lots of Liquidity

The first thing that jumps out is how liquid the balance sheet is for CGNX. The company has no financed debt and considerable cash. Cash and investments are $896 million or over $5/share. Even payables are a fraction of inventories at basically 30%.

DSOs on receivables can move around a bit on large orders or COVID lowering sales. But in dollar terms, they have remained consistent at just over $100 million and about 55 days:

	2Q20	1Q20	4Q19	3Q19
Accounts Rec.	$112	$101	$103	$107
DSOs	60.3	54.9	55.6	53.5

	2Q19	1Q19	4Q18	3Q18
Accounts Rec.	$108	$106	$119	$135
DSOs	49.3	56.0	56.3	53.1

	2Q18	1Q18	4Q17	3Q17
Accounts Rec.	$136	$97	$119	$122
DSOs	58.8	52.0	59.5	41.9

We also like that working capital is not a primary driver of cash from operations. The company covers both capital spending and acquisitions with operating cash flow and still has a considerable cushion on the dividend. In most years, CGNX has considerable proceeds from shares issued as stock compensation and it essentially buys back stock to cover that amount. They still often issue more shares than they repurchase, but the cash flow is there along with the cash cushion:

	1H20	2019	2018	2017	2016	2015
Cash from Ops	$79	$253	$224	$224	$182	$128
Capital Spend	$7	$22	$37	$29	$13	$18
Acquisitions	$0	$167	$5	$26	$15	$12
Free Cash Flow	$72	$65	$181	$170	$155	$99
Dividends	$19	$35	$32	$29	$25	$18
Stock Issued - Repo	-$3	$3	-$177	-$69	-$4	-$99

- The large acquisition in 2019 does not happen often
- Even in COVID hurting sales and cash flow, the cash is still building

Income Statement Has Been Clean Except 2Q20

One thing we like is CGNX prefers to work with GAAP EPS. The CFO even noted on the last call – *"As you know, Cognex is known for being straightforward.* ***We typically discuss our results almost exclusively on a GAAP basis****, but we believe some pro forma disclosures will be helpful this quarter, given the actions we took in Q2."*

Most of the time the only difference between GAAP and adjusted EPS is a tax issue which we will discuss below. Many quarters, the difference between GAAP and adjusted EPS is 1-cent. That already speaks well of the company's reporting.

	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19
GAAP EPS	-$0.01	$0.12	$0.46	$0.24	$0.28	$0.19
Adjusted EPS	$0.18	$0.11	$0.11	$0.23	$0.27	$0.17

Stock option tax benefits are for the most part 1-cent per quarter for EPS. CGNX subtracts that small benefit for adjusted EPS:

	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19
S.O. Tax Benefit	$0	$1,680	$1,925	$569	$1,248	$2,730

There are two quarters where there is more at work – 2Q20 and 4Q19 and we will discuss this more fully below. In 2Q20, amid COVID slowing sales – CGNX took a charge to write off inventory for 4-cents, a charge to right-size its workforce for 7-cents, and recognized an impairment of acquired intangible assets for 9-cents.

In 4Q19, CGNX recognized 35-cents in EPS to change its tax structure and to migrate intangible assets acquired to foreign subsidiaries to reduce tax implications.

We like that Cognex continues to invest in R&D despite the recent sales slowdown which is making R&D a higher percentage of sales and a drag on recent EPS:

	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19
R&D	$30	$36	$33	$28	$28	$30
R&D % Sales	18%	22%	19%	15%	14%	17%

- 2Q20's R&D fell $3 million from 1Q20 due to lower stock option expense

Also, the company books unbilled receivables as revenue based on completing work on a contract. It also sees deferred revenue rise as it collects deposits and prepayments ahead of booking the sales. Looking at recent trends with COVID, the unbilled receivables are almost fully collected at this point. The deferred revenue shows a surge of sales that should be recognized in 3Q and 4Q:

	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19
Unbilled A/R	$1	$6	$5	$11	$10	$10
Deferred Rev.	$47	$26	$14	$10	$18	$17

Inventory Issues Would Generate Red Flags – But Look Benign and Make Sense to Us

Cognex has seen some wild swings in inventory levels in both dollar terms and DSIs. Some of this would be setting off red-flags on fears for write-offs and gross margin pressure. A great deal of the inventory movement was intentionally planned.

	2Q20*	1Q20	4Q19	3Q19
Inventory	$53.0	$55.0	$60.3	$65.3
DSIs	96.2	121.8	122.6	125.2
Gross Margin	70%	75%	74%	74%

	2Q19	1Q19	4Q18	3Q18
Inventory	$72.9	$79.2	$83.3	$94.0
DSIs	130.4	156.1	144.0	145.6
Gross Margin	74%	73%	73%	75%

	2Q18	1Q18	4Q17	3Q17
Inventory	$89.6	$96.4	$67.9	$48.1
DSIs	150.9	218.8	139.2	64.5
Gross Margin	74%	76%	76%	74%

- 2Q20 reflects results AFTER a $7.1 million inventory write-off. Before that charge inventory would have been $60.1 million and DSIs at 130.0. Gross margin would have been 75%. **This charge cost EPS 4-cents in 2Q20.**

- The 2017 figures are adjusted for ASC 606 accounting change.

Cognex recognizes that inventory can become obsolete. It has carried a rising allowance against inventory as the balance grew:

	2019	2018	2017	2016	2015
Inventory Allowance	$7.1	$4.7	$5.0	$3.3	$3.8
Ending Inventory	$60.3	$83.3	$67.9	$27.0	$37.3
Allowance %	10%	5%	7%	11%	9%

It took a charge of $1.1 million in 1Q20 and a $7.7 million charge in 2Q20. The company's view is that there has been some balancing between having inventory on hand to support growth, having inventory on hand to reduce out-of-stocks, and having business slow with COVID. The company thought it was planning for growth in 2020 and then had the business slow down.

From the 2Q20 10-Q:

> *"The charges for the three-month period ended June 28, 2020 were due to lower projected sales of excess inventories as a result of deteriorating global economic conditions from the COVID-19 pandemic."*

On the earnings call, the company pointed to Europe being worse than other regions and automobile production being down $25 million y/y as reasons they thought the value of the excess inventories would deteriorate before they were sold.

We think their accounting in this area has been conservative – the company has generally had a 10% reserve against inventories for obsolescence except in 2018. The drop to a 5% allowance added 1-cent to EPS in 2018. The bump to 10% cut EPS by 2-cents in 2019. Against GAAP EPS of $1.27 and $1.19 – that is fairly modest for such a large change in allowance assumptions in our view.

Regarding the 2Q20 4-cent charge, there is some possibility that Cognex realizes some EPS gain in the future if some of this inventory is sold at a normal price. Here is the company policy:

> *"The Company generally disposes of obsolete inventory upon determination of obsolescence.* ***The Company does not dispose of excess inventory immediately, due to the possibility that some of this inventory could be sold to customers as a result of differences between actual and forecasted demand.*** *When inventory has been written down below cost, such reduced amount is considered the new cost basis for subsequent accounting purposes. As a result, the Company would recognize a higher than normal gross margin if the reserved inventory were subsequently sold."*

Normally, the company is very good at pointing out both good and bad reasons for earnings. We doubt that something being written down would still be sold for the prior price level, but it is possible that Cognex picks up 1-2 cents in EPS going forward of some of the $7.7 million inventory charge is recovered via future sales.

We also want to mention the big increase in inventory in 2017 and 2018. This was by design. Cognex was updating its own inventory system and rolling out new products. It wanted to ensure that customers did not suffer or lose sales from lack of supply:

> *"In 2017, inventories increased significantly from $26,984,000 as of December 31, 2016 to $67,923,000 as of December 31, 2017.* ***While a portion of this increase was to support the higher business level, we also made strategic purchases to build safety***

stock in advance of the Company's Enterprise Resource Planning (ERP) system implementation planned for 2018 and to mitigate our exposure to significant increases in demand similar to what we experienced in 2017. *These measures to purchase inventory may expose us to an increased risk of excess or obsolete inventory and resulting charges if actual demand is lower than anticipated. Our failure to effectively manage product transitions or accurately forecast customer demand, in terms of both volume and configuration, has led to, and may again in the future lead to, an increased risk of excess or obsolete inventory and resulting charges."*

Our conclusions on inventory are:

- **The DSIs are falling again from the intentional build-up. However, we expect them to remain over 100 days.**

- Historically, the adjustments to EPS have been very minor (it took COVID to create a charge of 4-cents).

- The company is trying to fill orders around the world – which probably means a higher inventory level is needed just for that to handle longer delivery times at the moment.

- Cognex distributes via its own sales force, through global distributors, and with other installation companies that may use Cognex components when they build out larger systems.

- **The company has experience carrying higher levels of inventory and it is part of the business model. Gross margin has held in the 74%-76% range for some time despite big swings in inventory levels. A 1% change in gross margin is worth 0.8-1.0 cents in EPS per quarter.**

- **There is an inherent risk of obsolescence. The tip-off for a problem appears to be a period of slow sales growth to declining sales.**

	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19
Y/Y Sales Chg.	-15%	-4%	-12%	-8%	-6%	2%
Sequential Chg.	1%	-1%	-7%	-8%	15%	-10%
Reasons	COVID delays	Auto/Ind	CE/Auto	CE/Auto	CE/Auto	China/Auto

- CE is Consumer Electronics, Ind is Industrial sales

In periods of weak sales, the allowance for obsolescence rises. It rose from $4.7 million to $7.1 million during 2019 and then an additional $1.1 million in 1Q20 and $7.7 million in 2Q20. For the most part, we see this risk as 1-2 cents in EPS for a given quarter.

Depreciation and Capital Spending – Capital Spending May Need to Increase

We have two minor points in this area. The first is for a tech company that sees some rapid changes to its product line to the point that it has a high allowance for obsolescence on its inventory – is it spending enough on capital expenditures for new equipment?

	1H20	2019	2018	2017	2016	2015
Depreciation	$11.2	$21.5	$18.5	$13.7	$11.7	$9.9
Capital Spending	$7.0	$21.7	$37.1	$28.8	$12.8	$10.2
Net PP&E	$83.9	$89.4	$91.4	$78.0	$54.0	$53.3

Net PP&E has been going down for almost two years. Capital spending has only exceeded depreciation in 2017 and 2018. It would seem that much of the PP&E would represent equipment still being used that is fully depreciated as basically $24 million of gross PP&E is buildings being depreciated over 39-years and another $50 million is building improvements being depreciated over 10-years.

To the extent Cognex needs to add to capital spending going forward – it has the liquidity to handle that. It is possible that depreciation could start to grow faster if capital spending levels rise.

Our second minor issue is in 2018 Cognex lengthened the depreciation period for hardware, software, and manufacturing equipment from 2-5 years to 2-10 years. Looking at the bigger picture, we are not seeing evidence that this had a material impact on reducing depreciation and helping EPS. If we divide current year's depreciation by last year's net PP&E it has stayed about 24-25%:

	1H20	2019	2018	2017	2016	2015
Depreciation	$11.2	$21.5	$18.5	$13.7	$11.7	$9.9
Net PP&E	$83.9	$89.4	$91.4	$78.0	$54.0	$53.3
Depreciation %	25.1%	23.5%	23.7%	25.4%	22.0%	

Even with the 1.7%-1.9% drop in 2019 and 2018 after the depreciation schedule was lengthened, it only amounts to 0.6-cents in EPS.

Acquisition Accounting and Restructuring – One-Time Events are Small, Goodwill Impairment May Be a Risk

Cognex views acquisitions as a way to add new products and new engineers. Most of its deals are fairly small. These would definitely fall into the category of tuck-in acquisitions. As noted earlier, cash flow and liquidity are more than ample to cover this method of growth.

	Sualab	Gvi	ViDi	Webscan	Chiaro	Enshape	AQ	Manatee
Acquired Tech	$26.5	$0.9	$4.8	$0.8	$1.4	$1.1	$0.4	$0.6
Customer Relations	$5.8	$2.6	$0.0	$0.7	$0.0	$0.4	$0.6	$0.1
Goodwill	$130.1	$1.5	$18.3	$0.9	$2.9	$6.7	$1.4	$4.1
Purchase Price	$170.6	$5.4	$23.0	$3.2	$4.1	$7.9	$2.5	$4.8

We do have a problem with so much of the purchase price going to goodwill and not being expensed. It would be difficult to say that the company could not have built some or all of these businesses in-house if it wanted to. Those costs would have been largely expensed as incurred. The inventory charge of $7.7 million in 2Q was a 4-cent hit to EPS. All but two of these recent deals had a purchase price essentially the same as that charge or smaller. So fully expensing many of these deals or assigning a lower percentage to goodwill – it's probably under 1-cent per year. Thus, we will not push too hard on this for the sake of materiality.

We cannot argue with the time frame for expensing the acquired assets subject to amortization. It is actually very close to the depreciation schedule for hardware, software, and manufacturing equipment:

Depreciation/Amortization	In years
Hardware/Software	2-10 years
Manufacturing Eq.	2-10 years
Intang. Customer Rel.	5-8 years
Intang. Completed Tech	5-8 years
Intang. Distribution Network	11-12 years

The recent restructuring does raise a couple of questions. In 2Q20, Cognex took a $19.6 million write-off of intangible assets that focused heavily on the Sualab deal. Only $0.2 million related to Enshape was also marked down. This was 9-cents of EPS in total.

Restructuring Charge	$ amount
SL Completed Tech	$10.1
SL In-process Tech	$5.9
SL Customer Relations	$3.6
Total	$19.6

The rationale behind write-off was:

> *"In step one, known as the recoverability test,* ***the carrying value of the asset is compared to the sum of the undiscounted cash flows expected to result from the use*** *and eventual disposition of the asset. If the sum of the undiscounted future cash flows is less than the carrying value, the asset is not recoverable and step two is performed. In step two, the impairment charge is measured as the amount by which the carrying value of the asset exceeds its fair value.*
>
> *This review resulted in intangible asset impairment charges totaling $19,571,000 for the three-month period ended June 28, 2020,* ***primarily related to lower projected cash flows from the technologies and customer relationships acquired from Sualab Co. Ltd. ("Sualab")*** *as a result of the deteriorating global economic conditions from the COVID-19 pandemic."*

That makes sense to us – projected cash flows are lower and therefore the asset values supported by those lower cash flows are too high and are impaired.

The next question is how can the goodwill not be impaired? According to management, the goodwill was also tested against projected financials and found no impairment:

> *"The significant decline in business levels resulting from the COVID-19 pandemic triggered a review of long-lived assets, including goodwill, for potential impairment during the three-month period ended June 28, 2020.* ***Based upon this assessment, management concluded that the reporting unit fair value was not less than its carrying value, and therefore no goodwill impairment charge was recognized*** *for the three-month and six-month periods ended June 28, 2020.* ***Factors that management considered in this assessment included macroeconomic conditions, industry and market conditions, overall financial performance (both current and projected),*** *changes in management or strategy, changes in the composition or carrying value of net assets, and market capitalization."*

How does a $170 million deal assign $130 million of that price to goodwill and later result a $19.4 million write-off to the value of the intangibles based on projected future weakness in cash flows – but it doesn't impact goodwill at all?

Cognex will gain about $2 million in earnings going forward (about $1.6 million after taxes) from the lower amortization. This is about 1-cent in EPS benefit:

Projected Amortization	2Q20	4Q19
2021	$3.3	$5.2
2022	$2.9	$4.9

During 2Q20, Cognex announced its first restructuring at the same time it recognized the impairment to inventory and intangibles. The rationale for this was also understandable. The company had never focused on eliminating duplication after making several acquisitions. It normally just grew the business and absorbed the additional people or normal attrition handled some of it. However, with a slow 2019 and 2020 getting COVID delays "why not rationalize some of the business further?"

The charge was $14.8 million (with an expected additional $1.7 million in the future). That is only 7-cents of EPS. This is far from the type of big-bath restructuring charges we see from other companies who make acquisitions. After a series of recent deals for more than $220 million, this is less than 7% of that total. We also like that the company is not claiming big synergies will come from writing down asset values. This charge is 69%

related to eliminating people and 24% for paying off lease contracts. In both situations, the company should see immediate savings on cash expenses and the workforce reduction is only 8%. Management believes it is still positioned to grow going forward and will do so with a modestly lower cost structure.

Conclusion for Acquisitions and Restructuring:

- Cognex has a reasonable amortization schedule for intangibles

- The company does not make huge deals but does add several small acquisitions as a normal part of operations.

- This is the first series of impairments in recent times and they are small in our view at 9-cents in impairments and 7-cents in restructuring. The impairments will only add 1-cent to annual EPS going forward.

- The restructuring impacts only 8% of the workforce and should have an immediate impact on wages. Cognex is not promising many more synergies.

- We would only take issue that so much of acquisition cost is assigned to goodwill (over 70%).

- There may still be a risk of a goodwill impairment. If reduced forecasts for future cash flows led to an impairment of other intangibles, it seems aggressive to say that forecasts on the same assets do not impair goodwill too.

The 4Q19 Tax Issues - Recap

As noted above, there was a 35-cent adjustment to EPS in 4Q19. This was entirely due to tax changes. We think both issues are one-time events. And want to explain what happened and why the adjustment was so large.

First, the 2017 tax act put a minimum tax on income overseas related to intangible assets – software, acquired goodwill, etc. This tax is called GILTI – Global Intangible Low-Taxed Income Tax. In 4Q19, CGNX opted to change this policy into two deferred tax items:

- In Ireland, it recognized Deferred tax assets of $437.5 million that will be recognized over 15-years as a tax deduction. So Irish taxes will decline as profits are earned.

- In the US, the deduction in Ireland will be disregarded. The tax credits taken in Ireland will be added to taxes in the US as part of the GILTI minimum tax. This led to an offsetting Deferred tax liability of $350.0 million.

- The net difference between the new Deferred tax assets and Deferred tax liabilities is an $87.5 million tax benefit. That was recognized in 4Q19.

- That added 50-cents to income as a one-time item.

- As a result of this new tax structure – CGNX expects its effective tax rate will rise slightly. The effective tax rate has been running about 16-18% of late.

Second, in 2019 Cognex acquired Sualab, which included sizeable intangible assets. With the company changing its tax structure for intangible assets and dealing with GILTI – it also migrated these intangible assets to foreign subsidiaries. This move resulted in a $28.5 million tax expense.

Netting these two items together – the $87.5 million benefit and $28.5 million expense, the company had a $59 million benefit which represented 34-cents in EPS. There was another 1-cents from the tax benefits on stock options that is a more common event.

We only wanted to briefly explain why CGNX is suddenly reporting a big tax change in 2019. Again, the company is expecting a small increase in the effective tax rate from these changes.

Explanation of EQ Rating Scale

6- "Exceptionally Strong"	Indicates uncommonly conservative accounting policies to the point that revenue and earnings are essentially understated relative to the company's peers. Higher possibility of reporting positive earnings surprises
5- "Strong"	Indicates the company has no areas of concern with its reported results and we see very little risk of the company disappointing due to recent results being overstated from aggressive reporting in recent periods.
4- "Acceptable"	Indicates the company may have exhibited a minor "red flag", but the severity of the issue is not yet a concern. Minimal risk of an earnings disappointment resulting from previous earnings or cash flow overstatement
3- "Minor Concern"	Indicates the company has exhibited either a larger number of or more serious warning signs than companies receiving a 4. The likelihood of an immediate earnings or cash flow disappointment is not considered to be high, but the signs mentioned deserve a higher degree of attention in the future.
2- "Weak"	Indicates the company's recently reported results have benefitted materially from aggressive accounting. Follow up work should be performed to determine the nature and extent of the problem. There is a possibility that upcoming results could disappoint as the impact of unsustainable benefits disappears.
1- "Strong Concerns"	Indicates that the company's recent results are significantly overstated and that we view a disappointment in upcoming quarters is highly likely.

In addition to the numerical rating, the EQ Review Rating may also include either a minus or plus sign. A minus sign indicates that our analysis shows the overall earnings quality of the company has worsened since the last review and there is a possibility the numerical rating will fall should the problem continue into the next quarter. Likewise, a positive sign indicates that the overall earnings quality is improving, and the company may see an upgrade in its numerical rating should the trend continue.

Key Points to Understand About the EQ Score

The EQ Review Rating is much more than a blind, quantitative scoring method. While we utilize proprietary adjustments, ratios, and methods developed over decades of earnings quality analysis, the foundation of all of our analysis is reading recent SEC filings, press releases, conference call transcripts and in some cases, conversations with managements.

The EQ Review Rating is not comparable to a traditional buy/sell rating. The Rating is intended to specifically convey the extent to which reported earnings may be over/understated. Fundamental factors such as forecasts for future growth, increasing competition, and valuation are not reflected in the rating. Therefore, a high score does not in itself indicate a company is a buy but rather indicates that recent results are a good indication of the underlying earnings and cash generation capacity of the company. A low score (1-2) will likely result in us performing a more thorough review of fundamental factors to determine if the company warrants a full-blown sell recommendation.

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