IN THE GENERAL DIVISION OF
THE HIGH COURT OF THE REPUBLIC OF SINGAPORE

[2024] SGHC 163

Suit No 359 of 2013

Between

TOWA Corporation

… *Plaintiff*

And

(1) ASMPT Singapore Pte Ltd
(2) ASMPT Limited

… *Defendants*

GROUNDS OF DECISION

[Damages — Assessment]
[Intellectual Property — Remedies — Damages]

TABLE OF CONTENTS

TOWA Corp
v
ASMPT Singapore Pte Ltd and another

[2024] SGHC 163

General Division of the High Court — Suit No 359 of 2013
Lee Seiu Kin SJ
24 July, 24 August, 14 September, 3 November 2023, 15, 27 March 2024

27 June 2024

Lee Seiu Kin SJ:

Introduction

1 In *TOWA Corp v ASM Technology Singapore Pte Ltd* [2023] 5 SLR 870 ("*TOWA*"), I had set out my decision on the assessment of the damages to be awarded to the plaintiff by the first defendant for the infringement of a patent owned by the former. At the end of my decision in *TOWA*, I directed the parties to provide an agreed computation of the damages to be awarded based on the parameters I set in *TOWA*.

2 Subsequent to my decision in *TOWA*, the parties appeared before me six times to clarify the parameters to be applied in their computations. This judgment concerns the clarifications that I made in the course of those six further hearings (collectively, the "Further Hearings").

Facts

3 The facts, the background to this dispute and the parties' cases with respect to the assessment of damages are comprehensively set out in *TOWA* at [2]–[17]. In the interests of brevity, I shall not repeat them at length.

4 It is sufficient for me to mention the following in order to establish the appropriate context to my decisions. The plaintiff is in the business of providing semiconductor packaging solutions and, to this end, sells various products, including its YPS machine. The first defendant had manufactured and sold moulding machines known as the IDEALmould machine. In the first tranche of this suit, the first defendant's acts of making, disposing of, offering to dispose of, keeping and offering for use the IDEALmould machine had been found to constitute infringements of a patent owned by the plaintiff. This decision was upheld on appeal. The Court of Appeal also held that the damages or account of profits for the infringement of the plaintiff's patent would run from 20 April 2007 to 5 July 2014 (the "Claim Period"). The plaintiff elected for damages accrued during the Claim Period to be paid to it by the first defendant.

Summary of my findings in TOWA

5 Broadly speaking, I held *in TOWA* that the plaintiff was entitled to recover the loss of profits arising from its lost sales of its auto mould machines (the "Lost Initial Sales"), as well as its lost sales of additional parts and aftersales products and services arising from the Lost Initial Sales (the "Lost Additional Sales"). In order to calculate the loss of profits arising from the Lost Initial Sales, the hypothetical number of sales of the auto mould machines that the plaintiff would have made but for the first defendant's infringement had to be determined (the "But-for Scenario"). I found that this corresponded to the maximum number of sales that the plaintiff could have possibly made but for

the sale of the infringing IDEALmold machines (the "But-for Sales") – which corresponded to the first defendant's record of sales of the relevant infringing IDEALmold machines – adjusted to reflect the plaintiff's market share.

6 In *TOWA* at [117]–[120], I summarised my detailed findings with respect to the damages to be awarded to the plaintiff:

> 117 For Towa's claim for profits lost by Towa arising from lost sales of YPS machines:
>
> (a) The two unsold IDEALmold machines and the 72 170T IDEALmold machines are to be excluded from calculations. This leaves a total of 365 But-for Sales.
>
> (b) The correct way to calculate the number of machine sales that Towa would have captured in the But-For Scenario is to go by the number of IDEALmold machines sold per year in each country/regional market and derive the But-for Sales which Towa would have sold, based on Towa's market share for that year.
>
> (c) A year-on-year approach should be applied to calculate the profits which Towa could have made in the But-for Scenario. However, no profit from But-for Sales should be calculated for years which are found to be loss-making.
>
> 118 For Towa's claim for lost profits arising from aftersales products and services and Additional Sales:
>
> (a) The estimated life expectancy of the YPS machines is to be fixed at ten years, with no deduction of any warranty period.
>
> (b) When determining TOWATEC's claim for aftersales profits, the calculations should consider only the seven customers who can be established to have sought aftersales servicing for YPS machines.
>
> (c) The profits arising from the Additional Sales be awarded to Towa. The decrease in additional sales of press modules, moulds and other parts after November 2011 should be taken into account in the calculation of profits which Towa would earn from the additional sales.
>
> 119 For Towa's claim for lost profits arising from its price reduction on its YPS machines to compete with ASMS, I find

> that this claim has not been made out, and no profits are to be awarded.
>
> 120 I also find that:
>
> (a) The currency to be applied is JPY and not USD.
>
> (b) Indirect sales commissions and only the development cost, disposal cost and valuation cost that can be attributed to YPS machines are to be included as incremental costs. Depreciation and amortisation, financing costs, as well as indirect R&D costs, should be excluded.
>
> (c) A discount rate of 10% should be applied to the additional sales and aftersales beginning from the date of judgment of the assessment.
>
> (d) Pre-judgment interest of 5.33% should be applied from the date of writ until the date of judgment on 22 December 2016.

7 At the end of my decision in *TOWA*, I directed the parties to provide an agreed computation of the damages to be awarded to the plaintiff based on these parameters by 12 May 2023.

Procedural History

8 After the release of my judgment in *TOWA*, the parties proceeded to perform their computation of the damages to be awarded to the plaintiff. As they could not come to an agreement on a number of issues, they appeared before me at four further hearings, on the following dates:

(a) 24 July 2023 (the "First Further Hearing");

(b) 24 August 2023 (the "Second Further Hearing");

(c) 14 September 2023 (the "Third Further Hearing"); and

(d) 3 November 2023 (the "Fourth Further Hearing").

9 Subsequent to the Fourth Further Hearing, on 23 February 2024, the counsel for the plaintiff wrote to inform the court that the parties had come to an agreement on the damages computed according to the parameters I had determined in *TOWA* and in the First to Fourth Further Hearings. Accordingly, at the hearing on 15 March 2024 (the "Fifth Further Hearing"), by the consent of the parties, and on the basis of my findings in relation to the parameters to be relied on in computing the damages owed to the plaintiff, I awarded damages to the plaintiff in the sum of ¥386,942,396. As per the letter from the plaintiff's counsel dated 23 February 2024, (a) this amount excluded interests and costs; and (b) the parties' agreement was without prejudice to and shall not in any manner limit, constrain or affect any future proceedings, including any appeal, concerning the relevant parameters determined by me in *TOWA*.

10 As there was an unresolved issue as to the interest to be applied to the quantum of damages already recorded, a hearing was convened on 27 March 2024 (the "Sixth Further Hearing"). All the outstanding issues were resolved at the Sixth Further Hearing and as such, I ordered that the time to file the notice of appeal, if any, was to run from the date of the Sixth Further Hearing, *ie*, 27 March 2024.

The issues

11 During the course of the Further Hearings, the parties had sought my determination on the following issues:

(a) In relation to the plaintiff's loss of profits arising from the loss of sales of its YPS machines,

(i) what the maximum number of But-for Sales was;

(ii) whether the Hong Kong market was part of the market labelled "Asia (Others)" or "China";

(iii) whether the number of But-for Sales which the plaintiff would have captured should be expressed as a whole number;

(iv) how to determine the relevant market share which was to be used to calculate the number of But-for Sales that the plaintiff would have captured;

(v) what degree of specificity the relevant market share should be calculated to;

(vi) what additional costs of sales were to be excluded from the computation of damages;

(b) In relation to the plaintiff's loss of profits arising from the Lost Additional Sales,

(i) whether the plaintiff should be entitled to the loss of profits arising from the lost sales of additional parts in respect of YPS machines that would have been sold by the plaintiff in the two years in which the plaintiff made losses from the sales of its machines;

(ii) how should the loss of profits arising from the lost sales of additional parts be calculated;

(iii) to what extent the plaintiff was entitled to the loss of profits arising from the lost provision of aftersales services;

(iv) from which date the discount rate applied;

(c) In relation to the issue of interest and cost,

(i) during which periods should pre- and post-judgment interest be imposed;

(ii) whether the re-computations were to include any pre-judgment interest;

(iii) what were the costs to be ordered.

12 I considered the above issues during the Further Hearings and clarified my findings in those areas. I now set out these findings in greater detail as well as my reasons.

Loss of profits arising from the Lost Initial Sales

13 I first set out all the issues related to the damages to be awarded to the plaintiff for the loss of profits arising from the Lost Initial Sales, *ie*, the lost sales of the plaintiff's auto mould machines. As explained (see above at [5]), the two key components of determining the Lost Initial Sales are: (a) the number of infringing IDEALmold machines sold by the first defendant in the Claim Period; and (b) the plaintiff's market share.

Issues related to the number of infringing IDEALmold machines sold by the first defendant in the Claim Period

The maximum number of But-for Sales should be "339"

14 In *TOWA* at [45]–[46], I held the following, in relation to the But-for Sales, *ie*, the maximum number of sales that the plaintiff could have possibly made but for the first defendant's sale of the infringing IDEALmold machines:

> 45 … Since [the plaintiff] did not offer 170T YPS machines, I am unable to find that the 72 170T machines sold by [the first defendant] affected [the plaintiff's] sales.

> 46 To summarise, out of the 439 infringing IDEALmold machines manufactured during the Claim Period, the following should be excluded:
>
> (a) Two unsold machines; and
>
> (b) 72 170T machines.
>
> This leaves *365 IDEALmold machines* which are relevant to my considerations below – in other words, there is a maximum of *365 sales* which [the plaintiff] could have possibly made but for [the first defendant's] sale of the infringing IDEALmold machines (the "But-for Sales"). …
>
> [emphasis added]

15 In the re-computations, the plaintiff's expert relied on "365" as the quantity of But-for Sales[1] while the first defendant's expert used "339" as the quantity.[2] The first defendant asserted that while *TOWA* refers to *72* units of 170T machines – which I held should be excluded from the quantity of But-for Sales – the evidence at trial was that *98* units of the 170T machines were sold instead,[3] and so the quantity of But-for Sales should be "339".

16 In support of its conclusion that *98* (rather than *72*) units of 170T machines were sold, the first defendant made four points:

(a) The reference to 72 170T machines in *TOWA* originated from the affidavit of evidence-in-chief of Mr Yuen Chun On, the senior marketing director of the first defendant. However, this was in the context of determining, of the 237 machines sold *directly to external customers*, how many were 170T machines. As such, this figure

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1 Re-computation of damages by NERA Economic Consulting dated 11 May 2023 ("2023 NERA Report") at para 2.2.1.

2 Re-computation of damages by PricewaterhouseCoopers Advisory Services Pte Ltd ("2023 PWC Report") at pp 3–10.

3 1st Defendant's supplementary submissions (Re-computation of Damages) dated 30 June 2023 ("1D Subs") at para 73.

excluded the sales of 170T machines *to the first defendant's foreign subsidiaries*. Combining the sales of the 170T machines from both the said subsets, a total of 98 170T machines had been sold. This was corroborated by the second expert report provided by Mr Chan Kheng Tek ("Mr Chan") of PricewaterhouseCoopers Advisory Services Pte Ltd ("PWC") on 22 January 2021 (the "Second PWC Report").[4]

(b) Only the first defendant presented evidence via the Second PWC Report of the number of 170T machines sold by the first defendant.[5] This was unchallenged evidence.[6]

(c) The underlying source documents, namely the invoices and delivery documents evidencing that *98* units of 170T machines had been sold, was included in the agreed bundle filed in court. This too was unchallenged evidence.[7]

(d) The plaintiff was aware and agreed that the number of 170T machines sold was *not 72*. This was acknowledged in the expert report by NERA Economic Consulting ("NERA") dated 11 May 2023 (the "2023 NERA Report"), where the plaintiff's expert had identified 94 170T machines.[8]

17 It was plain and obvious, on the face of the evidence, that the correct number of units of the 170T machines to be excluded was "98". The principle

4 1D Subs at paras 74–75.

5 1D Subs at para 76.

6 1D Subs at para 77.

7 1D Subs at para 78–79.

8 1D Subs at para 84–86.

to be applied was that – as expounded in *TOWA* at [45] – since the plaintiff did not offer 170T machines for sale, the 170T machines sold by the first defendant would not have affected the sales of the plaintiff. Accordingly, as I had found, *the total number* of units of 170T machines sold by the first defendant must be excluded. This number was, as the unchallenged documentary evidence illustrated, "98" and not "72". The plaintiff also accepted that this number cannot be "72" since its expert had acknowledged that the sales of 170T machines amounted to more than "72" in the 2023 NERA Report. While the plaintiff's expert had identified only 94 170T machines, I accepted the first defendant's submission that the plaintiff's expert had undercounted the number of 170T machines by four units.[9] As such, the correct number of 170T machines sold by the first defendant was "98".

18 Therefore, *TOWA* at [45], [46(b)] and [117(a)] should read "***98*** 170T machines". As a consequence, the number of But-for Sales should be reflected as "***339***" instead of "365" in *TOWA* at [46], [53], [56] and [117(a)].

The Hong Kong market was part of the market labelled "China"

19 Given my decision in *TOWA* at [58] and [117(b)] that "the most appropriate way to calculate the number of machine sales which [the plaintiff] would have captured in the But-For Scenario would be to go by the number of IDEALmold machines sold per year *in each country/regional market* and derive the But-for Sales based on [the plaintiff's] market share for that year" [emphasis added], it was necessary for the parties to determine whether the IDEALmold machines sold by the first defendant in the Hong Kong market would have translated to sales by the plaintiff in the market labelled as "Asia (Others)" or

9 1D Subs at para 82.

as "China" in the industry market share data, as published in the Semiconductor Equipment Data Book 2015.[10] This was the document relied on by both parties.

20 In the re-computations, the plaintiff's expert took the position that the sales in the Hong Kong market would have translated to sales in the "Asia (Others)" market while the first defendant's expert took the position that the sales in the Hong Kong market would have translated to sales in the "China" market.[11]

21 What was key was how the authors of the Semiconductor Equipment Data Book 2015, from which the industry market share data was derived, had categorised sales in the Hong Kong market. Unfortunately, evidence of this was not available.

22 Absent such evidence, I found that the Hong Kong market would be subsumed under the market labelled "China" in the industry market share data. Geographically and politically, Hong Kong is part of China. In addition, the plaintiff's counsel did not, and could not, offer any reason as to why the Hong Kong market should not be considered to be part of the market for "China".

The number of machine sales which the plaintiff would have captured should be calculated to one decimal place

23 The parties differed in their approach to calculating the number of sales that the plaintiff would have captured in the But-For Scenario. On one hand, the plaintiff's expert proceeded on the basis that the number of units that the plaintiff could sell, for the purposes of calculating damages, can be expressed

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10 See Agreed Bundle of Documents (Volume 3 of 13) dated 8 March 2021 at pp 204–211.

11 1D Subs at paras 98–99.

as a number with two decimal places.[12] On the other hand, the first defendant's expert proceeded on the basis that the number of units that the plaintiff could sell must be expressed as a whole number.[13]

24 In this regard, I had held the following in *TOWA* at [117(b)]:

> The correct way to calculate the number of machine sales that Towa would have captured in the But-For Scenario is to go by the number of IDEALmold machines sold per year in each country/regional market and derive the But-for Sales which Towa would have sold, based on Towa's market share for that year.

25 Admittedly, my decision in *TOWA* did not set out the precise arithmetic approach to determining the number of But-for Sales which the plaintiff would have captured.

26 The plaintiff argued that their approach was correct as (a) my decision in *TOWA* did not specify that the figure should be rounded up or down;[14] (b) it did not matter that the machine sales may not be a whole integer;[15] and (c) rounding up or down would allow the plaintiff to recover more (or less) than the actual amount due.[16] The first defendant submitted that it only made sense for whole numbers of machines to be sold and it did not accord with commercial reality for a fraction of a machine to be sold.[17] Accordingly, the first defendant's

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12 See 2023 NERA Report at paras 2.6–2.9.

13 See 2023 PWC Report at pp 3–11.

14 Plaintiff's Submissions (Re-computation of Damages) dated 30 June 2023 ("Pf's Subs") at para 23.

15 Pf's' Subs at para 24.

16 Pf's Subs at para 25.

17 1D Subs at paras 110–111.

expert consistently applied basic and commonly accepted arithmetical rounding rules that the first defendant considered objective and fair.[18]

27 I accepted that it was not possible for a fraction of a machine to be sold. However, it must be recognised that the purpose of this exercise was to determine, *with as close an approximation as possible*, how many machines the plaintiff would have sold if the first defendant's infringing machines had not been competing in the same market as the plaintiff. Given that I had directed the parties to determine the machine sales the plaintiff would have captured specific to each national or regional market and year, the approach of rounding off to the nearest integer in each constituent calculation would result in a distorted figure given the higher rounding errors when a smaller significant figure is used.

28 In the spirit of accuracy, which was equally desirable and favourable to both parties and the court in avoiding over- or under-compensation, I ordered at the First Further Hearing that the number of But-for Sales that the plaintiff would have captured should be rounded up to the nearest 0.1, *ie*, one decimal place. For example, if the number was equal to or lower than 0.15, it would be rounded to 0.1 and if it was higher than 0.15, it would be rounded to 0.2. Employing this approach meant that the number of machines could be expected to be of two significant figures. In my judgment, this higher degree of granularity to the figures would yield a more reliable estimate of the Lost Initial Sales that the plaintiff was entitled to be compensated for.

[18] 1D Subs at para 112.

Issues relating to the plaintiff's market share

Only the portion of the plaintiff's market share relating to its YPS machines should be used

29 In *TOWA* at [57]–[59] and [117(b)], I had held the following:

> 57 It appears to me that the best approach would be to consider the market share of Towa and the purported competitors. The market share best reflects the factors at play in the choice of machine as it is the real-world manifestation of the interplay of all factors that go into the selection process. It is telling that Mr Hayasaka, in disagreeing with ASMS's witnesses' evidence that customers would have purchased machines from other manufacturers, relied on Towa's position as a "global leader in the moulding machine industry" and the comparatively limited market share of the purported competitors. It is most appropriate, in the circumstances of this case, to proceed on the basis that Towa would, in the But-for Scenario, capture the number of sales in proportion to its relative market share.
>
> 58 Therefore, on the evidence before me, I find that the most appropriate way to calculate the number of machine sales which Towa would have captured in the But-For Scenario would be to go by the number of IDEALmold machines sold per year in each country/regional market and derive the But-for Sales based on Towa's market share for that year, subject to any other factors which may affect market share.
>
> 59 To close off, I briefly address ASMS's contention that while Towa had identified the YPS machine as the model that the IDEALmold competed with, Towa had stopped actively marketing the YPS machine after 2011, promoted its new YPM line to new customers and only sold the YPS machine to existing users. I find this point to be a red herring. Towa has a range of products, and if the IDEALmold were not in the market during the Claim Period, it would mean that Towa had an opportunity to make a sale of its products to the customers who purchased an IDEALmold. As such, it is irrelevant whether it was the YPS machine or the YPM that Towa would have sold to them in the But-for Scenario. More importantly, the abovementioned calculation based on market share would take into account all relevant factors.
>
> …
>
> 117 For Towa's claim for profits lost by Towa arising from lost sales of YPS machines:

…

> (b) The correct way to calculate the number of machine sales that Towa would have captured in the But-For Scenario is to go by the number of IDEALmold machines sold per year in each country/regional market and derive the But-for Sales which Towa would have sold, based on Towa's market share for that year.

30 The controversy between the parties was what I had meant by the term "market share". The plaintiff's position was that "market share" referred to the plaintiff's *overall market share for moulding machines*, adjusted to exclude the first defendant from the market.[19] The plaintiff cited several reasons for this:

(a) In *TOWA* at [57], I had referred to the plaintiff's position as a "global leader *in the moulding machine industry*" [emphasis added]. This therefore must be reflective of the overall market share for moulding machines.[20]

(b) Nowhere in *TOWA* was it suggested that the market share was to be confined to that of only the YPS machine, and if the market share was intended to be confined in this manner, it would have been stated so and explained in *TOWA*.[21]

(c) In *TOWA* at [59], I had remarked that the selection of the YPS machine was irrelevant and thus determined that the plaintiff was entitled to damages according to its overall market share for moulding machines.[22]

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19 Pf's Subs at para 8.

20 Pf's Subs at para 11(a).

21 Pf Subs at para 11(b).

22 Pf Subs at 12

31 In contrast, the first defendant's position was that the "market share" referred to the plaintiff's *market share for only the YPS machines*, which was a subset of the plaintiff's wider overall market share.[23] The first defendant submitted that the plaintiff's claim in these proceedings have all along been restricted to lost *YPS machine* sales and the plaintiff had specifically disclaimed losses in respect of any other machine. The plaintiff had limited their disclosure of information to lost *YPS machine* sales only and refused to provide information relevant to lost profits arising from the loss of non-YPS machine sales.[24] As a consequence of this, it would be prejudicial and unfair to allow the plaintiff to recover damages in respect of non-YPS machines because there was simply no information to enable such profits to be calculated.[25]

32 In my judgment, the starting point was that had the first defendant not infringed the plaintiff's patent, the plaintiff would have captured some portion of the But-for Sales. However, as I had expressly recognised in *TOWA* at [56], "there is no evidence from [the plaintiff] that the [But-for Sales] would, more likely than not, comprise of sales of YPS machines only". This meant that the But-for Sales that would have been captured by the plaintiff would have manifested in the form of sales of its YPS and non-YPS machines.

33 Taking a step back, in order for the plaintiff to claim *any* loss of profit, it would need to prove that it did indeed lose profits as a result of the first defendant's infringement of the plaintiff's patent. This would entail producing evidence of the revenue and costs of the plaintiff's machines which it would have sold, had it captured some of the But-for Sales. This burden lay with the

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23 Pf Subs at para 8.

24 1D Subs at para 8.

25 1D Subs at para 9.

plaintiff. However, it was undisputed that the plaintiff had produced such evidence related to *only* its YPS machines and that there was no evidence concerning the plaintiff's non-YPS machines.

34 In fact, the plaintiff had actively sought to avoid the disclosure of such information related to its non-YPS machines. In response to the first defendant's application for specific discovery in HC/SUM 5054/2020, the plaintiff took the position that such information was neither relevant nor necessary as "(a) the plaintiff's claim is only in respect of the plaintiff's YPS machine; and (b) the 1st defendant has not, and cannot demonstrate the relevance of such documents to the proceedings".[26] The plaintiff also took the position that "*none of the Y-series model machines and non Y-series model machines are relevant* to these proceedings for an assessment of damages. … the plaintiff has identified the YPS machine to embody the patent and also as the machine in competition with the infringing IDEALmold machine. The plaintiff's claim is therefore premised on the YPS machine and not any other machine."[27] [emphasis added]. The plaintiff maintained this position in its submissions opposing the specific discovery application, stating that "[t]he sales and cost of sales datasets for 'all products' sold by the Plaintiff is irrelevant as: (i) the Plaintiff is only claiming damages in respect of the YPS machine …".[28]

35 Adopting this position had two implications. First, the plaintiff essentially confirmed that its pleadings had been confined to the sale of only its YPS machines. Second, the failure to introduce evidence related to the sale and

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26 Affidavit of Hiroyuki Kanamaru dated 3 December 2020 ("Pf's Discovery Aff") at p 11.

27 Pf's Discovery Aff at pp 14, 18.

28 Plaintiff's Written Submissions for HC/SUM 5054/2020 dated 7 December 2020 at p 8.

costs of sales of its non-YPS machines meant that it was not possible to calculate any loss of profit that may have accrued if there was a finding that the plaintiff would have made some sales of its non-YPS machines, which eventually transpired. In essence, the plaintiff nailed its colours to the mast in consciously opting to proceed on the basis that it would have (a) captured all of the But-for Sales and, more critically, (b) this would have manifested exclusively in the form of sales of its YPS machines.

36 The result of the plaintiff's conduct of its case was that there was no evidence, in the form of sales and costs of sales data, as to whether there was any loss of profit arising from the sale of its non-YPS machines due to the first defendant's infringement of the plaintiff's patent.

37 In this regard, I found that it would be patently flawed to rely on the sales and cost of sales data for the YPS machines to establish the loss of profit for the non-YPS machines. There was no evidence that the said data for the YPS machines perfectly correlated with that of the non-YPS machines, such that the profit per unit of the YPS machine would be the same as that of each non-YPS machine. In any case, this conclusion would not be probable or reasonably expected since the machines in question were themselves different.

38 Nevertheless, this was the underlying premise of the plaintiff's approach in calculating the loss of profits that it would be entitled to arising from the Lost Initial Sales. In applying the plaintiff's overall market share for auto moulding machines, the resulting number of But-for Sales the plaintiff would have captured included sales of *both* the YPS and non-YPS machines. Consequently, taking this portion and applying it against the sales data for *only* the YPS machine meant that the plaintiff had presumed the sales and cost of sales data

for the *YPS machines* applied equally to determine the loss of profits for the *non-YPS machines*. This was an erroneous approach.

39 Instead, in my judgment, the sales and cost of sales data for the *YPS machines* could only be applied against the portion of the But-for Sales that would have manifested in sales of the *YPS machine*. This portion of the But-for Sales would be determined by the plaintiff's market share *for only the YPS machines*, which was a subset of the plaintiff's wider overall market share. Similarly, the sales and cost of sales data for the *non-YPS machines* could only be applied against the portion of the But-for Sales that would have manifested in sales of the *non-YPS machine*. The portion of But-for Sales that would have manifested in the form of sales of YPS machines (or non-YPS machines) could be determined by expressing the number of YPS machines (or non-YPS machines) as a percentage of the total number of auto mould machines sold by the plaintiff in a particular year and market, and applying this percentage against the plaintiff's overall market share of the same year and market.

40 However, as there was no sales or cost of sales data related to the plaintiff's non-YPS machines, the plaintiff had not proven its claim for loss of profits arising from the lost sales of non-YPS machines. The portion of the But-for Sales that would have manifested in the form of sales of the non-YPS machines was therefore irrelevant for the calculations of the loss of profit. What remained was that the plaintiff would only be entitled to claim for loss of profits related to the portion of the But-for Sales that would have manifested in the form of sales of YPS machines. As such, the critical market share figure was the plaintiff's *market share for only YPS machines*.

41 To close off this issue, I shall also reconcile my decision here with my remarks in *TOWA* at [59]. While I had concluded that "it is irrelevant whether

it was the YPS machine or the YPM that [the plaintiff] would have sold to [the customers who purchased an IDEALmold machine] in the But-for Scenario", this statement was made in the context of calculating the total number of But-for Sales the plaintiff would have captured, which included *all* types of machines the plaintiff had sold. In other words, since applying the plaintiff's overall market share against the But-for Sales would yield the number of machines the plaintiff would have sold, both in the form of the YPS and non-YPS machine, the type of machine was an irrelevant factor to the calculation of the total number of But-for Sales the plaintiff would have captured.

42 However, the present issue was slightly more nuanced. The inquiry went further than simply determining how to calculate the portion of the But-for Sales that the plaintiff would have captured. Rather, the present issue involved the question of how much loss of profit the plaintiff was entitled to for the Lost Initial Sales and how this should be calculated. In answering this question, the form of the machine (whether YPS or non-YPS) that the plaintiff would have sold became relevant because each type of machine had its own corresponding sales data to be used for the calculation of profit per unit. Hence, my remarks in *TOWA* at [59] were directed towards a different question than the one that confronted the parties and the court at the Further Hearings.

43 Thus, in summary, the plaintiff's market share in respect of only the YPS machines should be used, which would yield the portion of But-for Sales that would have manifested in the form of sales of YPS machines. This can then be applied against the sales data of the YPS machines to determine the loss of profits arising from the lost sales of YPS machines. As there was no sales or cost of sales data related to the plaintiff's non-YPS machines, the plaintiff had not proven its claim for loss of profits arising from the lost sales of the non-YPS machines.

The plaintiff's market share as reflected in the industry market share data should be used

44 In addition, there was a further issue as to what was the plaintiff's overall market share, comprising of its market share for YPS and non-YPS machines. In the re-computations, the first defendant's expert had used the market share figures as published in the industry market share data in the Semiconductor Equipment Data Book 2015[29].[30] As explained by the first defendant, the publishers of the industry market share data used the respective sales revenue figures to determine the market share percentages of the various suppliers in the market.[31] The plaintiff's expert elected to compute its market share by reference to the ratio of the number of units of auto mould machines sold by the plaintiff against the total number of units of auto mould machines sold in that market for that year.[32] The plaintiff's expert explained that such a computation, as opposed to one based on sales figures, "would more relevantly reflect [the plaintiff's] market position (for the purposes of the Suit) as different manufacturers may have differing prices for their moulding machines".[33]

45 I decided that the market share figures as reflected in the industry market share data[34] were to be used. In other words, the plaintiff's market share was to be calculated based on the sales revenue and not the number of units sold. The first defendant pointed out that the parties had used and relied on these figures

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29 See Agreed Bundle of Documents (Volume 3 of 13) dated 8 March 2021 at pp 204–211.

30 1D Subs at para 105.

31 1D Subs at para 101.

32 2023 NERA Report at para 2.6 read with Pf's Subs at p 74.

33 Pf's Subs at p 73.

34 See Agreed Bundle of Documents (Volume 3 of 13) dated 8 March 2021 at pp 204–211.

in the industry market share data during the trial and in the cross-examinations of witnesses. The plaintiff's alternative method of calculating its market share based on the units sold was only presented after the close of the evidential hearings. I agreed with the first defendant that neither party had had the opportunity to test the veracity and meaningfulness of the plaintiff's assertions that its approach "would more relevantly reflect [the plaintiff's] market position" or to challenge the underlying numbers of units sold by the plaintiff.[35]

In years where there was no industry market share data, the plaintiff's market share would be an average of its respective regional market shares for the years 2011–2014

46 The industry market share data that the parties relied on in determining the plaintiff's overall market share in the auto mould press market only included data for the years 2011–2014, and a forecast for the year 2015. In contrast, the sale of IDEALmold machines manufactured by the first defendant at least partially during the Claim Period spanned the years 2007–2018. This meant that it was necessary to determine the number of Lost Initial Sales for that period, and in turn, market share data for that whole period was required. However, there was no *actual* market share data for the years 2007–2010 and 2015–2018.

47 It was not disputed that for the years 2011–2014, where the industry market share data was available, the re-computations would be based on those figures. The controversy related to the period where there was no such data, *ie*, the years 2007–2010 and 2015–2018.

48 In the re-computations, the plaintiff's expert extrapolated the plaintiff's market share for the auto mould press market in 2011 backwards all the way

[35] 1D Subs at para 107.

to 2007, and similarly extrapolated the plaintiff's market share for the auto mould press market in 2014 forwards all the way to 2018. In effect, the plaintiff's expert assumed that the market shares in the earlier or later years were the same as the reference year identified, *ie*, 2011 and 2014 respectively.[36] This general approach was applied to all the constituent regional markets save for the markets for "Japan" and "Worldwide", comprising of Morrocco and Brazil, with respect to the period of 2007–2010. At the Second Further Hearing, the plaintiff's counsel justified their general approach by explaining that the market share data was relatively stable and so it was the most reasonable to use the data of the year closest to the period to be estimated.

49 With respect to the markets for "Japan" and "Worldwide" for the period of 2007–2010, the plaintiff's expert relied on the plaintiff's actual market share in the wider market for moulding equipment[37].[38] At the Second Further Hearing, the plaintiff explained that it took the position that it was better to use the actual market share data, even though it related to the wider moulding market, than to extrapolate the data for the years 2007–2010.

50 The first defendant's expert applied the average market share for the auto mould press market for the years 2011–2014 onto the earlier and later years where there was no actual market share data.[39] According to the first defendant, this was the correct approach as it eliminated any specific fluctuations in market share movement based on specific circumstances or one-off events in any single

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36 2023 NERA Report at para 2.7.

37 See Agreed Bundle of Documents (Volume 3 of 13) dated 8 March 2021 at pp 185, 187, 189, 191.

38 2023 NERA Report at para 2.7 read with Pf's Subs at pp 73, 74.

39 1D's Subs at paras 94.

year.[40] In addition, the first defendant maintained that only the relevant auto mould equipment market share should be used and there was no basis for the plaintiff to rely on the data for the wider moulding equipment market.[41]

51 I held that the plaintiff's market share for the years without any actual industry market share data, *ie*, 2007–2010 and 2015–2018, should be based on the average market share of the plaintiff across the years where there was actual industry market share data, *ie*, 2011–2014. In my judgment, the first defendant was correct in asserting that such an approach would reduce the effect of extraneous factors specific to a single year and would result in a more accurate prediction of the plaintiff's market share.

52 In addition, I also rejected the plaintiff's suggestion to use the data relating to the plaintiff's market share in the wider market for moulding equipment for the "Japan" and "Worldwide" markets for the period of 2007–2010. I did so for two reasons. First, it was apparent that the plaintiff's market share in the wider moulding equipment market was generally reported as *higher* than its market share in the specific auto mould equipment market. By way of an example, the plaintiff's market share of the wider global moulding equipment market in 2011, 2012 and 2013 was reported as 42%,[42] 48% and 38%[43] respectively. However, the plaintiff's market share of the narrower global market for auto mould equipment in 2011, 2012 and 2013 was reported as 29.2%, 32.6% and 30.3% respectively.[44] Comparatively, the plaintiff's market

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40 1D's Subs at para 97.

41 1D's Subs at para 93.

42 Agreed Bundle of Documents (Volume 3 of 13) dated 8 March 2021 at p 191.

43 Agreed Bundle of Documents (Volume 3 of 13) dated 8 March 2021 at p 193.

44 See Agreed Bundle of Documents (Volume 3 of 13) dated 8 March 2021 at p 204.

share of the wider global moulding equipment market was higher than its market share of the narrower global auto mould equipment market for those three years. The same observation can be made of the pair of wider and narrower market shares in respect of the market for Japan. In fact, according to the first defendant's calculations, the data indicated that the wider market share was 1.25 to 1.47 times more than the narrower market share. Therefore, purely by observation, it was clear that the plaintiff's market share in the wider moulding equipment market would not be an accurate representation of its market share in the narrower auto mould equipment market. It would hence not be appropriate to refer to those figures.

53 Second, as the first defendant pointed out, the plaintiff's executive vice president, Mr Noboru Hayasaka, had testified that the wider moulding equipment market included the market for manual press machines.[45] This meant that unless the plaintiff could show that the wider moulding equipment market was broadly the same as the narrower auto mould market such that there was a close and almost perfect correlation, the market shares of the respective participants of the wider moulding equipment market will not necessarily be a good estimate of the same of the narrower auto mould market. The plaintiff indeed did not sufficiently establish this close correlation, and hence, reference to the market share data of the wider moulding equipment market would be improper.

The relevant market share should be calculated to one decimal place

54 At the Fourth Further Hearing, the parties sought to clarify to what specificity should the relevant market share be expressed. This was put in issue

[45] 1D's Subs at para 91.

as a consequence of my decision that the relevant market share was only of the plaintiff's YPS machines, which had to be deduced from the industry market share data.

55 In this regard, to be consistent with the approach taken to determining the number of machine sales that the plaintiff would have captured but for the first defendant's infringement of the former's patent (see above at [28]), I ordered at the Fourth Further Hearing that the relevant market share percentage should also be expressed to one decimal place. This would mean that the market share would be expressed in two or three significant figures. I also note that the industry market share data was already expressed in one decimal place.[46]

The unclassified development costs, unclassified disposal costs and unclassified valuation loss of the general additional costs of sales were to be excluded

56 In order to calculate the loss of profits from the Lost Initial Sales, it would be necessary to determine the profit that each YPS machine would have brought. This entailed considering, among other things, the costs associated with each machine, which included certain additional costs of sales. In this regard, it was undisputed that there were three categories of additional costs of sales, namely:

(a) costs of sales that were attributable specifically to the YPS machines;

(b) costs of sales that were attributable to some equipment other than the YPS machines; and

[46] See Agreed Bundle of Documents (Volume 3 of 13) dated 8 March 2021 at pp 204–211.

(c) costs of sales that were unable to be attributed to any specific category of equipment (the "general additional costs of sales").

57 The general additional costs of sales comprised of costs related to seven items, namely:[47]

(a) "cost difference, *etc*.",

(b) "cutlery manufacturing",

(c) "costs processing",

(d) "free of charge/scrap",

(e) "unclassified development costs",

(f) "unclassified disposal costs", and

(g) "unclassified valuation loss".

58 In *TOWA* at [97], I set out the items of costs in contention by the parties, which included "additional costs of sales – comprising unclassified development costs, unclassified disposal costs and unclassified valuation loss". These three items are costs that fell within the category of the general additional costs of sales. In answering the question as to whether such costs should be allowed, I found the following, in *TOWA* at [105]:

> … I am of the view that only the development cost, disposal cost and valuation cost that can be attributed to YPS machines are to be included. *All remaining costs are to be excluded from the calculations.* [emphasis added]

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47 Plaintiff's Skeletal Submissions dated 2 November 2023 ("Pf's Subs No. 2") at pp 18–19.

59 In the re-computations, the plaintiff's expert excluded the entire category of the general additional cost of sales.[48] The first defendant's expert included a proportion of the seven items comprising the general additional costs of sales.[49] According to the first defendant, the costs relating to the items of "cost difference, *etc*.", "cutlery manufacturing", "costs processing", "free of charge/scrap" were not in dispute between the parties and were never in controversy.[50] As to the items of "unclassified development costs", "unclassified disposal costs", and "unclassified valuation loss", the inclusion of a proportion of these costs were in accordance with my decision that "only the development cost, disposal cost and valuation cost that can be attributed to YPS machines are to be included".[51]

60 The differing approaches of the parties crystallised two issues related to my decision in *TOWA* at [105]: first, what was meant by "only the development cost, disposal cost and valuation cost that can be attributed to YPS machines are to be included" and consequently, second, what was meant by "all remaining costs are to be excluded from the calculations".

61 With respect to the first issue, I clarified at the Fourth Further Hearing that the three items of unclassified costs, *ie*, unclassified development costs, unclassified disposal costs, and unclassified valuation loss, were not costs that can be attributed to the YPS machines. By their very labels, these items of costs were unclassified precisely because they were each an amorphous collection of costs that applied to the whole of the plaintiff's product range. As the plaintiff's

48 Pf's Subs at paras 41–42.

49 Dfs' Subs at para 134.

50 Df's Subs at paras 130, 132, 135–141.

51 Pf's Subs No. 2 at p 20.

expert report of 15 February 2021 notes, these items of costs are "unlikely to include incremental costs of YPS [machines]" as the portion of those items of costs attributable to the YPS machine was "inconclusive" or there was "no record of directly recorded YPS [*sic*]".[52]

62 I pause to note that in the plaintiff's earlier expert report of 6 September 2019, the general additional costs of sales attributable to the YPS machine had indeed been estimated.[53] The first defendant's counsel directed me to this during the Fourth Further Hearing and argued that such estimation meant that those costs could be attributed to the YPS machine. However, upon a closer review, I found that this estimation was unreliable to begin with. As the report expressly noted, the general additional costs of sales were calculated in the same manner as the category for the additional costs of sales attributable specifically to the YPS machines. The plaintiff's expert justified this on the basis that the general additional costs of sales were "related to [the] production of all products including YPS machines but … there is no data to calculate the amount actually incurred for the production of the YPS machines".[54] In my judgment, there was no basis to calculate the general additional costs of sales in the same manner as the category for the additional costs of sales attributable specifically to the YPS machines. Indeed, there must be some further apportionment of the general additional costs of sales, which was not carried out in the calculations, precisely because it was not possible to do so reliably. The explanation offered by the plaintiff's expert was simply unsatisfactory and served to gloss over the differences between the two categories of additional costs. Thus, even though

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52 Expert Report of Hiroaki Ishigaki dated 15 February 2021 at para 5.5.2.2.

53 Supplemental Calculation Report of NERA Economic Consulting dated 6 September 2019 at para 4.2.2.

54 Supplemental Calculation Report of NERA Economic Consulting dated 6 September 2019 at para 4.2.2.

the plaintiff's expert had offered a method of including the general additional costs of sales, this was wholly deficient and did not resolve the central question of what portion of those costs could be attributed to the YPS machine.

63 Having so determined, it followed that, with respect to the second issue, the three items of unclassified costs, *ie*, unclassified development costs, unclassified disposal costs, and unclassified valuation loss, were to be considered as part of the remaining costs to be excluded from the calculations. Separately, I also clarified at the First Further Hearing that the term "remaining costs" must be read in the context of the judgment. "Remaining costs" referred to the items listed in TOWA at [97(b)], *ie*, unclassified development costs, unclassified disposal costs and unclassified valuation loss. The term did not relate to costs items that were not in contention, such as the proportional cost of the four components of the category of the general additional costs that was accounted for by the first defendant's expert. The issue of whether those costs should or should not be included was never before the court, precisely because they were undisputed. Hence, there was no basis to exclude those undisputed additional costs in the computation of damages.

64 In short, where the general additional costs of sales were concerned, my judgment in *TOWA* did not affect the inclusion and/or exclusion of any item or portion thereof that the parties had not disputed. As for the items of unclassified development costs, unclassified disposal costs and unclassified valuation loss, these costs should be excluded from the computation of damages.

Loss of profits arising from the Lost Additional Sales

65 I next set out all the issues related to the damages to be awarded to the plaintiff for loss of profits arising from the Lost Additional Sales, *ie*, the loss of sales of the additional parts and provision of aftersales products and services.

The plaintiff was entitled to loss of profits arising from the lost sales of additional parts in respect of the YPS machines it would have sold during the loss-making years

66 To recapitulate, I held in *TOWA* that the plaintiff was entitled to recover the loss of profits arising from its Lost Initial Sales, as well as its Lost Additional Sales. In addition, regarding the Lost Initial Sales, I clarified in *TOWA* at [92] and [117(c)] that no profit should be calculated for the years which were loss-making for the plaintiff:

> 92 … I, however, agree that in the two loss-making years, it would not make sense to suggest that Towa's losses would be magnified should it have been able to sell a greater number of YPS machines. Therefore, even if Towa had captured some or all of the But-for Sales, no profit should be calculated for years which are loss-making.
>
> …
>
> 117 For Towa's claim for profits lost by Towa arising from lost sales of YPS machines:
>
> …
>
> (c) … However, no profit from But-for Sales should be calculated for years which are found to be loss-making.

67 The parties disagreed on the effect of this holding on the calculation of the loss of profits from *the lost sales of additional parts* related to the Lost Initial Sales in the loss-making years. In the re-computations, the plaintiff's expert included the lost sales of additional parts related to the Lost Initial Sales that

would have been made in the loss-making years.[55] This was on the basis that the plaintiff would still have captured part of the But-for Sales in the loss-making years, albeit the plaintiff would not be able to recover any profit from those initial sales.[56] The first defendant's expert excluded any lost sales of additional parts related to the Lost Initial Sales that would have been made in the loss-making years.[57] According to the first defendant, the Lost Initial Sales that would have been made in the loss-making years "were zerorised [*sic*] in accordance with [*TOWA*]" and excluding the Lost Additional Sales was a "natural effect of zerorising [*sic*] the loss-making Initial Sales".[58] In essence, its position was that "[s]ince there were no Initial Sales, there can be no follow-on Additional Sales."[59]

68 I held that the plaintiff was entitled to recover the loss of profits arising from the lost sales of additional parts in respect of the Lost Initial Sales it would have made during the loss-making years.

69 The linchpin of the first defendant's argument was that the plaintiff did not capture any of the But-for Sales in the loss-making years. This, however, was not what I had held. Rather, I had held that "no profit should be calculated for years which are loss-making". This was because the plaintiff's claim was for the loss of profit arising from the sale of YPS machines that it would have made; if the plaintiff had not made any profit from those sales, as was the case during the loss-making years, there would be no profits to be claimed. It would

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55 Pf's Subs at paras 28, 31.

56 Pf's Subs at para 31.

57 Df's Subs at para 121.

58 Df's Subs at para 121.

59 Df's Subs at para 124.

be incorrect to equate this holding to a finding that the plaintiff would not have captured any of the But-for Sales in those years. Therefore, it was erroneous for the first defendant to have zeroed the number of sales of YPS machines that the plaintiff would have made in the loss-making years, which had the consequent effect of disentitling the plaintiff from recovering the loss of profits arising from the lost sales of additional parts in respect of those machines.

70 Hence, at the risk of being repetitive, I found that the plaintiff would have captured part of the But-for Sales during the loss-making years in the But-for Scenario. However, because those sales did not yield any profits, there were no profits to be awarded for the loss of those initial sales. The plaintiff was, nevertheless, entitled to recover its loss of profits from the future sales of additional parts in respect of the YPS machines it would have sold during those loss-making years.

In years where there was no actual data relating to the sales of additional parts, an average of the period from December 2011 to 2018 should be used

71 In relation to calculating the loss of profits arising from the lost sales of additional parts, I made the following holdings in *TOWA* at [78] and [118(c)]:

> 78 First, I find that, as Mr Chan has rightly noted, *the significant decrease in the sales of Additional Parts after November 2011 should be taken into account in the computation of lost profits*.
>
> …
>
> 118 For Towa's claim for lost profits arising from aftersales products and services and Additional Sales:
>
> …
>
> (c) The profits arising from the Additional Sales be awarded to Towa. *The decrease in additional sales of press modules, moulds and other parts after November 2011 should be taken into account in the calculation of profits which Towa would earn from the additional sales*.

[emphasis added]

72 In *TOWA* at [79], I also held that the estimated life expectancy of the YPS machine should be ten years. The last infringing IDEALmould machine was sold in 2018. But for the sale of this machine, the plaintiff would have been able to make a sale of its YPS machine(s) (in accordance with the relevant market share) in that year, which would have had a life expectancy till 2028. This meant that the plaintiff would be entitled to some loss of profit – arising from the lost sales of additional parts related to the initial sale(s) of its YPS machine in 2018 – till 2028. However, as only data relating to the sales of additional parts was available for the period up to 2018, the sales of additional parts and the profits to be derived from it beyond 2018 had to be estimated. The controversy between the parties was how this exercise of estimation was to be carried out.

73 In the re-computations, the plaintiff's expert used an average of sales and an average of cost of sales for the years 2008–2018 to estimate the profit in the years after 2018.[60] According to the plaintiff's expert, this was consistent with my judgment in *TOWA* that the decrease in additional sales of parts after November 2011 should be considered (see above at [71]).[61]

74 The first defendant's expert took a much more restrictive approach. Unlike the plaintiff's expert that used much of the available data, the first defendant's expert took the average of the three most recent years for which data was available, *ie*, 2015–2018.[62] According to the first defendant, this data

60 2023 NERA Report at para 4.3.2(b).

61 2023 NERA Report at para 4.3.2(b).

62 1D's Subs at para 128.

was "more representative to estimate the trend in the following years".[63] The first defendant also submitted that the plaintiff's approach took no account of the significant decrease in the sales of additional parts after November 2011 and should therefore be rejected.[64]

75 The question therefore was how to reliably estimate the loss of profit arising from the lost sales of additional parts. In my judgment, neither of the parties' approaches were desirable.

76 With respect to the plaintiff's approach, I found that it was over-inclusive to include data for the period prior to November 2011. As I had noted in *TOWA* at [78], there was a significant decrease in the sales of additional parts after November 2011, which represented a shift in the overall trend. This being the case, the data for the period prior to November 2011 would be wholly irrelevant to estimating the sales of additional parts moving forward. Hence, the plaintiff's reference to that data was flawed.

77 With respect to the first defendant's approach, I found that it was under-inclusive. There was no principled basis to focus on only the *three* most recent years to extrapolate what profits the plaintiff would have made in the period after 2018. In fact, I noted that for two of those years, there were no sales of additional parts. This would undeniably distort the average sales of those three years, resulting in an unreliable estimate of the sales for each year in the period after 2018.

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63 1D's Subs at para 128.

64 1D's Subs at para 129.

78 I therefore rejected both approaches. In my judgment, it was more reliable to apply the averages of the sales and costs of sales of the period from December 2011 to 2018, *ie*, the period after November 2011 for which the data was available. I found that the sales for each year in this period was *relatively* stable, and thus it was appropriate to consider these years together. This was also consistent with my holding that the decrease in sales of additional parts after November 2011 should be accounted for. For the avoidance of doubt, this only applies in respect of years where no actual data was available. Conversely, when calculating the loss of profits arising from lost sales of additional parts in the years where actual data was available, the data in those years would apply to the calculation of profits in the same years.

In years where the sales of additional parts attracted a loss, the losses were to be zeroed

79 There was a further problem related to the computation for the loss of profits arising from the lost sales of additional parts. To provide some context, there were two categories of additional parts sold by the plaintiff: (a) modules; and (b) moulds and other parts. For each category of additional parts, there were several years where the plaintiff did not make a profit, and instead made a loss from the sale of those additional parts. The issue therefore was whether these losses should feature in the re-computation.

80 I momentarily digress to note that a similar issue had arisen in respect of the claim for loss of profits arising from the Lost Initial Sales. In that context, there were two years where the plaintiff had suffered losses from the sale of its YPS machines. In *TOWA* at [92] and [117(c)], I held that no profit should be calculated for years which were loss-making for the plaintiff (see above at [66]). As I have explained, this was because the plaintiff's claim was for the loss of

profit arising from the sale of the YPS machines that it would have made; if the plaintiff had not made any profit from those sales, as was the case during the loss-making years, there would be no profits to be claimed (see above at [69]).

81 Turning back to the issue at hand, the plaintiff's position was that although I had made no finding on this issue in *TOWA*, the principle that applied in the analogous scenario outlined above must apply in this case as well.[65] In other words, no profit should be calculated for those years and the loss should be zeroed. Further, if the losses were to be included as is, *ie*, as a negative number, it would effectively mean that the plaintiff was "compensating" the first defendant for its infringement.[66] The first defendant's position was that the losses should not be disregarded.[67]

82 I accepted the plaintiff's approach. For the years in which there was no profit from either category of additional sales, the plaintiff's claim for loss of profit for that category would be zero and not negative. In my judgment, this was consistent with the common principle that I had applied in respect of the claim for loss of profit arising from Lost Initial Sales in loss-making years (see above at [80]).

83 For completeness, I noted that these zeroed losses, particularly for the year 2013, would also feature in the calculation of the loss of profits arising from the lost sales of additional parts for years where there was no data available. I found it equally appropriate to zero the losses in this context on account of the fact that the loss-making years were, as the first defendant's

65 Pf's Subs No. 2 at p 13.

66 Pf's Subs No. 2 at p 14.

67 Pf's Subs No. 2 at p 16.

counsel put it in the course of the Further Hearings, "extraordinary years". I did not find it fair to impose the extent of the loss for such extraordinary years solely onto the plaintiff. However, I found it equally appropriate not to exclude those year(s) entirely from the calculation for the forecasted loss of profits, and rather to zero the loss in order to give recognition to the fact that those years would, in fact, bring down the average profits of the period.

The plaintiff was entitled to loss of profits arising from the lost provision of aftersales services in Japan only

84 The plaintiff had claimed for loss of profits from the lost provision of aftersales services by itself on the Lost Initial Sales. In this respect, I held, in *TOWA* at [65], that the plaintiff must establish that it had wholly owned subsidiaries which provided aftersales services on YPS machines in the various markets where YPS machines have been sold. On the evidence, I found, in *TOWA* at [65], that this was established: it was undisputed that aftersales services were provided by the plaintiff's subsidiary, TOWATEC Co., Ltd ("TOWATEC"), in the Japanese market, and in respect of other markets, the plaintiff's annual reports disclosed other wholly owned subsidiaries.

85 On top of this, I held, in *TOWA* at [66], that it was necessary for the plaintiff to establish that these subsidiaries would be more likely than not to provide aftersales services on the YPS machines which it would have sold. On the evidence, I found, in *TOWA* at [69], that there was insufficient evidence to establish that any of the plaintiff's subsidiaries had serviced machines outside of Japan. To this end, in *TOWA* at [70], I also rejected the suggestion that TOWATEC's profits on the provision of aftersales services to YPS machines should be used as a benchmark for the profits on the provision of aftersales services of the plaintiff's other subsidiaries.

86 In *TOWA* at [71], I held the following in relation to TOWATEC's provision of aftersales services:

> In my view, the available evidence is insufficient to suggest that a substantial majority of YPS customers bought aftersales services from TOWATEC. In light of the evidence available, I think it is correct that Mr Chan [of PWC, the first defendant's expert] had considered only these seven customers who can be established to have sought aftersales servicing for YPS machines when determining the percentage of But-for Sales which could generate aftersales profits for TOWATEC.

87 Ultimately, in *TOWA* at [118(b)], I held:

> 118 For [the plaintiff's] claim for lost profits arising from aftersales products and services and Additional Sales:
>
> …
>
> (b) When determining TOWATEC's claim for aftersales profits, the calculations should consider only the seven customers who can be established to have sought aftersales servicing for YPS machines.

88 Before moving to the controversy surrounding these findings, I pause to set out the broader context behind my holding that only seven particular customers of TOWATEC should be considered when calculating the loss of profits. Based on the evidence, TOWATEC provided aftersales services to other customers, beyond these seven identified customers, as well. However, there was no distinction made in the records as to whether these pertained to the servicing of a YPS machine or a non-YPS machine. Be that as it may, it was established of all the relevant customers that *may* have received aftersales services from TOWATEC for a YPS machine, seven particular customers had purchased only YPS machine(s). As such, it was a reasonable inference to make that those seven customers' engagement of TOWATEC's aftersales services must have been in respect of a YPS machine since this was the only type of machine the plaintiff had sold to them. Conversely, in respect of the other

customers, there was insufficient evidence that the plaintiff had provided aftersales services on any YPS machines that those customers owned.

89 Turning back to the issue at hand, the parties were unable to agree as to what approach should be employed to calculate the plaintiff's loss of profits from the lost provision of aftersales services. The plaintiff submitted that based on my remarks in *TOWA* at [71], I had determined that the approach taken by Mr Chan of PWC in computing such aftersales profits was the correct approach to the computation.[68] According to the plaintiff, Mr Chan's approach was to first determine how many YPS machines – which the plaintiff had serviced – had been sold to the seven customers during the Claim Period, and then, to express this number as a percentage of the *total* number of YPS machines sold by the plaintiff during the same period. This yielded a percentage of 9.9%. In the re-computation, the plaintiff's expert sought to apply this percentage of 9.9% to the total number of But-for Sales the plaintiff would have captured (which included sales in Japan and outside of Japan).[69]

90 The error in the plaintiff's approach was that its re-computation was not specific to the Japanese market. Since I had held that there was insufficient evidence to establish that any of the plaintiff's subsidiaries had serviced machines outside of Japan (see above at [85]), it was improper for the plaintiff to (a) express the number of YPS machines sold during the Claim Period in Japan that TOWATEC had provided aftersales services for as a percentage of *the **total** number of YPS machines sold in the same period*; and (b) subsequently applying this percentage to *the **total** number of But-for Sales the plaintiff would have captured which included sales outside of Japan*. Instead, the re-

68 Pf's Subs at paras 33, 35.

69 Pf's Subs at para 35.

computations should only have taken into account the actual sales and the But-for Sales that the plaintiff would have captured *in the Japanese* market.

91 In sum, my remarks as to the approach to be taken when calculating the plaintiff's loss of profits arising from the lost provision of aftersales services in *TOWA* at [71] and [118(b)] applied only in respect of the plaintiff's share of the But-for Sales in Japan.

The discount rate to the loss of profits arising from the Lost Additional Sales applied from 14 April 2023

92 In *TOWA* at [110] and [120(c)], I held that:

> 110 In my view, *the appropriate date from which the discount rate should be applied would be the date of judgment of the assessment*, at which point [the plaintiff] will begin to enjoy the accelerated receipt which forms the basis for the application of the 10% discount.
>
> …
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> 120 I also find that:
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> …
>
> (c) A discount rate of 10% should be applied to the additional sales and aftersales beginning *from the date of judgment of the assessment.*
>
> [emphasis added]

93 Notwithstanding the lack of ambiguity as to when the discount rate for the additional sales applied from, the parties could not agree on this issue. This was primarily because the plaintiff's expert had applied the discount rate from 22 December 2016 in his re-computation.[70] In response, the first defendant sought to apply the discount rate from the same day, *ie* 22 December 2016.[71] I

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70 2023 NERA Report at paras 3.2.6, 4.2.7.

71 1D's Subs at para 156.

should highlight that 22 December 2016 was the date of my decision in respect of the first defendant's liability for the patent infringement.

94 At the Second Further Hearing, the counsel for the plaintiff clarified that the plaintiff intended to rely on my express holding in *TOWA* at [110] and admitted that the plaintiff's expert had made an error.

95 I decided that my holding in *TOWA* at [110] and [120(c)] was to stand; the discount rate should be applied from the date of the judgment of the assessment, *ie*, 14 April 2023. As I explained in *TOWA*, the principle behind applying a discount rate was to reflect the fact that the plaintiff would be able to enjoy the accelerated receipt of profits that it would have received from sales in the future, post-judgment.

Interests and costs

96 Finally, I set out all the issues related to the issue of interests and costs.

Pre-judgment interest at 5.33% per annum from 19 April 2013 to 15 March 2024, and post-judgment interest at 5.33% per annum from 15 March 2024 to the date of payment of the judgment sum applied

97 On the issue of the interest rate, the plaintiff submitted that the pre- and post-judgment interest rates to apply would both be 5.33% per annum. The first defendant did not object to this. I so ordered.

98 As to the period of interest, the plaintiff submitted that pre-judgment interest should run from 19 April 2013, being the date of the writ, to 22 December 2016, being the date of my judgment on liability. Consequently, the plaintiff submitted that post-judgment interest should run from 22 December 2016 until the date of payment of the judgment sum. Conversely,

the first defendant argued that post-judgment interest should run from the date of the Fifth Further Hearing, *ie*, 15 March 2024, when I had formally recorded down the judgment sum.

99 I agreed with the first defendant's submission. The date of the Fifth Further Hearing was, strictly speaking, the date of the final judgment since I had determined the judgment sum due to the plaintiff only then. Further, based on what was before me then, I noted that there was no prejudice to either party and no practical difference on where the delineating line between pre- and post-judgment interest laid since the rates of pre- and post-judgment interest were both 5.33% per annum. Accordingly, at the Fifth Further Hearing, I ordered that pre-judgment interest should run from 19 April 2013 to 15 March 2024, and post-judgment interest should run from 15 March 2024 to the date of payment of the judgment sum.

100 On 20 March 2024, the counsel for the first defendant wrote to the court to point out that my order that the pre-judgment interest ran to *15 March 2024* was inconsistent with (a) my holding in *TOWA* at [115] and (b) what the plaintiff had sought at the hearing. For convenience, I reproduce my holding in *TOWA* at [115]:

> … I hence order that the pre-judgment interest should run from the date of the writ till *22 December 2016* and be fixed at the default rate of 5.33%. [emphasis added]

101 At the Sixth Further Hearing, the first defendant clarified that its position was that pre-judgment interest should run till 22 December 2016 and post-judgment interest should commence from 15 March 2024. In that regard, the first defendant submitted that there was no dispute between the parties as to when the pre-judgment interest should run till, in view of the plaintiff's submission at the Fifth Further Hearing.

102 Accepting the first defendant's submission as to when pre- and post-judgment interest should apply would effectively mean that the plaintiff would be deprived of any interest in the intervening period of 22 December 2016–15 March 2024. There was no reason why the plaintiff should be prejudiced in this manner. I therefore rejected the first defendant's submission and opted to award interest on a continuous basis. As I had previously found in *TOWA* at [114], there was no unjustifiable delay during the trial of this action, including the proceedings related to the assessment of damages, and the plaintiff's entitlement to interest should not be reduced or removed.

103 As such, the question that followed was when should the pre-judgment interest end and when should the post-judgment interest commence. As I had earlier observed (see above at [99]), there was no practical difference as the pre- and post-judgment interest were both at a rate of 5.33% per annum. However, at the Sixth Further Hearing, I was informed by the first defendant's counsel that this specific determination was material to the issue of costs as there had been an offer to settle made by one of the parties. This meant that the absolute quantum of pre-judgment interest would differ, depending on when the pre-judgment interest would stop running, and in turn, influence the assessment of the offer to settle.

104 As I had alluded to (see above at [9]), post-judgment interest should run from 15 March 2024 as that was the date when I had issued final judgment in the sum of ¥386,942,396 in favour of the plaintiff. Order 42 r 12 of the Rules of Court (2014 Rev Ed) ("ROC 2014") prescribes that post-judgment interest shall be "calculated from the date of judgment until the judgment is satisfied". Order 42 r 7 of ROC 2014 clarifies that a judgment "takes effect from the day of its date", and "a judgment is dated as of the day on which it is pronounced, given or made". I had pronounced the final judgment on damages, which

included the quantum of damages payable, on 15 March 2024. Hence, I ordered that my decision at the Fifth Further Hearing regarding pre- and post-judgment interests was to stand: pre-judgment interest should run from 19 April 2013 to 15 March 2024, and post-judgment interest from 15 March 2024 to the date of payment of the judgment sum. To the extent that this was not consistent with *TOWA* at [114], [115] and/or [120(d)], my decision at the Fifth Further Hearing was a variation of the decision in *TOWA*. This variation was necessary given the lapse of time from the release of my judgment on liability on 22 December 2016, which was partly due to the parties' appeal and partly due to the technical, and thus lengthy, tranche concerning the assessment of damages.

Interest should not be computed as part of the damages

105 In the re-computation, the plaintiff's expert had included the interest payable[72] while the first defendant's expert did not include any interest in the computation.[73]

106 To recapitulate, I had issued the following directions in *TOWA* at [121]:

> Based on the principles outlined in this judgment, parties are to provide an agreed re-computation of the *damages* to be awarded to Towa by 12 May 2023. If parties are unable to agree on the *quantum of damages*, they are to write in to court for a final determination. [emphasis added]

The directions were unequivocal in that the re-computation related only to *damages*.

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72 2023 NERA Report at paras 3.2.5, 4.2.6.

73 2023 PWC Report at para 9.

107 In this regard, the dispute between the parties was more apparent than real. As I had pointed out at the first hearing, it is trite that interest is separate from damages. The plaintiff's counsel accepted this. There was thus no controversy that the re-computations related only to damages and did not include any sums due in the form of interest.

Issue of costs reserved

108 On the issue of costs, the plaintiff submitted that costs should be reserved pending any potential appeal. The first defendant did not object to this. I so ordered at the Fifth Further Hearing that the issue of costs be reserved pending any potential appeal, with liberty to apply.

Conclusion

109 In conclusion, across the Further Hearings, I held the following:

(a) In relation to the claim for loss of profits arising from the Lost Initial Sales, *ie*, lost sales of the plaintiff's auto mould machines,

(i) the maximum number of But-for Sales should be "339";

(ii) the Hong Kong market was part of the market labelled "China";

(iii) the number of machine sales which the plaintiff would have captured in the But-for Scenario should be calculated to one decimal place;

(iv) only the portion of the plaintiff's market share relating to its YPS machines should be used;

(v) the plaintiff's market share as reflected in the industry market share data should be used;

(vi) in years where there was no industry market share data, the plaintiff's market share would be an average of its respective regional market shares for the years 2011–2014;

(vii) the relevant market share should be calculated to one decimal place;

(viii) the general additional costs of sales were to be excluded;

(b) In relation to the claim for loss of profits arising from the Lost Additional Sales, *ie*, the lost sales of the additional parts and the provision of aftersales products and services,

(i) the plaintiff was entitled to the loss of profits arising from the lost sales of additional parts in respect of the YPS machines it would have sold during the loss-making years;

(ii) in years where there was no actual data relating to the sales of additional parts, an average of the period of December 2011 to 2018 should be used;

(iii) in years where the sales of additional parts attracted a loss, the losses were to be zeroed;

(iv) the plaintiff was entitled to loss of profits arising from the lost provision of aftersales services in Japan only;

(v) the discount rate to the loss of profits arising from the Lost Additional Sales applied from 14 April 2023;

(c) In relation to interests and costs,

(i) pre-judgment interest at 5.33% per annum from 19 April 2013 to 15 March 2024, and post-judgment interest at 5.33% per annum from 15 March 2024 to the date of payment of the judgment sum applied;

(ii) interest should not be computed as part of the damages; and

(iii) the issue of costs was reserved.

Lee Seiu Kin
Senior Judge

Long Ai Ming, Low Chai Chong, Foo Maw Jiun, Chia Jung Yeong Mark and Ng Ah Sock, Angie (Huang Ashu) (Dentons Rodyk & Davidson LLP) for the plaintiff;
Lim Ying Sin Daniel and Lakshmanan s/o Anbarazan (Joyce A Tan & Partners LLC) for the first and second defendants.