

Information Value of the Current Impairment Test: Leading or Lagging Indicator?



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Article 2 of 3

The IVSC issues Perspectives Papers from time to time, which focus on pertinent valuation topics and emerging issues. Perspectives Papers serve a number of purposes; they initiate and foster debate on valuation topics as they relate to the International Valuation Standards (IVS); they provide contextual information on a topic from the perspective of the standard setter; and they support the valuation community in their application of IVS through guidance and case studies.

Perspectives Papers are complementary to the IVS and do not replace or supersede the standards. Valuers have a responsibility to read and follow the standards when carrying out valuations.

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Amortisation of Goodwill Revisited

The IVSC has received a number of questions from constituents asking whether the principles underlying business valuations are compatible with the concept of goodwill amortisation. The IVSC Boards have discussed the topic and concluded that the best way to aid public discussion is by publishing a three-part article series to explore the fundamental perspectives with the goal of aiding

capital markets by informing financial statement preparers, reviewers, and users.

Questions the IVSC explore in the three-part article series include:

- **Part 1:** Is goodwill a wasting asset with a readily determinable life, or an indefinite lived asset?¹

¹ See: *Is Goodwill a Wasting Asset?*
<https://www.ivsc.org/files/file/view/id/1599>

- **Part 2:** What is the information value of the current impairment framework?
- **Part 3:** What are practical solutions to enhance the current goodwill impairment framework?

In this, the second of three articles, the IVSC explores the information content of the goodwill impairment test and highlights some reasons for its perceived flaws and limitations as a leading indicator. As the below demonstrates, the current goodwill impairment framework provides inconsistent results as a leading indicator. Rather than attempt to analyse historical observations or draw a consensus from the existing academic studies on the topic, the IVSC has instead analysed the accounting framework to better understand why goodwill impairments in **certain** situations fail to be a leading indicator. In doing so, we identify four primary reasons for why goodwill impairments often lag market sentiment, and utilise a number of examples to articulate the fact patterns which lead to these outcomes. In the third article in this series, we will then discuss some practical solutions to enhance the current goodwill impairment framework.

Finally, the below clearly indicates that goodwill amortisation would exacerbate the lagging character of the goodwill impairment test.

Information Content of the Current Impairment Test

The existing goodwill impairment framework provides financial statement users² with a range of valuable information. Various studies and articles have analysed the information value of the content produced and disclosed as part of the goodwill impairment framework.ⁱ However, the current debate is not about whether the goodwill framework provides valuable information, but rather about how much. In this sense, the debate relates to the relative “benefit” in the “cost/benefit” paradigm in which all financial reporting standards are assessed.

While studies show the importance of the goodwill framework, there is a persistent view that the information value is limited by the test’s inability to consistently serve as a leading indicator of future cash flows and returns.³ A good example which shows how the above may not be a

² Users may include, among others, equity analysts and investors, credit analysts and investors, Board of Directors, Company Executives, and regulators.

³ IFRS - *Better information about business combinations* (September 2019):

<https://www.ifrs.org/-/media/project/goodwill-and-impairment/in-brief-goodwill-and-impairment-factsheet.pdf?la=en>

leading market indicator is discussed in *Leading Indicators of Goodwill Impairment* by Hayn & Hughes (2006).ⁱⁱ This finding is, however, not supported by more recent studies, like *Causes and consequences of goodwill impairment losses* by Li, Shroff et al. (2011).ⁱⁱⁱ A potential reason for the difference in conclusion of both studies (a lagging versus a leading indicator) may be in the sample period used. Hayn & Hughes almost exclusively rely on data before the introduction of SFAS 142, whereas Li, Shroff et al. don't. Additional articles such as *Market reaction to goodwill impairments* by Knauer & Wöhrmann (2016)^{iv} and *Has goodwill accounting gone bad?* by Li & Sloan (2017)^v also provide useful insights, but no definitive evidence to resolve the question of leading or lagging indicator. Finally, *Trigger Warnings: When is Goodwill Impairment Disclosure Informative?* by Maria Nykyforovych (2017) finds significant price and volume market reactions, but only in certain defined fact patterns.^{vi}

In summary, while in certain instances goodwill impairments are undoubtedly a leading indicator, impairments do not appear to consistently serve as a leading indicator of future cash flows and returns.

This article examines potential reasons why goodwill impairment may not be a leading indicator in certain instances, with

the goal of identifying accounting and valuation solutions to improve the current impairment framework and alter the resulting cost/benefit equation.

The remainder of this article examines four potential reasons for the persistent timing lag in the disclosure of goodwill impairments:

1. **Impairment Shielding** – internally generated headroom
2. **Artificial Headroom** – amortisation of acquired intangible assets
3. **Impairment Triggers** – overly broad and outward looking
4. **Behavioural Considerations** – A reluctance to take impairment

What Should Constitute a Goodwill Impairment?

Before examining limitations of the impairment test and exploring areas for improvements, it's helpful to first examine a more conceptual question: when should a goodwill impairment occur?

Most acquisitions are done with the purpose to create value. It follows that a goodwill impairment should result if the aspired value creation cannot be created in a sustainable way. In other words, the price paid for the target was such that the

value of the combination (the acquirer's legacy Tested Unit⁴ operations plus target value) falls below the value of the acquirer's legacy Tested Unit operations plus the price paid for the target. Such a definition represents a simple yet rigid view, as the complexities and nuances of goodwill testing often cloud the issue. For example, should a Tested Unit be impaired anytime it falls behind expectations? Or alternatively, should it not be impaired if management sees the situation as temporary or has implemented a strategy to remediate? If the latter, and the Tested Unit is not impaired immediately upon the downturn, when is it appropriate to conclude that the downturn is not temporary and/or the turnaround plan has not succeeded?

The reason for a failure to create incremental value through M&A could be threefold: (i) the target company could be underperforming compared to expectations at the time of the acquisition, (ii) the legacy Tested Unit operations of acquirer did not perform as expected or (iii) a combination of both.

Regardless of whether one has a more mathematical view of when impairment

should occur, or one more nuanced with qualitative considerations, for reasons we explain in this article **the current goodwill impairment framework allows for the fair value of the:**

- 1) acquired business,
- 2) legacy business, or
- 3) combination of the two

to permanently, and in some cases significantly, decline below the fair value at the acquisition date without triggering an impairment to goodwill. Additionally, when an impairment is ultimately taken, the amount of the impairment charge is often significantly different to the actual diminution in value of the acquired business, legacy business, or combination of the two.

Most financial statements users, preparers, and reviewers, are unaware of this outcome. The potential consequences for users and the capital markets are most significant, as a lack of goodwill impairment is typically interpreted as implicit confirmation that an acquisition is performing as planned, or better than planned, at the acquisition date. A choice to revert to past accounting policies to amortise goodwill, would make these consequences even more severe.

⁴ The term "Tested Unit" is used throughout the article for simplicity. Tested Unit should be

considered synonymous with a Reporting Unit for US GAAP or Cash Generating Unit under IFRS.

Impairment Shielding – Internally Generated Headroom

Acquired goodwill can be shielded from impairment by unrecognised headroom of the legacy business that becomes part of the Tested Unit post acquisition. Internally generated headroom primarily consists of self-generated and unrecognised intangible assets and goodwill of the legacy business of the Tested Unit.⁵ Because these assets are not recognised on the balance sheet, there exists a difference in basis between the fair value of the legacy business of the Tested Unit which implicitly includes the value of such assets, and the carrying value (i.e., book value) of the legacy business of the Tested Unit which does not recognise the

assets. As a result of the internally generated headroom, the purchased goodwill can only be impaired once the internally created goodwill and intangibles have been exhausted. By this time, the company has likely made a series of communications regarding the underperformance of the acquisition and/or Tested Unit, or broader industry and market trends have been identified and accounted for by investors. This concept is displayed below in Table 1. Despite the immediate and sustained decline in the performance of the acquired business (row D), the initial headroom and stable performance from an existing business shields the downturn in the acquired business.⁶

⁵ While the book value and fair value of other assets and liabilities may diverge (e.g., economic depreciation is not equal to book depreciation), such differences are typically minor as compared to intangible assets and goodwill as the book value is typically zero.

⁶ The below examples are for demonstration purposes only and make certain simplifying assumptions such as they do not consider any changes to the carrying value of the Tested Unit.

Table 1							
Ref		2019	2020	2021	2022	2023	2024
[A]	Legacy Business of Tested Unit Fair Value	100	100	100	100	100	100
[B]	Legacy Business of Tested Unit Carrying Value	75	75	75	75	75	75
[C]	Internally Generated Headroom <i>[A] less [B]</i>	25	25	25	25	25	25
[D]	Value of Acquired Business	100	95	90	85	80	75
[E]	Cumulative Economic Impairment to Acquired Business		5	10	15	20	25
[F]	Tested Unit Fair Value <i>[A] + [D]</i>	200	195	190	185	180	175
[G]	Tested Unit Carrying Value <i>[B] + Purchase Price of 100</i>	175	175	175	175	175	175
[H]	Net Tested Unit Headroom for Impairment Test <i>[F] - [G]</i>		20	15	10	5	0
	Financial Reporting Impairment		No	No	No	No	No

While, the above table displays a scenario in which the acquisition is of equal value to the legacy business of the Tested Unit, often the legacy business of the Tested Unit is substantially larger than the target. For example, if the legacy business of the Tested Unit fair value was 1,000, it would have 250 of internally generated headroom at acquisition⁷. Under this fact pattern, the acquired company could be completely dissolved without recognising a goodwill impairment for the Tested Unit. In this context, the unit of account for the impairment test is critically important. If one were to increase the unit of account,

the impact of internally generated headroom becomes more severe.

Table 2 (below) shows how internally generated goodwill can also act to delay the recognition of impairment. In the table, the acquired business suffers a decline immediately after acquisition (row D); however, the financial reporting impairment (row F) is not recognised until two or three years after the economic impairment. Additionally, the initial internal headroom of the legacy business of the Tested Unit causes the amount of recorded impairment to be understated. In 2022, a goodwill impairment of 5 would

⁷ The Table 1 example assumes unrecognized intangible assets and goodwill equal to 25% of the legacy business Tested Unit fair value. Assuming a 1,000 fair value for the legacy business of the

Tested Unit, and the same 25% assumption, the internally generated intangible assets and goodwill would be 250.

be recorded, yet the Fair Value of the Tested Unit has declined by 30. After 2022, the impairment framework may act to exacerbate the market downturn as the mechanics of the test indicate an

increasing rate of decline for the Tested Unit (Impairment of 10 in 2023 compared to 5 in 2022) despite there being a constant and steady decline in value for the Tested Unit.

Table 2							
Ref		2019	2020	2021	2022	2023	2024
[A]	Legacy Business of Tested Unit Fair Value	100	95	90	85	80	75
[B]	Legacy Business of Tested Unit Carrying Value	75	75	75	75	75	75
[C]	Internally Generated Headroom <i>[A] less [B]</i>	25	20	15	10	5	0
[D]	Value of Acquired Business	100	95	90	85	80	75
[E]	Cumulative Economic Impairment to Acquired Business		5	10	15	20	25
[F]	Tested Unit Fair Value <i>[A] + [D]</i>	200	190	180	170	160	150
[G]	Tested Unit Carrying Value <i>[B] + Purchase Price of 100 less cumulative impairments in prior years</i>	175	175	175	175	170	160
[H]	Net Tested Unit Headroom for Impairment Test <i>[F] - [G]</i>		15	5	-5	-15	-25
	Financial Reporting Impairment		No	No	5	10	10

The inability of the current test to timely identify impairment, and the tendency to under report any impairments when they first occur, may be supported by historical observations as evidence from the Duff & Phelps 2018 U.S. Goodwill Impairment Study is also indicative of this matter. Reviewing the results by industry provides valuable insights. For example, the study found that 56% of energy companies with goodwill on the balance sheet recorded

an impairment in 2015, and such impairments wrote off 14.9% of the total goodwill balances at those companies.⁸ However, the S&P 500 energy index fell by almost half from June 2014 to January 2016. Despite this drastic decline, 44% of companies in the energy sector with goodwill were able to avoid recording an impairment. Furthermore, as most energy companies likely have more than one reporting unit and may have only

⁸ Duff & Phelps 2018 U.S. Goodwill Impairment Study:
<https://www.duffandphelps.com/>

</media/assets/pdfs/publications/valuation/gwi/2018-us-goodwill-impairment-study.ashx>

recorded impairment in a single reporting unit, the frequency of impairments is actually even lower. Additionally, despite index market values falling by almost 50%, the average impairment of goodwill balances was only 14.9% or 0.7% of total assets.⁹

These broad market observations can be contrasted with the fact pattern for Kraft Heinz and its recently announced impairments. In February 2019 Kraft Heinz announced a goodwill impairment of \$7.3 billion and an \$8.7 billion impairment to its intangible assets. Immediately following the announcement, Kraft Heinz share price fell 27%. The reduction in market cap was \$16.2 billion, almost equivalent to the combined impairment. The events led Warren Buffet to subsequently state that *"I overpaid for Kraft Heinz."*

An examination of the Kraft Heinz case shows why the recognition of goodwill impairment was a leading indicator in this instance. From April 2013 to December 2017, the company's goodwill balance increased from \$3 billion to \$45 billion. In the 2017 10-K, the company wrote *"As a majority of our goodwill was recently recorded in connection with the 2013*

Merger and the 2015 Merger, representing fair values as of those merger dates, there was not a significant excess of fair values over carrying values as of April 2, 2017." In other words, the unit of account for the impairment test was similar to the unit of account for the acquisitions and there was little internally generated goodwill and intangibles to shield potential impairments.

Unlike this example, in most instances the purchased company and related goodwill is subsumed into an existing Tested Unit. The internally created goodwill and intangibles create a buffer that either completely shields the reduction in purchased goodwill in the event of a downturn, or at a minimum delays the timing and lowers the amount of the impairment.

In the third and final article, the IVSC plans to analyse how the impact of internally generated headroom could be mitigated, outline the various considerations around increasing or decreasing the unit of account for the impairment test, and consider solutions that more directly examine value creation/diminution of subject acquisitions.

⁹ *Duff & Phelps 2018 U.S. Goodwill Impairment Study:*
<https://www.duffandphelps.com/>

</media/assets/pdfs/publications/valuation/gwi/2018-us-goodwill-impairment-study.ashx>

Artificial Headroom – Amortisation of Acquired Intangible Assets

Although much of the public discussion on the shielding of goodwill impairment has focused on how goodwill can be obscured by unrecognised headroom of the legacy business of the Tested Unit, the current impairment framework also creates a natural headroom over time as acquired intangible assets are amortised and new intangibles are not recognised on the balance sheet.¹⁰

As discussed in the first article, many of the components of goodwill enable the generation of future intangible assets.

Intangible assets are the primary drivers of value creation for most going concern businesses. However, the current impairment model effectively allows for the assessment of goodwill without consideration of the newly generated intangible assets, which replace the amortising acquired intangible assets that over time. For example, in Table 3 the decline in the value of the acquired business is slower than the annual amortisation of the intangible assets. Therefore, despite being unable to drive new intangible asset value creation post acquisition to maintain or grow the value of the acquired business, the goodwill is not impaired.

Ref		2019	2020	2021	2022	2023	2024
[A]	Value of Acquired Business	100	97	94	91	89	86
[B]	Carrying Value of Tested Unit	100	94	88	82	76	70
[C]	Cumulative Economic Impairment to Acquired Business <i>Purchase price of 100 less line [A]</i>		3	6	9	11	14
[D]	Net Tested Unit Headroom for Impairment Test [A] - [B]		3	6	9	13	16
	Financial Reporting Impairment		No	No	No	No	No

The amortisation of intangible assets has a greater tendency to shield impairments as time passes, thus leading to decreased information value of the goodwill

framework the further away from the acquisition date. Furthermore, an examination of the components of goodwill from the first article shows that

¹⁰ While acquired tangible assets are depreciated after acquisition, they are replaced by newly acquired tangible assets that, unlike intangibles, are capitalised on the balance sheet. While

financial depreciation will differ from economic depreciation and result in book value versus fair value differences, such differences are typically minor as compared to intangible assets.

the vast majority of goodwill is assumed to be indefinite in nature. It follows that while the current impairment framework is better able to identify impairments shortly after acquisition, the components of goodwill are modeled to exist indefinitely, and thus not likely to be impaired in the years immediately after acquisition. In other words, the current test has decreasing utility as time passes, yet goodwill is economically more likely to be impaired as time passes.

While the above example assumes the acquired business becomes a separate Tested Unit, the amortisation of intangible assets has the same effect if combined with legacy operations.

Revisiting the scenario from Table 2, but with consideration of the amortisation of acquired intangible assets, the result (table 4, below) is that the economic impairment is not delayed but rather totally shielded from impairment.

Table 4							
Ref		2019	2020	2021	2022	2023	2024
[A]	Legacy Business of Tested Unit Fair Value	100	95	90	85	80	75
[B]	Legacy Business of Tested Unit Carrying Value	75	75	75	75	75	75
[C]	Internally Generated Headroom [A] less [B]	25	20	15	10	5	0
[D]	Value of Acquired Business	100	95	90	85	80	75
[E]	Carrying Value of the Acquired Business	100	94	88	82	76	70
[F]	Headroom Created by Amortization	0	6	12	18	24	30
[G]	Tested Unit Fair Value [A] + [D]	200	190	180	170	160	150
[H]	Tested Unit Carrying Value [B] + [E]	175	169	163	157	151	145
[i]	Net Tested Unit Headroom for Impairment Test [G] - [H]		21	17	13	9	5
Financial Reporting Impairment			No	No	No	No	No

Leveraging the conclusions outlined above, one can clearly see how a move to amortise goodwill would severely reduce the information value of the goodwill impairment process and exacerbate the

shortcomings of the test (shielded impairment and a lagging indicator).

Revisiting the example above, Table 5 below shows how amortisation of

goodwill over a 10-year life would shield an even greater downturn in the acquired business. While the business suffers a steep decline in value, incremental

headroom created by the annual amortisation further shields the decline in the acquired business.

Table 5							
Ref		2019	2020	2021	2022	2023	2024
[A]	Legacy Business of Tested Unit Fair Value	100	95	90	85	80	75
[B]	Legacy Business of Tested Unit Carrying Value	75	75	75	75	75	75
[C]	Internally Generated Headroom <i>[A] less [B]</i>	25	20	15	10	5	0
[D]	Value of Acquired Business	100	95	90	85	80	75
[E]	Carrying Value of the Acquired Business	100	92	84	76	68	60
[F]	Headroom Created by Amortization (Including Goodwill)	0	8	16	24	32	40
[G]	Tested Unit Fair Value <i>[A] + [D]</i>	200	190	180	170	160	150
[H]	Tested Unit Carrying Value <i>[B] + [E]</i>	175	167	159	151	143	135
[I]	Net Tested Unit Headroom for Impairment Test <i>[G] - [H]</i>		23	21	19	17	15
	Financial Reporting Impairment		No	No	No	No	No

In addition to exacerbating the most significant shortcoming of the impairment test, the knock-on effect of amortising goodwill would also reduce the frequency of the other information content components. For instance, as goodwill impairment is further shielded by amortisation, it will lower the frequency in which Tested Units fall within the margin for 'at-risk' disclosures.

Finally, the introduction of goodwill amortisation would also further reduce

the test's utility significantly as time passes from the date of acquisition. As noted above, the accumulation of amortisation has a compounding effect to shield impairment over time.

Solutions to mitigate the impact of an amortising asset base have not been recently explored within the goodwill impairment framework. However, an obvious possible solution may include an adjustment to the carrying value, or fair value, for the cumulative acquired

amortised assets to provide for a more like-for-like comparison of goodwill. Much like the possible solutions for internally generated headroom, the IVSC will consider solutions that more directly examine value creation/diminution of subject Tested Units in the third and final article.

Impairment Triggers – Overly Broad and Outward Looking

The shortcomings of the current impairment model as a leading indicator can be evidenced by how regularly stock price deterioration is cited as the trigger for a goodwill assessment. The goal of the goodwill impairment process is not to react to market sentiment, but rather to inform market sentiment.

A review of the example triggers cited in accounting standards shows them to be overly broad and primarily focused on external market and industry conditions. In some cases, such as stock price, the triggers themselves are a lagging indicator.

The study *"Trigger Warnings: When is Goodwill Impairment Disclosure Informative?"*¹¹ examines the information

content of financial statement disclosures related to goodwill impairment testing. The paper contends that impairment reasons can be grouped into three categories: firm, industry, or economy-related. The study finds significant price and volume market reactions to a firm's decision to impair goodwill, but only if a firm discloses firm-specific triggering events. The author concludes that these results indicate that financial statement users require more detailed firm-specific disclosures related to goodwill impairment testing. However, these conclusions are also relevant for the reassessment of appropriate triggering events.

As the current triggers are primarily focused on external market and industry conditions, it stands to reason they are thus more likely to identify impairments that are industry or economy related. As the study shows, these types of impairments have far less information value than firm specific events because investors are often able to identify the impact of economic and industry trends on the company prior to disclosure of goodwill impairment. In other words, the goodwill impairment triggers systematically identify lagging indicators

¹¹ *Trigger Warnings: When is Goodwill Impairment Disclosure Informative:*

<https://pdfs.semanticscholar.org/e0cd/06224109bebae4471cac895e90872229707a.pdf>

which result in impairments that are already priced by investors.

The observation that the current impairment triggers may systematically identify types of impairments that have less information value, points to a clear opportunity to enhance the benefit of the impairment framework with little or no incremental costs. Additionally, as accounting standard setters are actively considering forgoing the requirement for annual impairment tests in favour of a trigger-only based test, the effectiveness of impairment triggers may become significantly more important to ensuring timely impairment disclosures. In the third and final article of this series, the IVSC will explore how impairment triggers and related disclosures may be revised to help identify impairments in a timelier fashion.

Behavioural Considerations – A Reluctance to Take Impairment

Anecdotal evidence shows that goodwill impairment charges are often accompanied by a change in management, overall strategy and/or a decision to restructure or sell all or a part of an acquired business. Given this reality, impairment charges often involve significant input from senior management and executives, unlike many other accounting judgements. These changes

are often fundamental to the outlook for the Tested Unit and thus can result in a meaningful change in the financial projections and the resulting estimate of fair value. As a result, these actions are often not taken until more tactical moves have proven ineffective.

The catalyst which causes management to decide to change direction is difficult to forecast and may also be influenced by the fact that goodwill impairment is a one-way downside test. If the test allowed for the recovery of impaired goodwill, it may encourage more timely impairment charges. It may also reduce both preparation and review efforts.

As goodwill impairment often requires input from senior management and executives, some users also believe an agency problem exists. The CFA Institute has noted this reluctance to take goodwill impairments and highlighted what it perceives to be a moral hazard. Those responsible for conducting and overseeing the goodwill impairment process, in most cases are also part of the investment evaluation and decision process. As such, these individuals may have an inherent bias, thus raising a potential principle-agent issue. Specifically, CFA Institute recently stated: *"Sophisticated investors (i.e. price makers) will generally write-off goodwill long before*

*management, understanding the moral hazard of management's assessment."*¹²

The current mechanics of the goodwill framework which creates artificial headroom through the amortisation of intangible assets, may also have an impact on management's reluctance to take goodwill impairments. For example, rather than recognise an impairment, management may attempt to delay the impairment charge in hopes that the additional cushion created by intangible amortisation the following year will take pressure off the calculation. If true, **the introduction of goodwill amortisation would exacerbate the reluctance to take goodwill impairment charges.** All else equal, goodwill amortisation would act to further reduce the carrying value year to year (see Table 5 above), and further encourage management to delay an impairment charge in the hope that the additional cushion will create the needed headroom. In the third and final article, the IVSC will explore options to mitigate some of the behavioural considerations that drive a reluctance to take impairment, including considerations of how the ability

to restore previously impaired goodwill balances may result in more timely impairments.

Conclusions

As concluded in the first article, goodwill is not a wasting asset. Additionally, while the current impairment model provides significant information content (both quantitative and qualitative) to a diverse group of users, it provides inconsistent results as a leading indicator. However, based on the current limitations of the goodwill model as a leading indicator identified above, the final article will look to provide practical solutions to enhance the information value of the goodwill impairment test.

The IVSC will continue to consider the topics in this article and feedback outside our formal consultations is always welcome. You can share your thoughts with the Board, or contribute to the discussion through the [IVSC LinkedIn group page](#).

You can contact the author through the IVSC Business Valuation Board: contact@ivsc.org

¹² CFA Institute comment letter to the UK Competition and Markets Authority (CMA) related to the Statutory Audit Service Market Study



ⁱ The extensive research in this area shows that goodwill impairments provide inconsistent results as a leading indicator. The content can be specific to a subject transaction(s) or more broadly related to the overall performance of a subject Tested Unit. The content of the goodwill impairment framework includes:

- Disclosure of at-risk Tested Unit.
 - Such disclosures often provide key insights into Management's thought process and assumptions for the Tested Unit performance.
- Disclosure of goodwill impairment.
 - Impairment disclosures may provide previously unknown information which cause investors to re-evaluate the future earnings of the business and thus result in price and/or volume changes.
 - In the event the impairment charge is not a leading indicator (i.e. investors have already incorporated such information into their expectations for the future earnings of the business), the disclosure provides confirmatory evidence that supports the markets' perception that a transaction and/or Tested Unit has not performed as expected at acquisition.
- Lack of goodwill impairment and lack of at-risk Tested Unit disclosures.
 - While a disclosure of at-risk Test Units and goodwill impairment provide insights of underperformance, the lack of disclosure alternatively in some cases provides insights on managements' ability to exercise good governance in M&A and/or the effective management of the Tested Unit business.

ⁱⁱ *Leading Indicators of Goodwill Impairment* by Hayn & Hughes (2006), finds that disclosures on acquired entities (mainly through the impairment test) do not provide sufficient information to predict future goodwill write-offs. As a result, goodwill impairments often come too late, allowing managers to time the write-off, using their discretion when basing their impairment test for a significant amount on non-verifiable information, a feature inherent to fair value accounting.

ⁱⁱⁱ *Causes and consequences of goodwill impairment losses* by Li, Shroff et al. (2011), finds that (1) the announcement of a goodwill impairment leads the market to revise its expectations for the company downwards as reflected in a significant negative share price reaction, (2) this negative revision is stronger when the impairment is larger, and (3) an important cause of an impairment seems the amount of overpayment for the target company, using observable measures which are known to infer overpayment indications.

^{iv} *Market reaction to goodwill impairments* by Knauer & Wöhrmann (2016), covers both companies reporting goodwill impairments under US GAAP and IFRS during the 2005-2009 period. The study clearly reports negative capital market reactions to goodwill impairments; however, these reactions seem larger in countries where managerial discretion may be more likely, due to an environment with lower investor protection. Furthermore, the less verifiable the information provided by management is, the more negative the reaction.

^v *Has goodwill accounting gone bad?* by Li & Sloan (2017), uses a sample of US firms only, however, during a larger period (1996-2011), and thus seeks to compare the pre-SFAS 142 years with the post ones. The study concludes that goodwill impairments have become less timely after the introduction

of SFAS 142. Their main finding is that firms with high goodwill balances and low profitability have both a higher probability of future goodwill impairments and lower future stock returns. In other words, goodwill impairments may be lagging, in particular in situations where management may have reasons to delay the message, like a longer tenure for the CEO, a smaller acquiring firm and less institutional ownership. However, even in such situations, the share price reaction to an impairment announcement may still be negative, indicating that the informational content of the impairment message may still be informative.

^{vi} *Trigger Warnings: When is Goodwill Impairment Disclosure Informative?* by Maria Nykyforovych (2017), contends that impairment reasons can be grouped into three categories: firm, industry, or economy-related. The study finds significant price and volume market reactions to a firm's decision to impair goodwill, but only if a firm discloses firm-specific triggering events.