



*Department of Economics and Finance*  
*Thesis in Management*

**Beating the odds: International Game Technology PLC**

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## **Abstract**

Many M&A transactions often fail to create value for the acquiring shareholders. In this thesis, the primary firm valuation methodologies were summarized, and the most common method was applied to give a value to the acquired company, and to provide two expected values for the stock price of the new combined entity in a relevant time horizon, the first obtained without including the expected synergies from the merger, and the second by accounting for them. The resulting expected stock prices proved that, given the assumptions used in this study, the analyzed firm is supposed to substantially grow in a medium-term horizon, and the stock value is expected to increase, possibly over-performing the relevant market index. This consideration was in line with the evolution of the combined entity stock price one year after the merger.

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## **Introduction**

The aim of the thesis is to analyze a case of cross-border merger between a US and an Italian firm comprehensively, both firms operating in the gaming industry, and to discuss the main reasons that justified the consolidation between the two. Furthermore, the expected stock price of IGT before the merger and the one of the new combined entity (without and with expected synergies) are computed and compared to the price paid for the acquisition and the recent evolution of the stock price.

The study is divided into three main parts. The first one is a review of the relevant literature regarding corporate valuation and M&A. Some of the topics covered in this part are later applied to the analysis of the merger.

The second part is divided into a two-section analysis. Firstly, the study explores the gaming industry in which both pre-merger companies operated, together with the competitive environments of the Italian and US gaming sectors, with a particular focus on the expected trends for the overall industry for the next few years. Secondly, both pre-merger companies and the new combined entity are analyzed from a strategic and financial point of view.

In the third part, valuations of the pre-merger IGT and the new entity without and with expected synergies are carried out, with the help of all relevant and available public information on GTECH S.p.A. and IGT before the merger (as both companies were publicly listed), and on IGT PLC. The synergies forecasted by IGT PLC's management are included in the company valuation to better picture the expected evolution of the stock price, and the medium-term perspective of the merger as a value-creating activity.

In the closing section, the main findings of this study are reviewed, and a personal interpretation of the available results regarding the merger is given.

## What are M&As?

Milton Friedman (1962 and 1970) states that the goal of a firm, which engages in open and free competition, is to create value for the shareholders by increasing its profits. There is not a single recipe for success in pursuing such a goal and the strategic decisions that the firm's management can take ultimately depend on two factors: the time horizon and willingness to risk.

Among the different available strategies, companies can consider Mergers and Acquisitions as concrete strategies to acquire more solid leadership positions (e.g. higher market power), product and geographical diversification (also exploiting market imperfections if available). To achieve a joint market valuation greater than the sum of the stand-alone valuations of the pre - operation companies, M&A can unlock hidden value, by creating horizontal, vertical or functional synergies, and achieving economies of scale within the productive process and R&D best practices.

Therefore, M&A operations can be consistent and sophisticated strategies, which allow the management team of both the acquiring and target company to create value for the investors, but their success depends on the correct estimation of the potential benefits and costs. Weak and inconsistent evaluation can justify the creation of merged entities with shareholder value less than the sum of the stand-alone pre – operation companies and can foster the destruction of value (Damodaran, 2005).

When it comes to creating value, the standard analysis focuses on defining and calculating the synergies achieved with M&A operations. According to Ansoff (1965 and 1988), synergies can produce combined returns on resources greater than the sum of individual parts (the  $2 + 2 = 5$  concept). Chakravarthy and Lorange (1991) write that synergies are the means through which each cooperating entity can reinforce its competitive position, by sharing capabilities. Finally, according to Damodaran (2005), synergies are the value added generated by combining two entities, which create opportunities impossible to achieve if the firms were operating separately. In agreement with the same paper, they will be used in this study to calculate the direction and magnitude of the effect on the expected stock price of the combined entity in the medium-term.

### *Valuation Methodologies*

As there is not a unique valuation method, because no approach perfectly fits every existing type of companies, the best-fit model should be adopted for a corporate valuation, depending on the infor-

mation available, current market and business scenario and future perspectives. The available methods to estimate the value of a firm can be summarized in two main approaches: the Discounted Cash-Flow approaches (DCF), and Relative Valuation.

The DCF methodologies consist of discounting the forecasted future cash flows to their present value by the most appropriate rate reflecting their level of risk. In the majority of the cases (Kaplan and Ruback, 1996), this measure is represented by the weighted average cost of capital or WACC, but there are also other approaches (Oded, J. 2007), among which is of particular interest the Adjusted Present Value, APV (Myers, 1974, and Peccati, 1991). With regards to the Relative Valuation, which is usually used when data for the DCF are lacking, the most representative method is the Valuation by Multiples, in which particular multiples of the company of interest are compared to those of similar benchmark companies to find the implied value (Lie and Lie, 2002). In this case, most of the valuation's accuracy depends on choosing the most suitable multiple.

In this study, the DCF valuation approach will be applied, with the aim of receiving from all the available public information two coherent valuations, one for the pre-merger IGT and the other for the post-merger combined entity. In fact, if correctly structured with the essential data and assumptions, the approaches should convey a reliable estimation of the expected stock price in the medium-term.

### Discounted Cash Flows (DCF)

According to Luehrman (1997), first of all, nominal and real future cash flows must be estimated, together with the most reasonable expectations for growth horizon, rates, and ROC. To make the valuation the most reliable as possible, oversimplifications regarding the growth rates and periods should be avoided (Ohlson, JA and Zhang, XJ, 1999).

Once the cash flows have been determined, the discount rate is usually estimated to be the weighted average cost of capital (WACC), which is the combination of the after-tax cost of debt and cost of equity, weighted by the portion of the capital structure they represent (Luehrman, 1997). According to Copeland, T. et al (1990), the required cost of capital, which will be used for the evaluation of the operation of interest, should be considered as the opportunity cost of investing in a similar risk project. The formula used to compute the WACC is:

$$\text{WACC} = \frac{E}{D + E} (r_e) + \frac{D}{D + E} (r_d)(1 - t)$$

Where:

E = market value of equity

D = market value of debt

$r_e$  = cost of equity

$r_d$  = cost of debt

t = corporate tax rate

As it can be seen from the above equation, in the WACC's computation both the cost of equity and cost of debt are bundled together (Modigliani, Miller, 1963). The cost of debt is usually the sum of a risk-free rate plus a default-risk spread, which should represent the probability of default associated with the company. With regards to the cost of equity, the prevalent theory is the Capital Asset Pricing Model (CAPM), which is a model associating the required rate of an asset to be inserted into a well-diversified portfolio, including in the computation the asset's non-diversifiable risk (Damodaran, 2002). So, as in the formulation by Sharpe (1964), Lintner (1965), Mossin (1966), the CAPM identifies with good approximation the sensitivity of the expected asset returns to the expected market returns as showed by the slope coefficient,  $\beta$ , which is summarized by the below formula:

$$\beta_s = \frac{E(r_s) - r_f}{E(r_m) - r_f}$$

$\beta_s$  = Beta for your investment  
 $E(r_s)$  = Expected Return from your investment  
 $E(r_m)$  = Expected Return from the Market  
 $r_f$  = Risk-Free Return

The model then defines the relationship between the investment's risk premium and the market risk premium, as in the below formula:

$$r_e = r_f + \beta(r_m - r_f)$$

where

$r_e$  = Required Return on Equity

$r_f$  = Risk-free Rate

$r_m$  = Market Return

$\beta$  = Stock Beta

$(r_m - r_f)$  = Equity Risk Premium

An alternative model is the one described by Fama and French (1993), in which the authors added two factors to the CAPM to reflect a portfolio's exposure to two specific classes of stocks.



With regards to the risk-free rate, it can be defined as the default risk-free investment's expected return, as it is proved by the cost of equity being equal to the risk-free rate when  $\beta$  is zero. Finally, the market risk premium signifies the difference between the expected market return ( $R_m$ ), computed from the most comprehensive market index (Damodaran, 2002), and the risk-free rate ( $R_f$ ). As stated by Kaplan & Ruback (1996), it should include in the computation the arithmetic average of historical risk premium. To avoid the use of an inaccurate proxy of the market portfolio, Damodaran (2002) says the default spread determined by the country rating should be “*multiplied by the average of equity to bond market volatility and then added to the historical risk premium.*”

In the Free Cash Flows to the Firm model, the value of a leveraged company can be estimated by discounting the unlevered cash flows to the firm at the company's WACC, the discount rate adjusted for tax effects (Massari, M. et al, 2007), according to the below formula:

$$\sum_{t=1}^n \frac{FCFF_t}{(1 + WACC_g)^t} + \frac{\left[ \frac{FCFF_{n+1}}{(WACC_{st} - g_n)} \right]}{(1 + WACC_g)^n}$$

To use such a formula, two steps must be undertaken: firstly the present value of cash flows up to the horizon date of interest,  $n$ , should be computed; and secondly, the present value of cash flows beyond  $n$  should be computed. The second step represents the terminal value and to be calculated, one must include the Terminal Growth Rate (TGR) as in the above formula (where it is included with the letter  $g$ ).

For the computation of the FCFF, Damodaran (2005) considers the quantity of cash made by the company after taxes, expenses and CapEx, but before dividends and interests to stakeholders, as in the below formula:

$$FCFF = EBIT * (1-T) - CapEx + Depreciation \& Amortization - \Delta NWC \pm other Non-cash items$$

With regards to terminal value, as in the Damodaran (2005) formulation, it is computed by adjusting the capital cash flow in the forecasted last year (terminal year) for the difference between WACC and the expected TGR. The measure is very sensitive to changes in the TGR and WACC (Oded, J., 2007). Thus they must be valued carefully. In this study, the medium-term assumed growth rate of revenues reported by the IGT PLC's management is used as a proxy for the TGR.

## Adjusted Present Value (APV)

Other methods can be applied instead of those using the WACC because this measure can become inefficient with incredibly complex firm capital structures. The most widespread alternative method is the Adjusted Present Value (APV), also called “valuation in parts” (Myers, 1974, and Peccati, 1991). In fact, for firms in a steady state, WACC and APV approaches provide the same results, but a clear difference can emerge with growing businesses, making the WACC approach inconsistent (Massari, M. et al, 2007).

The APV method can prove to be less vulnerable to valuation errors and, according to Myers (1974), it also provides the value of a firm’s assets, by summing two different classes of cash flows. These are the real cash flows coming from the company’s operations, and those deriving from the way the firm financed its activities (agency costs, subsidies, issue costs, interest tax shields, the cost of financial distress and others). It is this second part that estimates the value added provided by a capital structure including debt, therefore creating a difference between the debt + equity firm and the only equity firm (Kaplan & Ruback, 1996). However, according to Damodaran (2005), to make the computation smoother than the extremely complex one including all financing effects, it should sometimes be paid attention only to the interest tax shields.

Within the above framework, the first step that must be taken is to provide a valuation for the only equity, unlevered, side of the firm, which is given by the below formula:

$$\text{Value of the Unlevered Firm (Vu)} = \sum_{i=1}^n \frac{FCFF_i}{(1+R_u)^i} + \frac{FCFF_{n+1}/(R_u - TGR)}{(1+R_u)^n}$$

The only difference from the FCFF model is the discount rate to be applied as the APV method uses the unlevered cost of equity ( $R_u$ ). Then, the second step is to find an accurate estimate of the value associated to how the firm finances itself, which should be positive as otherwise the management would prefer an only equity firm (Luehrman, 1997). The Value of the Tax Shields (VTS) is computed with the below formula:

$$\text{Value of Tax Shields} = \sum_{i=1}^n \frac{D_i \times R_d \times T_c}{(1+R_d)^i} + \frac{D_i \times R_d \times T_c / (R_d - g)}{(1+R_d)^n}$$

where (Di) represents the net debt, (Rd) represents the levered cost of equity, (Tc) represents the corporate tax rate, and g represents the perpetual tax shield growth. Therefore, the final result of this procedure is:

$$\text{Firm Value} = V_u + [1 - P(D)] \times VTS$$

where the VTS is multiplied by the probability of no default in that VTS only makes sense if the firm is operating. A further part consisting of the cost of financial distress multiplied by the probability of default could be subtracted to the firm value above to make the measure more reliable.

There is no accord over which method is the most reliable, but there is broad consensus that the choice of the valuation method should depend on the chosen firm's capital structure (Kaplan & Ruback, 1996). It is meaningful to state that Luehrman (1997) finds the APV to be particularly helpful in giving value to cross-border takeovers.

### Relative Valuation

An alternative to absolute value models is the relative valuation model, in which the firm's most significant multiples are compared to those of its competitors. However, there is no "absolute recipe", and the choice of which multiples should be used can significantly influence the outcome. In this method, particular attention must be paid to the sector of interest and the competitive environment characteristics, as the multiples used in the gaming industry can differ from the ones used in the real estate sector, for example.

In this type of evaluation, the focus is on the position of the firm of interest compared to those of the other firms within the industry and on the ability of the company to generate equal or superior returns (Koeplin, Sarin, Shapiro, 2000). To create a relevant comparison, it is essential to find the available data on comparable transactions, analyzing the financial ratios of interest. It is only after the gathering of the most suitable and representative data that the firm will be correctly valued (Kaplan & Ruback, 1996). With "appropriate data" the literature intends the identification of firms and operations with similar levels of risk, capital structures, growth rates, sizes and timing of cash flows (Goedhart, M. et al, 2005) to make the firm being valued as much comparable as possible to

its benchmark firms. A motivated and coherent choice is what can avoid miscalculations of company's value. With the above premise, it follows that the most representative data for comparisons should in principle be found in the same industry of the firm being valued (Lie & Lie, 2002).

Once found similar businesses and operations, the focus is on the correct multiples to be analyzed. The preference for the valuation of a firm with a capital structure including a mix of debt + equity should focus on company value multiples rather than equity value multiples so that the evaluation is not affected by changes in the capital structure. Moreover, multiples should be grounded on the most recent public information available and should be representative of the profitability of the firm without being excessively influenced by the leverage (Goedhart, M. et al, 2005).

According to Lie & Lie (2002), EBITDA multiples are the providers of the most reliable estimates, even though there is no consensus in the literature over the multiples that provide the most precise results, which is due to the fact that, even within the same industry, a high spread exists among the values taken by the variables of interest (such as firm size, profitability value of intangible assets) of different companies in the same time horizon (Alford, 1992).

### *Mergers & Acquisitions*

In Christensen et al (2011), the authors suggest that the rate of M&A operations failing to create real value is "somewhere between 70% and 90%." They believe the cause of this statistic to be that the top management involved in the operations fails to recognize the true value of the acquired company, therefore causing unnecessary expenses and a misalignment between the paid price and the market value of the enterprise.

To avoid such a poor performance of M&A processes, some necessary steps must be taken to start an operation, whether domestic or cross-border. First of all, the most attractive targets must be identified and studied. Secondly, the most valuable company must be chosen as the only target and the negotiation with all shareholders, management and stakeholders should start. Once the operation has been completed, it is time to integrate both firms and fully develop the expected synergies.

Among the potential buyers of a business, there are its managers, other companies or different types of external investors (Damodaran, 2002). To classify the M&A operation being carried out, the main criteria include the method of payment and the outcome of the operation regarding the charac-

teristics of the new vehicle being created by the integration of the two companies involved (Loughran & Vijh, 1997).

In a tender offer, whether there will be an integration depends on the approval (friendly transaction) or not (hostile takeover) of operation by the target firm's shareholders (Loughran & Vijh, 1997). The scheme of the operations is:  $x + y = X$ , where the capital letter stands for the size of the new firm to be bigger than the sizes of both companies involved in the operation,  $x$  is the acquirer and  $y$  the target. In a merger with consolidation instead, a whole new entity is created by both firms, following the scheme of the operation established by both groups of shareholders:  $x + y = Z$ , where the capital letter  $Z$  stands for the new entity created with the merger and with a size bigger than both of the merging firms,  $x$  and  $y$  are the merging firms under consolidation.

In case the operation does not involve equity purchases, but asset purchases, it is classified as an acquisition of assets. This strategy can be used when the target firm is bankrupt to pursue a takeover or buyout. When the management team acquires its company, the operation is defined as a Management Buyout, whereas if external investors buy it, it is a case of Leveraged Buyout, a typical process carried out by Private Equity firms. The latter operation is defined as an acquisition process involving the use of debt where the target company is a private business or is a publicly listed company that will become private as a consequence of the operation (Wruck, 2008).

It is relevant for this study to highlight that M&A operations involving firms competing in the same industry increase the probability to create value from the operation, if compared to operations of firms acting in different industries, which are therefore subject to the risk of lacking the best practices to foster the positive integration of the target's core business (Barkema & Vermeulen, 1998).

### Synergies

As specified above, synergies are the value added that comes from the combination of two companies for which the merger represents a valuable strategy, as it creates opportunities that would be impossible to be accomplished if they were operating separately (Damodaran, 2005). In this context, the crucial point is what kinds of synergies exist and how firms can achieve them. According to Porter (1987), the three main types of interrelations that can exist in a well-diversified firm are tangible, intangible and competitive. Vicentini and Boccardelli (2015) specify the characteristics of these interrelations as in the following lines. Tangible ones consist in the sharing among several

business areas of an asset's fixed costs, and they provide a sustainable competitive advantage if the reduction in total costs exceeds the costs of the sharing itself and it is difficult for the competitors to adopt the same strategy. Intangible ones imply the sharing of best practices and knowledge among several business areas with autonomous value chains and they can be applied if there are similar strategies, same types of customers, similar value chains and value generating activities (Porter, 1987). This second type of interrelations is particularly relevant for the firms analyzed in this study. Finally, the competitive ones derive from the company's ability to minimize the costs of coordination and sharing among all the industrial areas in which the firm competes against its rivals.

Once the potential synergies have been determined, they can be analyzed in terms of the overall effect, which can boost revenues, reduce costs or generate both results at the same time, even though the second effect is the most likely to happen (Sirower & Sahni, 2006). The overall effect of the synergies can be to increase the expected cash flows or to reduce the cost of capital (Damodaran, 2005), therefore increasing the ROC of the post-M&A firm. However, for the synergies to be effective the different types of costs to put them into practice should not exceed the overall benefits, and once this assumption is confirmed, they must be applied through horizontal strategies (Vicentini and Boccardelli, 2015).

A horizontal strategy is what defines and coordinates the plans of several business units, whose activities are correlated, with the aim of creating a total value added higher than the sum of the two business units' values (Porter, 1985). According to Prescott C. Ensign (1998), strategic management should aim to create value independently of the acquired business unit value, and concentrate on developing horizontal strategies to coordinate activities and encourage the sharing of resources and skills.

Once the strategy has been defined, it is essential a correct estimation of the synergies to avoid post-M&A effects different from the ones forecasted by the management. To evaluate the synergies, there is widespread agreement within the literature to use the DCF methods (Damodaran, 2005). According to Vicentini and Boccardelli (2015), the formula is:

$$VS(A + B) = \sum_{t=1}^N \frac{F_{netto_t}}{(1 + r)^t}$$

which determines the below formula for the valuation of the post-M&A firm:

$$\text{Value} = V(A) + V(B) + VS(A + B),$$

where  $V(A)$  is the value of the firm A before the operation,  $V(B)$  is the value of the firm B before the operation and  $VS(A + B)$  is the value of the synergies determined by the operation.

Even though the steps to be undertaken during an M&A process are clear, the potential synergies and their effects on the firms involved are very difficult to be estimated. This is why a relevant percentage of M&A operations do not deliver on their promises, and actually create no value or even destroy value, due to the incompatibility of the firms involved or the excessive price paid for the operation (Kaplan & Weisbach, 1992). With regards to this point, Damodaran (2005) uses historical evidence to provide hints on how to increase the chances of success for M&A operations, by saying that a combination of a large and small firm is potentially more successful than an operation between companies of similar size, and as specified above strategies focusing on cost reductions have a higher likelihood of success if compared to plans based on growth synergies.

### Cross-Border M&A

M&A operations can take place between firms based in the same country or between firms headquartered in different countries. After the peak in the number of M&A transactions worldwide touched in 2007, and the lowest number of transactions worldwide experienced in 2013, the number is rapidly recovering its pre-crisis levels and the value of total transactions (in billion \$) is close to the maximum recorded in 2007. In 2014, cross-border M&A represented 36% of global M&A volume, which is the highest percentage since 2008. Right at the beginning of the US financial crisis, Zenner, M. et al (2008) summarized the main reasons for the growing rate of cross-border transactions, which were “globalization, geographic diversifications [...] and tax benefits”. After a short decline of the percentage of cross-border operations following the spread of the US crisis to the whole world, in the last three years the first two factors have played a determinant role again in the resurgence of cross-border operations. Minor variables have a role for this trend too, such as fluctuations in currency changes, growing importance of sovereign wealth funds as global players and relatively high valuations depending on historical and competitive reasons. So, cross-border M&A can have a crucial importance in delivering superior returns, therefore creating shareholder value (Zenner, M. et al, 2008). Moreover, looking for profitable and accessible foreign markets is a fruitful strategy when the firm’s domestic market is stagnating.

As for the valuation of synergies, also for cross-border transactions we must consider the potential downfalls of such an international strategy. Currency changes can either have a positive (as previ-

ously mentioned) or adverse effect. Taxation in the target firm's country can influence the likelihood of an operation too, even though different strategies can be applied to overcome this problem as in the case analyzed in this study. Probably the primary variable in a cross-border transaction is the cost of integrating firms with different cultures (either corporate or national), even though the research on whether cultural differences impact the performance of an M&A provides contradictory findings (Teerikangas and Very, 2006). Nonetheless, the corporate world is increasingly focusing on the importance of having specific professional figures such as diversity and inclusion managers that are also central to make the integration processes of M&A operations smoother. Finally, other factors to be considered as potential costs are protectionist measures taken by national governments, risks related to differences in jurisdictions, diverging rates of change in inflation of the countries of interest and the existence of different accounting and valuation practices (Koller, T. et al, 2005).

To overcome the difficulties implied in M&A transactions and fully develop the potential synergies between two firms operating in different geographical markets, it is essential to have prior knowledge and experience of the target company's socio-economic and political environment and to have already been an actor in several M&A transactions (Collins et al, 2009), because these factors will positively influence the outcome of the operation.

#### Financing side of an M&A transaction and post-transaction returns

From a financing point of view, M&A transactions can be cash-financed, stock-financed, backed by earnout contracts or by different combinations of the above measures. In the case of the earnouts, the structure of the operation aims at minimizing the potential costs coming from adverse selection and moral hazard in the negotiations (Cain et al, 2006).

The literature on the most appropriate measure for a transaction aiming at superior shareholder returns and on the factors influencing the operation's financial structure is quite controversial. To define the most convenient structure, there are different aspects to be taken into consideration. Stock financing is advisable if the acquiring managers think their firm's stocks are being overvalued by the market, therefore preferring to pay with stock to obtain a significant discount on the operation (Savor & Lu, 2009). However according to Zhang (2001), the choice between cash financing and share exchange is also influenced by cash being directly taxed when stock is tax-deferred, by the relative size of the target to the acquiring company, as well as the market performance of the acquirer at the time immediately preceding the transaction, and the dividend payout of the companies.



A different approach focuses on the fact that the transaction's financial structure can permit whether to share the risk associated with the operation between the acquiring and target shareholders or not. Acquiring shareholders are those taking the whole burden in cash transactions, and will therefore highly benefit or suffer if the expected synergies will be achieved or not (Sirower & Sahni, 2006). Instead, financing with an exchange of stock enables both categories of shareholders to take some risk. Moreover, share financing could be a potential deterrent to agency problems and information asymmetry between the acquiring shareholders and the target firm corporate governance. Cash too can be used to solve agency problems under particular conditions such as leveraged buyouts (Jensen, 1986 and Shivdasani & Zak, 2007). In fact, the use of debt in this type of operations creates a higher risk of bankruptcy for the firm and therefore higher bargaining power for creditors against the management team, the latter facing a serious risk of replacement if the firm goes into bankruptcy. The risk should create incentives for the managers to act towards the stakeholders' interests and pursue a sustainable growth strategy instead of focusing on short-term maximization at every cost.

Statistical analysis of historical cases should also be part of the arguments considered before the structuring of the operation. There is evidence that when a cross-border operation is stock-financed can highly underperform when the time horizon is the long-term compared to cash financed transactions (Dutta et al, 2012). However, when the time horizon is restricted to the short-run, stock financing seems to create value compared to cash (Sehgal et al, 2012).

As seen above, the financial structure of the operation strongly determines who will benefit from the returns (if positive) to the operation, as the highest contributor should take the biggest slice of the overall pie (Damodaran, 2005). To acquire the greatest part of the expected synergies, in a competitive environment with public information the acquiring firm will have to exceed the offers of its competitors (Sirower & Sahni, 2006). This strategy can make the business fully exploit the benefits from the operation, but there is a risk of overbidding, which could make the returns equal to zero or even negative. According to the same study, this scenario gives to the target shareholders the highest benefit from the operation in the short-run. Focusing on the long run, the findings in the literature provide an opposite result. In fact, it is found that the target shareholders are those achieving the worst performance, following the fact that the higher risk incurred by the acquiring ones requires higher returns (Loughran & Vijh, 1997). With the help of statistical measures the actual risk incurred by shareholders in relation to the potential benefits of the investment can be calculated. The most representative measure is the Value at Risk (VaR), which Sirower & Sahni (2006) devel-

oped into the Shareholder Value at Risk (SVaR), with the below formula:

$$\textit{Shareholder Value at Risk (SVAR)} = \frac{\textit{Premium paid for the acquisition}}{\textit{Market value of acquiring firm before acquisition}}$$

There are three ways to calculate the VaR, which are 1) estimation by regression of historical price data for an individual stock or portfolio, 2) use of the standard deviation of a stock or portfolio, later deriving the probability distribution of possible trading values, also called variance-covariance method, 3) simulation of the possible outcomes over a given time horizon, also called Monte Carlo analysis.

Finally, with regards to post-M&A returns, the potential outcomes from the operation can also be represented in a graphical way as Sirower & Sahni (2006) explain. They describe an instrument called the “Meet-the-Premium” (MTP) line picturing all the possible combinations of revenues and cost synergies that would make worth the premium paid. They also elaborate a box representing all the possible combinations deriving from the operation. To achieve a positive outcome from the process, the firm should meet any of the possible combinations above the MTP line.

In conclusion, as highlighted above, the literature on the topic of M&A proves to be conflicting, and there is space for new research and findings challenging traditional ideas (Steigenberger, 2016). Whether the focus should be more on the financing, integration or fundamentals part remains to be established. In this study, some topics discussed in the literature review will be applied to the evaluation and comment of the operation of interest.

## **Industry and Company Analysis**

### *Global Analysis*

The reference industry is the global gaming and lottery industry, with firms specializing in all the value chain's different stages of production (design, development, manufacturing, sales, and distribution) with regards to gaming machines, lottery systems, network system products and online and mobile gaming solutions for regulated markets.

According to the GBGC Global Gaming Forecasts at January 2016, the Global Gaming Market Gross Gaming Yield, which is the consumer spending on gaming (amounts wagered less payout) including land based and total interactive gaming but excluding social gaming, was equal to \$452 billion in 2014, with an expected increase to \$511 billion in 2019.

The overall market rapidly recovered from the global financial and economic downturn and in recent years has seen robust growth rates in terms of Compound Annual Growth Rates (CAGR), as the CAGR for the period 2010 - 2013 was around 5%, with the Asia-Pacific region over performing the rest of the world with double-digit growth rates. In recent years, EMEA region has experienced a different pace, with an evident improvement of the sector stability but the smallest growth rates. For example, focusing only on the lottery business, the EU Mediterranean countries' markets are fairly saturated, with small room for growth in other EU countries, as well as in the US. Concrete early opportunities are again present in the Asia-Pacific region and emerging economies.

The recent expansionary trend of the gaming market can partially be explained by the changes in regulations and States' policy approaches. In fact, there have been relevant Governments' efforts to make the gaming industry more attractive and transparent to potential investors (such as with anti-money laundering legislation), to generate an increase in tax earnings and tourist attraction. Most of the actions focused on the legalization and consequent regulation of the industry, while a less common policy consisting in financial incentives to motivate "responsible gambling" and address the social issues related to the industry. According to the Australian Institute for Gambling Research (AIGR), responsible gaming is "the provision of gambling services in a way that seeks to minimize the harm to customers and the community associated with gambling".

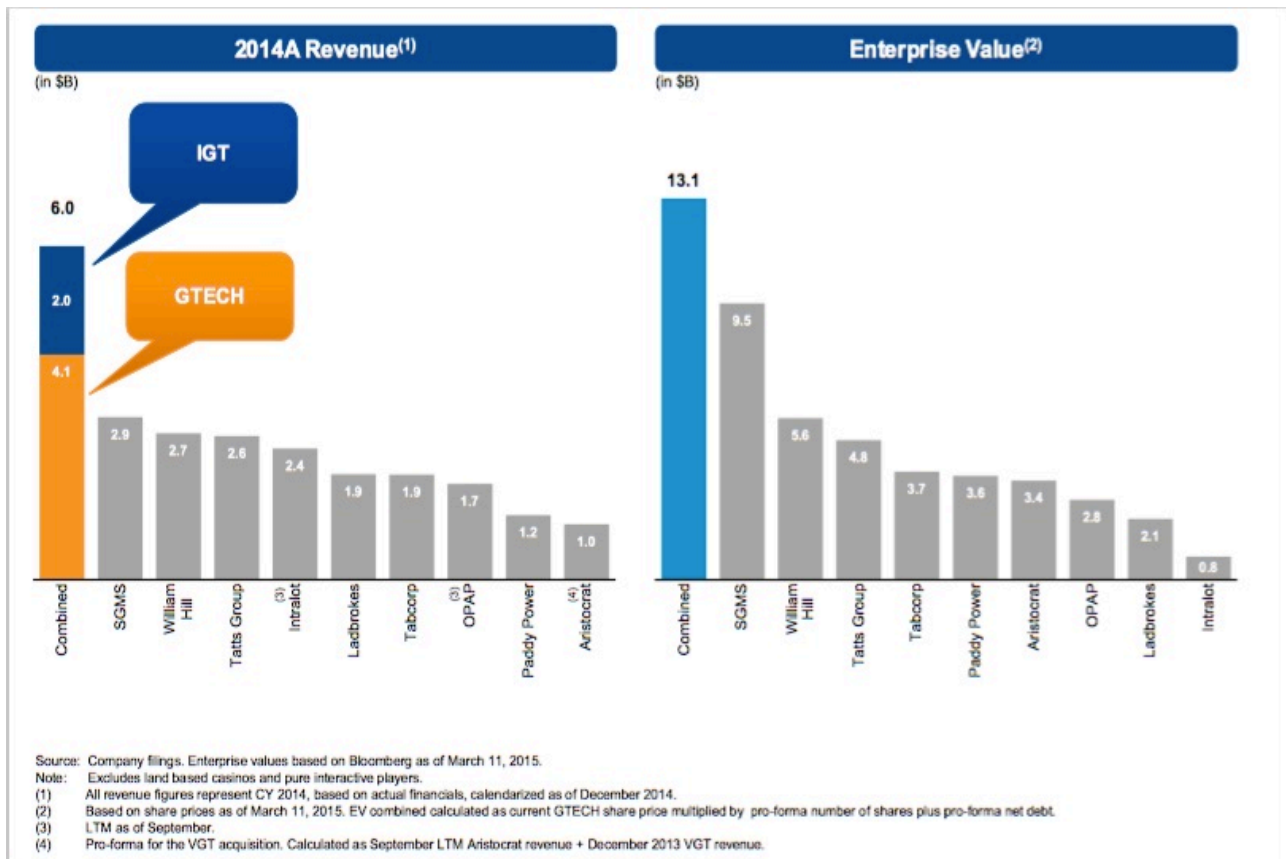
As in other industries, the recent technological discoveries and available instruments are reshaping the gaming industry, globally, regionally and nationally by making online content increasingly relevant and determinant in the firms' strategies. It is difficult to compute the exact magnitude of this effect, due to the change being constructive and destructive at the same time, but it is possible to estimate the sign of this effect, thanks to the industry products being more available real-time without physical constraints, given the pervasive nature of Internet-based services. However, as the legislation on this matter has not kept the pace of the developments, there is uncertainty among consumers and producers and the debate is open to further discussions and changes, with the subsequent reshaping of the competitive environment.

In agreement with Porter, M.E. (1979, 1980, 2008), the following box represents the five forces analysis, a framework that aims to examine the level of competition within the industry and the business strategy development. It is a type of study that finds its background in Industrial Organization economics and aims to picture five forces determining the intensity of competition and desirability of the reference industry.



Source: prepared by the author

In the IGT's Roadshow presentation of March - April 2015 "Creating the world's leading gaming company", the management team presented the following representation of the gaming sector's major global players, in terms of 2014 revenues and enterprise value:



Source: Roadshow slides “Creating the world’s leading gaming company” of March – April 2015

As it can be seen, the combined entity of GTECH and IGT, SGMS, William Hill and Tatts Group are the major global players, with both 2014 revenues and enterprise value as classification criteria. However, these players significantly differ one from each other in terms of geographical reach and main business lines and sub-sectors in which they operate, with offered services ranging from lotteries, video lotteries, casinos, to iGaming, social and interactive gaming, and betting.

### *The Italian sector*

The 2015 Blue Book of Agenzia Delle Dogane e dei Monopoli (ADM) will be quoted to provide key data on the Italian gaming industry, as the ADM, after the absorption of the Amministrazione Autonoma dei Monopoli di Stato (AAMS), became the public body in charge of management of the Italian customs and monopolies system, including the State’s monopoly on the gaming sector.

In 2015 the national gaming industry was worth approximately a total €88 billion, with prizes totaling €71 billion and the rest being classified as players’ expenses. Total taxes revenues for the State were about €8 billion, without considering the 6% tax on prizes, the levy on dormant accounts and

minor additional taxes revenues, which in 2015 totaled €700 million. Of the €88 billion, €22 billion came from VLT, and €7 billion from Lotto.

The CAGR for the Italian Gaming Market Total Wagers Evolution (€ billion) has been equal to 9% for the period 2009 – 2014, with an increasing importance of VLT and interactive games. With regards to the Italian lottery market, it is the world's largest and most developed lottery market, an important source of government revenues, with stable and resilient characteristics, a diversified product offering supported by innovation and with a broad distribution, for a total of approximately €17.5 billion in total wagers in 2014 (39% Lotto, 54% instant lotteries, 7% jackpot lotteries).

### *The American sector*

According to the data provided by the American Gaming Association (AGA) and the Get To Know Gaming (G2KG) website for the year 2014 in accordance with financial and employment data 2014 Oxford Economics, the gaming industry's economic impact in the US is equal to \$240 billion, with 1.7 million jobs supported, \$73.5 in terms of wages, and \$38 billion of tax revenues for the States. The same Association reports that gaming's workforce is healthy and growing, with the commercial casino gaming sector that by 2024 will add 62,000+ new jobs to the number of jobs registered in 2014 (734,000).

According to Statista (a statistics portal with statistics and studies from more than 18,000 sources) facts on US Casinos for the year 2015, the number of casinos in North America was equal to 1,623, with 1,511 of them being in the US. The US casino gaming market revenue was equal to \$71.1 billion.

Returning to the AGA and G2KG data, Nevada is by far the most relevant US State for the industry, as the economic impact there is approximately equal to \$53 billion, with 430,463 employees (about 170,000 of them were casino employees), \$18.7 billion of wages (the average annual salary of casino employees in Nevada was \$45,113), \$7.8 billion of tax revenues and 273 casinos (only in this case both commercial and tribal casinos are included, while the other estimates were commercial only).

For its fundamental importance, information regarding the gaming environment in Nevada is provided. The regulatory oversight of all gambling in the State is conducted through a two-tier system

comprising the Nevada Gaming Commission and the Gaming Control Board. The Commission is the final authority on licensing matters, while the board provides recommendations for the same matters and it is split into multiple divisions, serving as the enforcement, operational, and investigative body for the state's gaming industry. The State also has active tribal-state gaming compacts with four tribes, which have the exclusive right to regulate Class III gaming on tribal reservations.

When it comes to taxation, tax promotional credits are not present in Nevada, nor withholdings on winnings, and the gross gaming tax revenues follow the following scheme:

- for the first \$50,000, it is 3.50%
- from \$50,000 to \$134,000, it is 4.50%
- from \$134,000 and above, it is 6.75%
- there is County / Municipality Tax of approximately 1%.

According to the content provided by Gambling Compliance, accurate as of November 2015, in the responsible gaming area, Nevada has a statutory funding requirement, equal to a \$2 deposit for every slot machine that is subject to a licensing fee. The principle of self-exclusion does not apply, complimentary alcoholic drinks are permitted, and people must be 21+ years of age to gamble and to be on the floor. About advertising restrictions, failure to conduct advertising and public relations in accordance with decency and dignity are grounds for disciplinary action, including interactive gaming advertisements. Finally, problem gambling information must be prominently displayed near gaming areas, cage areas and ATMs.

In terms of integrity, there are testing requirements related to independent testing laboratories to certify gaming equipment, there are anti-money laundering requirements using federal compliance, there are shipping requirements according to which the Nevada Gaming Control Board must approve transportation of gaming equipment, there are no restrictions on political contributions, and credit offered to patrons is allowed.

*GTECH S.p.A. (former Lottomatica S.p.A.)*

Lottomatica was founded on December 6<sup>th</sup> 1990 as a consortium, with the name "Lottomatica Consortium", and in 1991 it secured a public contract for the management and automation of the Lotto, the most popular lottery game in Italy. In April 1998 it transformed into a company limited by shares, therefore changing its name into Lottomatica S.p.A., and in 2001 it was listed on the Milan

Stock Exchange. In the same years, the company was pursuing an internationalization strategy, by acquiring companies and setting strategic partnerships in the Americas.

In February 2002, Tyche S.p.A., a subsidiary of De Agostini S.p.A., carried out a takeover bid for €1.2 billion, which was accepted by 52.2% of the previous shareholders. Tyche S.p.A. was incorporated into Lottomatica S.p.A. at the end of the same year. In August 2006, Lottomatica S.p.A. completed the acquisition of GTECH Corporation for €4 billion, creating the world leader in the gaming industry. In June 2013, Lottomatica Group S.p.A. rebranded the group into GTECH S.p.A., with Lottomatica S.p.A. as a subsidiary. De Agostini S.p.A., a century-old publishing, media and financial services group, was the majority owner.

In July 2014, GTECH S.p.A. opened negotiations for the acquisition of International Game Technology Inc. with an offer consisting of \$4.7 billion in cash and \$1.7 billion in assumed debt. When the merger was completed in April 2015 after the negotiations, the companies were combined under a new holding company named International Game Technology PLC based in the United Kingdom and listed on the New York Stock Exchange.

The Italian subsidiary Lottomatica S.p.A. is headquartered in Rome (Italy), and operates in the gaming business, being the license holder for the Italian National Lottery and including in its portfolio the Italian game of Lotto, 10eLotto, “Gratta e Vinci” and other online and traditional lottery games, machine gaming, sports betting, interactive gaming, and high-volume processing of commercial transactions.

According to the company presentation of March 2014, before the merger, GTECH S.p.A. was the leading commercial operator and provider of technology in the regulated worldwide gaming markets in terms of revenues, which were € 3.1 billion in 2013, with an EBITDA above € 1 billion. It was listed on the Milan Stock Exchange under the trading symbol “GTK” and had a Sponsored Level 1 American Depositary Receipt (ADR) program listed on the US over the counter market under the trading symbol “GTKYY”. It provided B2C and B2B products and services to approximately 100 countries worldwide.

At that time, the company was recognized as the leader in lottery technology service and lottery management agreements, with a 60% of service revenues contractually secured for more than five years, including extension options, and it was the preferred lottery and gaming partner in 60 coun-



tries. It was also the worldwide number one government-sponsored VLT machine and system provider. With regards to revenues by product in 2013, 56% of them were coming from the lottery sub-sector, with 29% from gaming and 10% from interactive services, while when considering 2013 revenues by region, 57% of them came from Italy, 32% from the Americas and 11% from other countries.

In the same year, the firm delivered on the targets of the 2011 – 2013 strategic plan, successfully completing the reorganization process that started with the acquisition of GTECH Corporation in 2006, and strengthening its leadership position. In fact, it increased the share of Italy Gross Gaming Yield<sup>1</sup> from 36% (2010) to 42%, the US lottery share from 67% of sales to 71% and the share VLT terminals in Canada from 34% to 38%. In the same period, the lottery revenues experienced an average CAGR of 5.3%, and the machine gaming revenues doubled to €900 million. The company also over-performed its targets in terms of FCFF generation and leverage ratio, achieving more than €900 million of FCFF and a leverage ratio of 2.4x. These data are reported to picture the solid position of the firm at the beginning of 2014, which is the premise to the operation to be analyzed in the next chapter. The merger aimed to reach the main targets of the 2014 – 2016 strategic guidelines and to grow contribution across all segments (lottery, gaming, interactive) in the Americas.

In the 2014 annual report, the management provided a company overview and the following key data from the financial statements, in conformity with International Financial Reporting Standards:

### MANAGEMENT REPORT

Presented below are the Company's key financial indicators (€ thousands, except per share amounts):

	For the year ended			
	December 31,		Change	
	2014	2013	€	%
Revenue	3,069,653	3,062,834	6,819	0.2
EBITDA	1,078,433	1,036,709	41,724	4.0
Operating income	567,029	559,132	7,897	1.4
Net income attributable to owners of the parent	83,309	175,434	(92,125)	(52.5)
Diluted earnings per share	0.48	1.01	(0.53)	(52.5)
	December 31,		Change	
	2014	2013	€	%
Net financial position	2,585,478	2,507,319	78,159	3.1

Source: GTECH S.p.A. 2014 Annual Report

<sup>1</sup> Gross Gaming Yield (GGY), consumer spending on gaming (amounts wagered less payout)

As of December 31, 2014, it counted 8811 employees. According to the consolidated statements of financial position, total assets were approximately €7.1 billion (80% non-current and 20% current), total equity was €2.6 billion and total liabilities were €4.5 billion (55% current, 45% non-current). According to the consolidated income statements, GTECH S.p.A., and its subsidiaries had net income attributable to the owners of the parent equal to €83.3 million, which provided diluted earnings per share equal to €0.48.

### *IGT*

International Game Technology is a global gaming company specializing in the design, development, manufacture and marketing of casino-style gaming equipment, systems technology and game content across multiple platforms (land-based, online real-money and online social gaming). In 2014, it employed 4.400 individuals worldwide (3600 in North America).

IGT was founded as a private company in 1971 with the name A-1 Distributing Company, and after the success of the video poker machine gaming product, it went public in 1981. After the IPO and listing on the NASDAQ, IGT was the leader in providing new technologies to the market in just a few years, therefore creating new products such as S-Slot, Player's Edge video poker machine, and Nevada Megabucks slot machine. It also expanded its operations to Australia and introduced the computerized player-tracking concept thanks to its acquisition of Electronic Data Technologies. Consequently, this operation made possible the development of the casinos' "frequent player rewards", a key feature for the popularity of some products.

After the 1991 listing on the NYSE, IGT pursued an aggressive internationalization strategy, opening offices and providing services and products across Europe, in Argentina and South Africa. It also continued to bring innovative products to the market, by introducing the worldwide popular Wheel of Fortune progressive slot, the Game King, Triple Play Draw Poker, Elvis themed slot machine, and the S2000 spinning reel slot machine system.

In the early 2000s, IGT entered the S&P 500 list and pursued an aggressive multi-acquisition strategy, to expand its product portfolio. It also continued to expand internationally, by establishing subsidiaries in Canada, Macau, Mexico, and Russia. In the late 2000s, the expansion was directed towards the Asian markets, such as China and Japan. In 2010 the company celebrated the production of its two millionth slot machine. In 2013, a proxy fight between IGT and the minority shareholders

Jason Ader and Charles Mathewson (in control of 3% of the company) started. In July 2014, GTECH S.p.A. agreed to acquire IGT for \$6.4 billion, an operation that was concluded on April 7, 2015.

Years Ended September 30,	2014	2013	2012	Change			
				14 vs 13		13 vs 12	
Revenues	\$ 2,058.1	\$ 2,341.6	\$ 2,150.7	\$ (283.5)	-12%	\$ 190.9	9%
Operating income	408.6	494.1	421.7	(85.5)	-17%	72.4	17%
Income from continuing operations	247.9	272.7	249.7	(24.8)	-9%	23.0	9%
EPS from continuing operations	0.99	1.03	0.86	(0.04)	-4%	0.17	20%

Source: IGT Form 10-K filed to the SEC for the fiscal year ended September 27, 2014 (presented as September 30)

According to the annual report for the fiscal year ended September 30, 2014, filed to SEC (key financial data can be read in the box above), consolidated revenues in 2014 were approximately equal to \$2.1 billion, of which 79% came from products and services provided in US and Canada (North America segment), while 21% came from all other jurisdictions worldwide (International segment), in geographical terms. Regarding products, 43% came from gaming operations, 41% came from product sales, and 16% from interactive services (online social and online real-money).

As of and for the year ended September 30, 2014, operating income was approximately equal to \$409 million, and net income to \$248 million. Diluted EPS were equal to €0.99, and cash dividends declared per share were equal to \$0.44. Total assets were approximately equal to \$3.9 billion, total equity to \$1.2 billion (significantly reduced in 2012 by share repurchases), and total liabilities to \$2.7 billion (17% current and 83% non-current).

From 2013 to 2014, revenues decreased of \$215.9 million (12%) in the North America segment and \$67.6 million (13%) in the International segment. Product sales decreased \$238.2 million (22%) due to lower machine unit volume and gaming operations decreased \$104.5 million (11%) due to installed base decline. These decreases were partially compensated by an increase of \$59.2 million (22%) in interactive revenue as the social gaming business performed really well. Changes in foreign currency rates negatively impacted revenues by approximately \$14.3 million.

To address the issues facing the gaming industry and IGT, the management team implemented a plan in March 2014 to realign the operating structure and reduced global workforce by 7%. Cost savings of approximately \$30.0 million were realized in the 2014 second half and about \$50.0 million in cost savings on an annualized basis are estimated in 2015.

## *International Game Technology PLC at March 2016*

In July 2014, GTECH S.p.A. agreed to acquire IGT to create the world's leading end-to-end gaming company with significant positions across all segments (number 1 in global lottery business and global gaming equipment, and top tier in interactive wagering and social gaming). The merger between the two companies aimed to create a global leader with such a diversified product portfolio and geographic mix, and such a scale that could strengthen the leadership in R&D effort and give the chance to the new company to better benefit from market trends. Therefore, the operation was designed to create value both in the short-term with increased earnings and cash flows, better access to capital markets and expected synergies of around \$280 billion (according to the July 16, 2014, "Investor Slides"), and in the medium-term.

On April 2, 2015, IGT and GTECH S.p.A. announced IGT's final per share merger consideration under the previously announced Agreement and Plan of Merger dated as of July 15, 2014, as amended by and among IGT, GTECH, GTECH Corporation, International Game Technology PLC ("NewCo" - referenced as "HoldCo" in the Merger Agreement) and Georgia Worldwide Corporation. Upon completion of the transactions, IGT shareholders were entitled to receive \$14.3396 in cash, plus 0.1819 ordinary shares of NewCo for each share of IGT common stock. GTECH shareholders received one ordinary share of NewCo for each share of GTECH. NewCo became the holding company of the combined organization and upon closing on April 7, its ordinary shares traded on the New York Stock Exchange under the "IGT" ticker symbol.

To finance part of the acquisition, GTECH issued senior bonds for a total of \$5 billion, which were denominated both in dollars (\$3.2 billion) and euros (€1.6 billion), calculated at the exchange rate of February 9, 2015. As Alberto Fornaro, Executive Vice President and CFO of GTECH S.p.A. at that time, the debt of the post-merger group would have had an average horizon of 6 years and no significant deadlines before 2018. Payment of the bonds was due February 13, 2015, and the bonds were rated BB+ and Ba2 respectively by Standard & Poor's Ratings Services and Moody's Investor Services. The following is a summary of the main terms:

- Senior bonds guaranteed at 5,625%, due in 2020 for \$600.000.000
- Senior bonds guaranteed at 6,250%, due in 2022 for \$1.500.000.000
- Senior bonds guaranteed at 6,500%, due in 2025 for \$1.100.000.000
- Senior bonds guaranteed at 4,125%, due in 2020 for €700.000.000

- Senior bonds guaranteed at 4,750%, due in 2023 for €850.000.000.

According to the combined financials of the pre-merger companies at December 2014 (assuming an exchange rate of \$1 per €0.752 for the previous twelve months), the new corporation would have approximately \$6 billion in revenues, and \$2 billion in EBITDA (34% margin), with an adjusted EBITDA - CapEx of \$1.6 billion (27% margin), without including the estimated achievable synergies. According to the Roadshow Slides of March-April 2015, the estimated synergies were:

		EBITDA Impact <sup>(1)</sup>	% of Relative Base <sup>(1)</sup>	Timing of Cost Synergies
Cost	Industrial Efficiencies	c.\$85 million	c. 6%	<ul style="list-style-type: none"> <li>• Annualized run rate of two-thirds of target achieved in first 12 months</li> <li>• Total synergies expected by year three</li> </ul>
	Overlapping Corporate Activities	c.\$125 million	c. 15%	
	Optimize R&D Spend	c.\$20 million	c. 7%	
Revenue	Natural Revenue Enhancements	Italy sales	c.\$50 million	<b>Integration Costs</b> <ul style="list-style-type: none"> <li>• \$80-90 million over first two years</li> <li>• Funded through sale of selected assets</li> </ul>
		Cross selling		
	Mobile exploitation			
Total		c.\$280 million		

(1) Estimated synergies expected to be achieved by 2018 (excluding any non-recurring integration costs). Addressable cost base defined as cash cost only relative to gaming and interactive business for industrial efficiencies and R&D spending; for corporate and support activities considered full SG&A costs.

Source: Roadshow slides “Creating the world’s leading gaming company” of March – April 2015

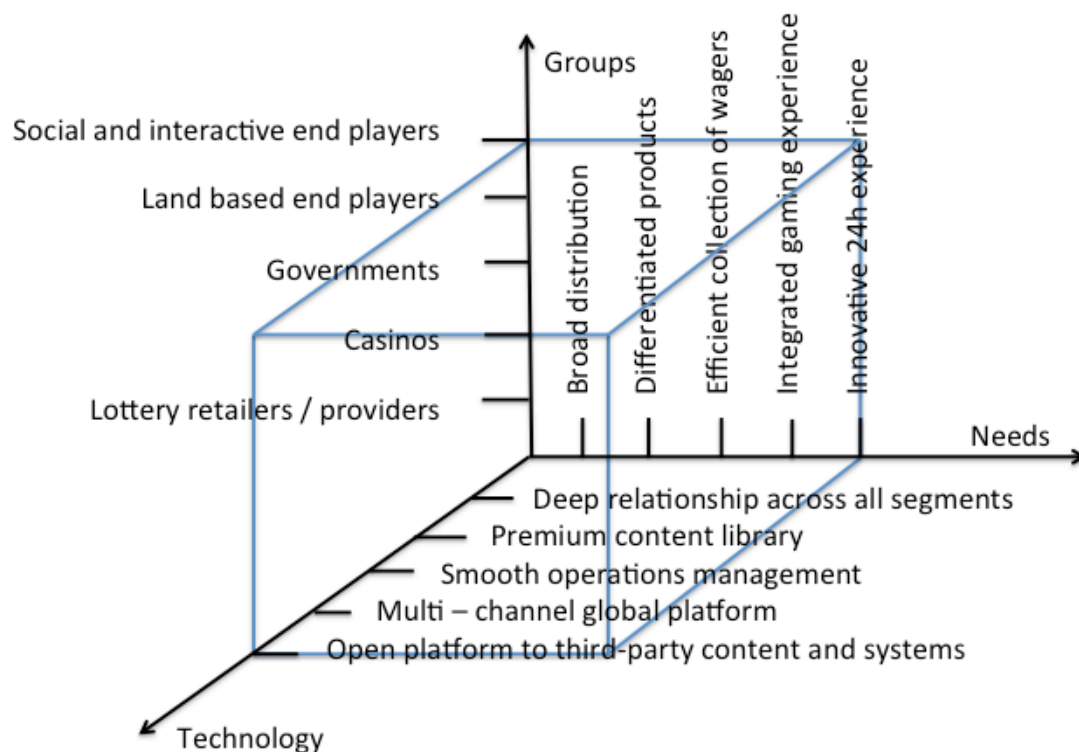
According to the strategy for the future, the management team aimed to achieve even more cost synergies and foster intermediate and long-term growth by integrating, streamlining and reengineering business processes.

Regarding geographical diversification, the combined entity would have 44% revenues coming from the North America segment, 38% from Italy, and 18% from the International segment. When coming to the product mix, 38% of revenues would come from lottery business, 45% from gaming machines, 9% from interactive business, 4% from commercial services and 3% from sports betting. These would result in 82% of revenues being service revenues, and 18% coming from product sales, with a high cash flow visibility for the new entity.

On April 2015, after the merger of GTECH with and into IGT PLC (“Holdco Merger), and the merger of Georgia Worldwide Corporation, a Nevada corporation and a fully owned subsidiary of IGT PLC with and into IGT (“Subsidiary Merger”), International Game Technology PLC became the successor to GTECH S.p.A. and sole stockholder of IGT. IGT PLC is a public limited company organized under the laws of England and Wales, with corporate headquarters in London (UK), and operating headquarters in Rome (Italy), Providence (Rhode Island), and Las Vegas (Nevada).

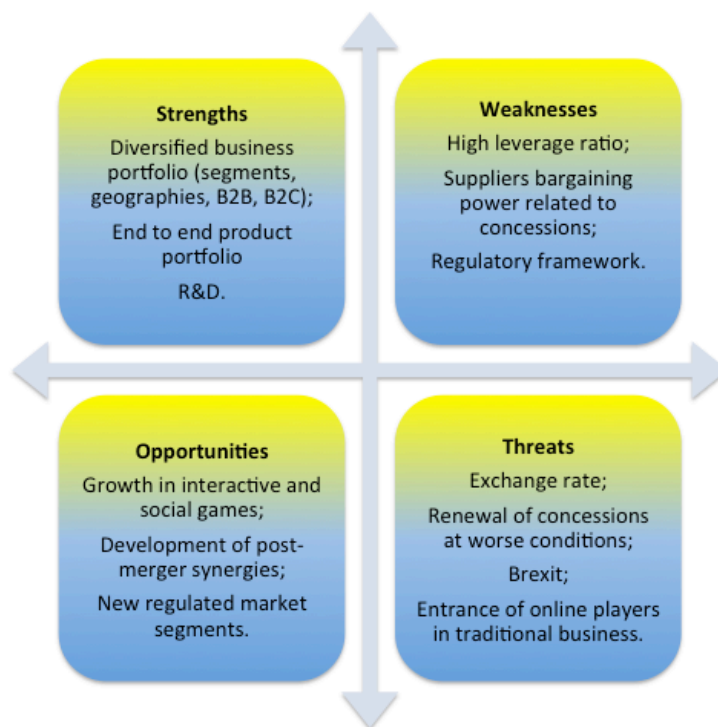
Quoting the company’s website, its vision and mission are to “*provide customers with best-in-class solutions, and create maximum value for shareholders, by adhering to the highest levels of service, integrity, responsibility, and innovation*”. Its integrated portfolio of technology, products and services aims to shape the future of the gaming industry by delivering the innovation demanded by players.

In the company’s 3-dimensional business definition model or Abell Model (depicted below), the company’s customer groups, customer needs and technologies utilized are summarized to define better its business (all business related concepts are within the cube). The endpoints of each axis represent the most innovative areas, which the company is still developing, but which are already part of its lines of business.



Source: prepared by the author

A SWOT analysis (the acronym for Strengths, Weaknesses, Opportunities, Threats) is carried out in the box below. It consists of a structured planning method involving the above four features of the business. The analysis is carried out to identify fundamental factors that affect the business' strategies and objectives, and it distinguishes between two main groups: internal factors, which are strengths and weaknesses inner to the organization, and external factors, which are the opportunities and threats generated by the relevant competitive environment.



*Source: prepared by the author*

In the following paragraphs, the 2015 results will be analyzed, using as sources the IGT PLC 2015 Annual Report to the US SEC, and the IGT's Investor Presentation of March 2016 "The Global Gaming Leader". All the analyzed data and figures were prepared by the company's management under US GAAP (General Accepted Accounting Principles), and the reported information for the full year 2015 period include IGT for the second, third and fourth, and only GTECH operations in the first quarter, while the reported full year 2014 data were GTECH only. The report's pro forma figures and data represented the combined results of both companies.

According to the consolidated financial statements at December 31, 2015, IGT PLC had total assets of \$15 billion (17% current, 83% non-current of which goodwill counts for \$6.8 billion), total liabilities \$11.7 billion (17% current, 83% non-current of which \$8.3 billion of long-term debt less

current portion), and total shareholders' equity of \$3.3 billion. Total revenues for the year were approximately equal to \$4.7 billion (\$5.1 billion according to the pro forma estimate), with operating income equal to \$540 million, and a total comprehensive loss attributable to IGT PLC equal to \$36 million. In the consolidated statement of cash flows, a net increase in cash and cash equivalents of \$345 million was disclosed. The company counted in 2015 approximately 13.000 employees.

IGT PLC is exposed to risks associated with the performance of the global economy, the Eurozone debt crisis (and the overall standing of the European Monetary Union), and the prevailing economic conditions in the markets in which it operates. A critical risk factor for the business results is the significant dependence of total consolidated revenues from government concessions in Italy by Agenzia delle Dogane e dei Monopoli (ADM), which accounts for 33.6% of the total. Termination or non-renewal of the concessions or the renewal on different terms could adversely impact IGT PLC's revenues, and a specific case could happen as the result of the UK leaving EU without maintaining parity rights for its resident companies vs. the EU resident companies, if the Request For Proposal required candidates and their holding companies to be EU residents, and if the De Agostini were not to qualify as holding company for purposes of the Request For Proposal. Moreover, as Lottomatica S.p.A. is not the only member of the new consortium arrangement to bid on the Lotto Concession, profits and cash flows under the new Lotto Concession could potentially be lower than the current ones in the near future.

According to the company's Investor Presentation of March 2016, in 2015 the business stabilized despite external headwinds, and profit growth was expected for 2016. Global lottery same-store revenues grew considerably, while North America and International Gaming market share stabilized. The speed of integration was over the expectations, and the company exceeded synergy targets, while maintaining budgeted restructuring costs, tightening control of CapEx and successfully generating cash. In terms of pro forma financial data, it reached an adjusted EBITDA at high end of expectations with \$1.7 billion, in spite of a FX headwind of approximately 200 million, while the net debt became equal to \$7.7 billion (reduced by \$675 million only in the second half of 2015), thanks to the above mentioned proactive cash management and improved operating performance. The leverage was, therefore, equal to 4.52x, with a target of 4.0x by 2018.

The company also established a dividend policy consisting of \$0.20 quarterly cash dividends, which meant \$160 million of annual use of cash, in line with the previous GTECH policy. With regards to Free Cash Flows, IGT generated \$540 million in free cash flow, before acquisition expenses, as in



the following box, taken from IGT's Investor Presentation of March 2016:

Average, 2010-2014			2015	
(In Millions)	Legacy GTECH <sup>(1)</sup>	Legacy IGT <sup>(2)</sup>	In Millions	IGT plc <sup>(3)</sup>
Free Cash Flow	€233 / \$311	\$288	Free Cash Flow	~\$540
Interest Expense	€169 / \$225	\$132	Interest Expense	~\$450

Source: IGT's Investor Presentation of March 2016 – available at the Investor Relations section on IGT's website

IGT PLC FCF in the above box were before \$160 million in transaction-related expenses and did not include \$57 million in legacy IGT FCF in Q1' of 2015, while annual interest expense estimated a full year of interest costs. The management's average estimation for normalized free cash flows was around \$500 million annually over the five years following 2015, with no impact on working capital and with the FCF spreading upfront Lotto and Scratch & Win payments evenly over their nine-year contract terms.

In the same document, the management estimated an expected 2016 adjusted EBITDA of \$1.74 - \$1.79 billion, in which it assumed the renewal of Lotto but with lower revenue contribution, it included the negative impact of currency and Italian taxes on gaming machines and \$70 million in incremental synergy savings. With regards to CapEx, in 2015 they have been approximately equal to \$430 million, while in 2016 \$575 – 625 million are expected (around \$500 million in lottery maintenance and gaming, and around \$100 million in lottery growth), but if Lotto concession were renewed, the data for the next years would be incrementally larger due to approximately \$660 million in concession fees and the subsequent investment in infrastructure upgrades.

Furthermore, focusing on the progress on synergies, at the beginning of 2016 the implementation was three months ahead, with expected total synergy target to be \$230 million accruing to P&L by 2018 and \$40 million in capitalized savings. In 2015, approximately \$110 million in synergy cash savings was achieved, coming primarily from lower personnel and procurement costs and accruing for \$95 million to P&L and \$15 million in capitalized savings. Cash restructuring charges were around \$75 million in 2015, but incremental synergies are expected to more than offset the remaining integration-related restructuring charges. For the future, key intangible synergies will also derive from the integration of the R&D areas of both pre-merger companies, which were already among the leaders in R&D spending, and will now have the possibility to reinforce their leadership position by delivering new products for a multi-channel platform system.

## Merger Analysis

In accordance with the DCF – WACC methodology explained in the literature review, in this section the two study goals will be analyzed: the terms of the merger agreement between GTECH S.p.A. and IGT will be compared to the expected stock price and present value of equity estimated with the DCF – WACC method; the medium-term prospects for IGT PLC will be analyzed, by providing company valuations with and without the management's expected synergies, in order to provide a rough measure of the value added created by the operation.

With reference to the first part, three steps were taken to carry out the valuation of IGT before the merger, to establish its present value of equity and its expected stock price in the time horizon of interest, given some assumptions. The first step was to find a coherent risk-free rate to be used in the CAPM computation; the second step consisted in using the CAPM method to estimate the expected return from the IGT stock, given the predetermined expected market return and company beta; the third step aimed to determine the proper rate for discounting the free cash flows' forecasts, which is the WACC, and to use the discounted forecasts to determine several measures of present values. Later, the financial structure of the merger agreement will be compared to the study's estimates.

Considering that before the merger, IGT was headquartered in the US and had to comply with US taxation, the risk-free rate has been chosen among the bonds issued by the US Department of Treasury. Due to the deadlines of the IGT, as of September 2014, and the deadlines of the bonds issued by GTECH S.p.A. for the acquisition of IGT, the 10-year US government bond was considered the bond with the most appropriate time horizon. Therefore, the risk-free rate used in the subsequent computations is the 10-year US government bond at December 26<sup>th</sup>, 2014, with a yield equal to 2,25%. This instrument does not make the CAPM computation unreliable, which is what would happen with the excessively low rates (close to zero) experienced in recent years, which would make the expected return on equity significantly different from the one required by the investors in the markets and portray an investment as excessively safe.

In the second step, to compute the company Beta, the following procedure was applied. Using Yahoo Finance as the source for the data, the weekly closing prices of the IGT stock, of the S&P 500 index and the weekly yields of the T-bonds 10y from 01/01/2010 to 29/12/2014 have been collected and ordered from the most recent to the least recent in terms of date. The S&P 500 was used as the reference market index, as it is a stock market index based on market capitalization of 500 large

companies listed on the NYSE or NASDAQ, which are therefore representative of the entire US stock market, and in 2001 IGT became temporarily a member of the S&P 500 list. After the data gathering, the weekly percentage variations of the closing prices for the IGT stock and the S&P 500 were computed, while the weekly yields of the 10y bond were not modified, as they were already percentages. Then, the weekly differences between the IGT's weekly percentage variations and the risk-free rate weekly yields, and between the S&P 500's weekly percentage variations and the risk-free rate weekly yields were computed for each week. Once the results had been computed, the excel "slope" function was regressed on them, providing the estimate of the company Beta, which was equal to 1.13. A Beta greater than one indicates that the security's price tends to be more volatile than the market, on average by 13%, and in positive correlation with the market trends.

The US equity risk premium (equal to the difference of the expected US market return and the risk-free rate) was taken by Damodaran's website, and it was equal to 6.25%. Expected return on equity was computed under the formula specified in the literature review, and it was equal to 9.31%.

As reported in the following image taken from an Excel spreadsheet, the expected return on equity was only one of the inputs to be used for the DCF – WACC computation.

**Inputs**

Return on debt ( $r_{debt}$ )	6,21%	From annual report for fiscal year ending September 30, 2014 - calculated by a weighted average of the rates on the bonds due until 2023
(Market) value of debt	2791900000	From annual report for fiscal year ending September 30, 2014
Market value of equity	1197600000	From annual report for fiscal year ending September 30, 2014
Market value of assets	3989500000	From annual report for fiscal year ending September 30, 2014
Total effective tax rate	0,228	From annual report for fiscal year ending September 30, 2014
Return on equity ( $r_{equity}$ )	9,31%	[From sheet CAPM]
Assumed growth rate of revenues	3%	Global gaming market GGY evolution estimated by GTECH for the period 2014-2018

**Free cash flows**

	2014	
1, Revenues	2058100000	From annual report for fiscal year ending September 30, 2014
2, Costs	1583300000	From annual report for fiscal year ending September 30, 2014
3, EBITDA	474800000	
4, Depreciation and Amortization	66200000	From annual report for fiscal year ending September 30, 2014
5, EBIT	408600000	
6a, Interests	87300000	From annual report for fiscal year ending September 30, 2014
6b, EBT	321300000	
6c, Tax (22,8%)	73256400	
7, Profit after tax	248043600	
8, Operating cash flow	314243600	
9a, Change in net working capital	408800000	From annual report for fiscal year ending September 30, 2014 - page 60
9b, CAPEX	88300000	From annual report for fiscal year ending September 30, 2014
10, Free cash flow	-115460800	

Source: prepared by the author

To determine the return on debt required by creditors of the company, a weighted average of the rates on bonds due until 2023 was computed (10-year horizon), and it resulted in 6.21%.

Afterwards, the market values of debt, equity and assets were assumed as equal to the ones reported in the IGT' SEC Filing for the fiscal year ending September 30<sup>th</sup>, 2014, as well as the total effective tax rate equal to 22.8%. The assumed growth rate of revenues is equal to the CAGR for the global gaming market GGY (Gross Gaming Yield) included in GTECH's presentations for the period 2014 – 2018. The percentage was used in the model because IGT operated globally and the 3% estimate represented a more appropriate growth rate than less conservative estimates, which in recent times have proved to be too optimistic.

In the free cash flows column, most of the data are collected from the annual report filed to the SEC, while EBITDA is computed as the difference in Revenues and Costs, EBIT is equal to EBITDA minus Depreciation and Amortization, EBT is EBIT minus Interests, and the Profit after tax is the difference between EBT and its 22.8%. Operating cash flow is computed as the sum of Profit after tax and D&A, while free cash flows are equal to the formula stated in the literature review.

With regards to the outputs of the DCF – WACC computation, the first to be computed was the weighted average cost of capital, in agreement with the formula reported in the literature review, and it resulted equal to 6.15%. The next step was to compute the free cash flows for the time horizon of interest (2015 – 2019, five years), using the same formulas mentioned above compounded with the assumed growth rate of revenues. A clarification must be made about the forecasted change in working capital. Considering the changes experienced by IGT in recent years and in particular the trend from 2012 to 2014, it was assumed a trend in which one year the net change is negative and the following year is positive at similar magnitudes, so that the net working capital at the end of the time horizon will be greater than the one recorded in 2014, but the annual percentage increase will be lower than the assumed growth rate of revenues. This assumption is in line with the fact that assets could decrease depending on the conditions at which some concessions will be renewed, and that the industry is experiencing slower growth, and that the company's management could make extensive use of debt to finance acquisitions or product innovation.

The forecasted free cash flows were later discounted by the WACC to determine their PV.

## Outputs

Weighted average cost of capital	6,15%				
Free cash flows forecasts	1	2	3	4	5
	2015	2016	2017	2018	2019
1, Revenues	2119843000	2183438290	2248941439	2316409682	2385901972
2, Costs	1630799000	1679722970	1730114659	1782018099	1835478642
3, EBITDA	489044000	503715320	518826779,6	534391583	550423330,5
4, Depreciation & Amortization	68186000	70231580	72338527,4	74508683,22	76743943,72
5, EBIT	420858000	433483740	446488252,2	459882899,8	473679386,8
6a, Interests	89919000	92616570	95395067,1	98256919,11	101204626,7
6b, EBT	330939000	340867170	351093185,1	361625980,7	372474760,1
6c, Tax (22,8%)	75454092	77717714,76	80049246,2	82450723,59	84924245,3
7, Profit after tax	255484908	263149455,2	271043938,9	279175257,1	287550514,8
8, Operating cash flow	323670908	333381035,2	343382466,3	353683940,3	364294458,5
9a, Change in net working capital*	-365500000	408800000	-365500000	408800000	-365500000
9b, CAPEX	90949000	93677470	96487794,1	99382427,92	102363900,8
10, Free cash flow	667639376	-97596442,72	686039664	-78644146,08	705560529,5
Present value (PV)	628948799,8	-86612522,81	573547348	-61938374,24	523481126,4
Total PV free cash flows	1053945251				
Terminal Value	22387192808				
PV entire business	18685598659				
PV equity	5609192368				
Expected stock price (P <sub>0</sub> )	22,67				
Leverage Ratio	0,699812007				
Shares Outstanding**	247400000				
Book value of assets	3989500000				
Book value of debt	2791900000				

\*The exact change disclosed in the 2014 SEC filing for the years 2014 and 2013 has been replicated

\*\*The number of shares outstanding of each of the registrant's classes of common stock, as of November 20, 2014: 247.4 million shares of common stock at \$.00015625 par value

Source: prepared by the author

Then, the sum of the free cash flows from 2015 to 2018 gave the total PV, while the free cash flows in the year 2019 were divided by the difference between the WACC and the assumed growth rate of revenues to determine the terminal value. The present value of the entire business was computed by the sum of the total PV of free cash flows and the discounted terminal value. The PV of equity was the result of the PV of entire business multiplied by one minus the leverage ratio, which is the ratio between book value of assets and book value of debt, but in this case the ratio between the market value of assets and the market value of debt was used as a proxy, due to its good approximation according to historical data. The expected stock price for such a company was then the PV of equity divided by the shares outstanding as of November 20<sup>th</sup>, 2014, therefore equal to \$22,67.

In order to put these results into a significant perspective, the financial structure of the merger agreement must be considered. GTECH S.p.A. agreed to buy IGT in a cash and stock deal worth \$4.7 billion, to which \$1.7 billion in assumed debt must be added. The payment of \$4.7 billion represented approximately a 20% premium on the IGT's closing stock price (\$15.50 per share) for the first week of April 2014, the month in which the agreement was first announced. The final terms of the deal between the world's main provider of lottery systems and the largest slot-machine maker

were then made official on April 6<sup>th</sup> 2015, when IGT shares were trading at \$17,68, which makes the premium paid on IGT's stocks approximately equal to 8%.

The premium paid could be interpreted as the positive expectations of the GTECH's management towards the largest slot-machine maker in the world, which also has a differentiated product offer and consistent geographical diversification, with a considerable presence in a high-growth sub-sector such as the social and interactive gaming that will probably expand for several years in terms of revenues and customers.

The premium could also suggest that IGT's stock was underpriced due to the recent news of the decline in revenues occurred in 2014, which was mainly due to a temporary contraction of certain sub-sectors and an exploitation of the most profitable sub-sectors, which still had to be improved. However, the contraction was partly the result of the difficult global economic downturn, which reduced the ability of end customers to buy services and products, and the market could have overreacted or acted in a speculative way in response to the news.

Moreover, it has to be considered that the merger does not only create a new entity that is the sum of the previous two, but also generates room for revenue and cost synergies, which GTECH's management could have already priced in the merger agreement. To test such an argument, the second part of this section aims to provide two valuations of the new entity, IGT PLC. The first one was carried out considering the company's SEC filing with the 2015 financial statements and no future synergies included in the free cash flows computation, with the exception of those already realized, as of December 2015. The second valuation includes the synergies predicted by the IGT PLC's management in the forecasted free cash flows, therefore making the PV of equity larger and the expected stock price higher. A comparison between the estimate with no synergies and the one with the synergies is carried out, to discuss the estimated magnitude of the positive effect and its relation to the premium paid in the merger agreement.

Concerning the second part of this section, the following are the results of the valuations. It has to be considered that the consolidated financial statements reported to the SEC for the fiscal year ended December 31, 2015, accounted only for GTECH's data regarding the first quarter of 2015, while for the rest of the year the data represented the combined entity's results. So, pro forma data were included in the model, as reported by IGT PLC's management in its presentations and roadshows.

In the first step of the DCF – WACC model, in this case, the US 10-year Treasury bond was used again, but for a different reason. In fact, the new company, IGT PLC, operates globally, with considerable parts of its business in the US and Italy. Using an Italian bond would have biased the analysis, as the current regulatory framework of the European Monetary Union is changing the status quo of Member States' bonds being completely risk-free. Moreover, the dollar is still the most used currency in the world in terms of transaction volumes, and the US Treasury bonds in theory should not default, therefore being classified as risk-free rates. The 10-year time horizon is again the most suitable for the valuation model, and at December 31<sup>st</sup> 2015 its yield was equal to 2,27%.

In the second step, to calculate the expected return on equity for IGT PLC, the procedure used above was reiterated, but with different historical data as the merger agreement was completed only in April 2015. So, the weekly closing prices of IGT PLC and the S&P 500 were taken from January 1<sup>st</sup> 2015 to March 31<sup>st</sup> 2016. The interval for the weekly yields of the 10-year US Treasury bonds was the same, and the computation of the Beta used the Excel function “Slope” again, giving, as a result, a company Beta approximately equal to 1.3. The country risk premium considered in this case was the data for the UK as IGT PLC is headquartered in the UK, and it was equal to 6.29%. The above data gave, as a result, an expected return on equity equal to 10.52%. As the time horizon of these data is necessarily short, the weekly percentage variations could lead to a poor estimation of the company Beta, even though the result is close to the one obtained in the IGT valuation and seems to be coherent with the company's profile.

To determine the expected return on debt, a weighted average of the rate on bonds until 2025 was computed (11-years), and it resulted in 5.55%, which is an expected return lower than the pre-merger IGT case. Even though the amount of debt incurred by the company is substantially larger than before due to the bonds issued for the merger, this expected return on debt comes from the fact that the company will have sufficient time to put into practice its synergy and deleverage plan, as well as it will have time to improve its profitability and cash management, in order to efficiently meet the first deadlines in three years. Moreover, the combined entity is more solid than IGT, given its wider diversification and product portfolio, and the global financial environment reached in the last two years historically low levels regarding interest rates.

Most of the inputs were collected from the IGT PLC' SEC filing for fiscal year ending on December 31<sup>st</sup> 2015, as reported in the box below:

## Inputs

Return on debt ( $r_{debt}$ )	5,55%	From annual report for fiscal year ending December 31, 2015 - calculated by a weighted average of the rates on the bonds due until 2025
(Market) value of debt	11700000000	From annual report for fiscal year ending December 31, 2015
Market value of equity	3300000000	From annual report for fiscal year ending December 31, 2015
Market value of assets	15000000000	From annual report for fiscal year ending December 31, 2015
Total effective tax rate	20,25%	From annual report for fiscal year ending December 31, 2015
Expected return on equity ( $r_{equity}$ )	10,52%	[From sheet CAPM]
Assumed growth rate of revenues	3%	Global gaming market GGY evolution estimated by IGT for the period 2015-2019

## Free cash flows

	2015	
1, Revenues	5100000000	From annual report for fiscal year ending December 31, 2015 - pro forma
2, Costs	3396000000	From annual report for fiscal year ending December 31, 2015 - pro forma
3, EBITDA	1704000000	
4, Depreciation and Amortization	148801000	From annual report for fiscal year ending December 31, 2015
5, EBIT	1555199000	
6a, Interests	450000000	From Investors Presentation March 2016
6b, EBT	1105199000	
6c, Tax (20,25%)	223802798	
7, Profit after tax	881396203	
8, Operating cash flow	1030197203	
9a, Change in net working capital	420072203	From annual report for fiscal year ending December 31, 2015
9b, CAPEX	429000000	From Investors Presentation March 2016
10, Free cash flow	540000000	Before 160 million in transaction-related expenses

Source: prepared by the author

As in the report, data for the first quarter of 2015 were taken only from the pre-merger GTECH S.p.A., while for the rest of the year data were related to IGT PLC, pro forma data were considered in this valuation, in order to better compute the magnitude of free cash flows, and therefore provide a more reliable measure of the PV of equity and expected stock price.

As the company is headquartered in the UK, the total effective tax rate was the UK one, and it was equal to 20.25%. The assumed growth rate of revenues is again equal to CAGR of the global gaming market GGY (Gross Gaming Yield) included in IGT PLC's presentations, in this case for the period 2015 – 2019. The percentage was relevant because IGT PLC is a global player for which it is justified to assume a constant market share in the relevant time horizon, and the 3% estimate represented an appropriate growth rate for the same reasons explained above for IGT. A member of the management team of IGT PLC confirmed the assumption in a semi-structured interview.

In the free cash flows computation, most of the data were collected from the annual report filed to the SEC, while EBITDA is computed as the difference in Revenues and Costs, EBIT is equal to EBITDA minus Depreciation and Amortization, EBT is EBIT minus Interests, and the Profit after tax is the difference between EBT and its 20.25%. Operating cash flow is computed as the sum of Profit after tax and D&A, while free cash flows are equal to the formula stated in the literature review. Pro forma estimate of CapEx was taken from the Investors Presentation of March 2016. With regards to the outputs of the DCF – WACC method, the box below summarizes them:



## Outputs

Weighted average cost of capital	5,77%				
Free cash flows forecasts	1	2	3	4	5
	2016	2017	2018	2019	2020
1, Revenues	525300000	541059000	5572907700	5740094931	5912297779
2, Costs	349788000	3602816400	3710900892	3822227919	3936894756
3, EBITDA	1755120000	1807773600	1862006808	1917867012	1975403023
4, Depreciation & Amortization	153265030	157862981	162598870	167476836	172501142
5, EBIT	1601854970	1649910619	1699407938	1750390176	1802901881
6a, Interests	463500000	477405000	491727150	506478965	521673333
6b, EBT	1138354970	1172505619	1207680788	1243911211	1281228548
6c, Tax (20,25%)	230516881	237432388	244555360	251892020	259448781
7, Profit after tax	907838088,6	935073231,2	963125428,2	992019191	1021779767
8, Operating cash flow	1061103119	1092936212	1125724298	1159496027	1194280908
9a, Change in net working capital	432674369,1	445654600,2	459024238,2	472794965,3	486978814,3
9b, CAPEX	441870000	455126100	468779883	482843279	497328578
10, Free cash flow	556199999,5	572885999	590072579,5	607774757	626007999,5
Present value (PV)	525868270	512106366	498704609,3	485653574,7	472944084,1
Total PV free cash flows	2022332820				
Terminal Value	22616443370				
PV entire business	20094417004				
PV equity	4420771741				
Expected stock price (P <sub>0</sub> )	22,08				
Leverage Ratio	0,78				
Shares Outstanding*	200244239				
Book value of assets	15000000000				
Book value of debt	11700000000				

\*The number of shares outstanding of each of the registrant's classes of common stock, as of December 31, 2015

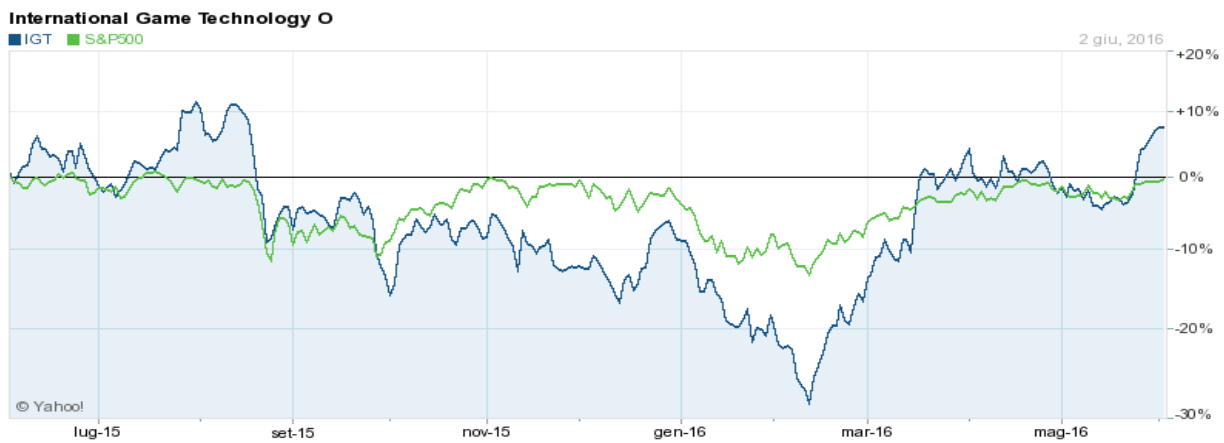
Source: prepared by the author

The first to be computed was the weighted average cost of capital, in agreement with the formula reported in the literature review, and it resulted equal to 5.77%. The next step was to compute the free cash flows for the time horizon of interest (2016 – 2020, five years), using the same formulas mentioned above compounded with the assumed growth rate of revenues. In this case, the future change in working capital was computed with the same assumed growth rate of revenues, in line with the historical data of GTECH S.p.A. and IGT combined.

The forecasted free cash flows from 2016 to 2019 were later discounted by the WACC to determine their total PV, while the free cash flows of the year 2020 were divided by the difference between the WACC and the assumed growth rate of revenues to determine the terminal value. The present value of the entire business was computed by the sum of the total PV of free cash flows and the discounted terminal value. The PV of equity was the result of the PV of entire business multiplied by one minus the leverage ratio, which is debt over assets. The expected stock price for such a company was then the PV of equity divided by the shares outstanding as of December 31<sup>st</sup>, 2015, and it resulted equal to \$22.08 in the time horizon considered. To compare the expected stock performance in the next few years with the actual level of the stock price, two graphs taken from Yahoo Finance website (data until June 3<sup>rd</sup>, 2016) are reported below:



Source: Yahoo Finance - Performance of IGT PLC stock price in the last twelve months.



Source: Yahoo Finance - Performance of IGT PLC stock price compared to the S&P 500 in the last twelve months.

As it can be seen from the first graph, after an initial post-merger weakness of the stock, mainly due to the global economic downturn and the initial transaction and reorganization costs, in the last three months the stock rapidly recovered, reaching a level slightly above \$19. When considering the above valuation carried out in this study, it can be assumed that if the assumed growth rate proves to be a reliable measure in the next few years, ceteris paribus, the IGT PLC stock price should further increase and reach the predicted level, therefore generating approximately a 14% return.

However, in the above computation, only the synergies already realized were accounted, whereas the forecasted synergies were not considered. According to the Investors Presentation of March 2016, the synergies realized in 2015 were \$110 million, and \$270 million (\$135 million per year) were expected to accrue to P&L by 2018. Because in the method used in this study EBIT is the measure of the income statement that directly affects the free cash flows computation and therefore the PV of equity and expected stock price, in the following part synergies were accrued to EBIT.

Even though the management expected approximately \$135 million of synergies for the following two years, such an amount was accrued in the model to the EBIT of every year of the time horizon (2016 – 2020), because the integration of two substantially complementary product portfolios could lead to consistent future revenue synergies, after the realization in the first two years of the main cost synergies. Therefore, considered these assumptions the expected stock price for the combined entity with synergies for the time horizon of interest is equal to \$25.90, while if synergies were accrued only to the 2016 and 2017, the expected stock price would be really close to the expected stock price in the model with no expected synergies included. Results are summarized below:

#### Outputs

Weighted average cost of capital	5,77%				
Free cash flows forecasts	1	2	3	4	5
	2016	2017	2018	2019	2020
1, Revenues	5253000000	5410590000	5572907700	5740094931	5912297779
2, Costs	3497880000	3602816400	3710900892	3822227919	3936894756
3, EBITDA	1755120000	1807773600	1862006808	1917867012	1975403023
4, Depreciation & Amortization	153265030	157862981	162598870	167476836	172501142
5, EBIT + \$135 million every year	1736854970	1784910619	1834407938	1885390176	1937901881
6a, Interests	463500000	477405000	491727150	506478965	521673333
6b, EBT	1273354970	1307505619	1342680788	1378911211	1416228548
6c, Tax (20,25%)	257854381	264769888	271892860	279229520	286786281
7, Profit after tax	1015500589	1042735731	1070787928	1099681691	1129442267
8, Operating cash flow	1168765619	1200598712	1233386798	1267158527	1301943408
9a, Change in net working capital	432674369	445654600	459024238	472794965	486978814
9b, CAPEX	441870000	455126100	468779883	482843279	497328578
10, Free cash flow	663862499	680548499	697735079	715437257	733670500
Present value (PV)	627659519	608346546	589696441	571683271	554282250
Total PV free cash flows	2397385778				
Terminal Value	26506078704				
PV entire business	23577554467				
PV equity	5187061983				
Expected stock price (P <sub>0</sub> )	25,90				
Leverage Ratio	0,78				
Shares Outstanding*	200244239				
Book value of assets	15000000000				
Book value of debt	11700000000				

\*The number of shares outstanding of each of the registrant's classes of common stock, as of December 31, 2015

Source: prepared by the author

If such an evolution of the stock price took place in the next few years, shareholders would be highly rewarded for their investment with a total return approximately equal to 33% six years after the merger, and the operation itself with all subsequent realized and expected synergies would classify as value-generating activities in the medium-term.

## Conclusion

The study was set out to explore the effects of the merger between GTECH S.p.A. and IGT, which in April 2015 were combined into the new entity IGT PLC, headquartered in the United Kingdom. After summarizing the main methods applied to the listed companies' valuations, the global gaming competitive environment and the Italian and US gaming sectors were described to provide relevant data and information to be used for the valuation models' assumptions.

Valuations of the pre-merger company IGT and of the new combined entity IGT PLC were given, using the WACC – FCF model and all available financial data and public information. For IGT PLC two different valuations were provided, the first without accruing the expected cost and revenue synergies to the free cash flows computation (only the synergies already realized in 2015 were accrued), and the second including the cost synergies expected to be accrued by 2018 and assuming an equal amount of yearly synergies for the years 2018, 2019, 2020 (which is a realistic assumption due to the fact that the new highly diversified portfolio and integrated platform could generate substantial revenue synergies in a global market with a GGY CAGR equal to 3%).

In the valuation of the pre-merger IGT, the expected stock price for the time horizon 2015 – 2019 was equal to \$22.67. This number was put into a significant perspective when compared to the \$4.7 billion payment made to acquire IGT, to the IGT's closing stock price of \$15.50 registered in the first week of April 2014 (when the deal was first announced), and to the price at which IGT was trading when the deal became official, which was \$17.68 on April 6<sup>th</sup> 2015. The payment made by GTECH S.p.A. for IGT represented a considerable double-digit premium on the stock price registered on April 2014, whereas it represented approximately an 8% premium on the stock price on April 6<sup>th</sup> 2015. However, according to the valuation, the expected stock price for the pre-merger IGT, if correct, would generate a return on the investment made for the merger equal to approximately 19%. The result proved that, given the assumptions used in the valuation, the GTECH management had carried out a value-generating operation in the medium-term. This consideration was confirmed in this study by both valuations of the post-merger IGT PLC.

In the valuation of IGT PLC, all available information at May 2016 and the disclosed data for the financial year 2015 were used to compute the expected stock price for the time horizon 2016 – 2020, which was equal to \$22.08 including only the already realized 2015 synergies, and \$25.90 including the expected synergies to be accrued within the time horizon of interest. These results were

then compared to the evolution of the IGT PLC stock price, which opened on the NYSE at \$18.95 on April 7<sup>th</sup> 2015, and reached on June 6<sup>th</sup> 2016 a closing price equal to \$19.34. Using again the same valuation method, the expected stock price of IGT PLC would generate by 2020 (six years as the relevant time horizon) a return to the shareholders approximately equal to 14%, which is slightly lower if compared to expected return for the pre-merger IGT, but it is in line with the fact that in the operation \$1.7 billion of assumed debt were also included, and the first payments for the bonds issued by GTECH S.p.A. to finance the operation would start in 2018 (within the time horizon). However, when considering the expected synergies for the relevant period of time, the operation would generate in six years a return approximately equal to 33% for the shareholders, which would be substantially larger than the return expected from the pre-merger company alone.

Therefore, the result was interpreted as a proof of the fact that the merger could be defined as a value-generating activity in this specific case. The reason why has to be found in what was explained in the industry and company analysis. In fact, the market proved to have room for growth in specific segments and regions (in which IGT PLC today is recognized as leader), and the pre-merger companies had solid track records in terms of continuous revenue-generating business activities within mature markets. Undertaking the cross-border merger permitted to unite two complimentary business portfolios with a correct diversification in terms of products, geographical segments, B2B and B2C competencies, enabling the management to solidify a global leadership position in the entire gaming industry. This strategy, together with the rapid and correct implementation of the necessary practices to realize cost and revenues synergies, given all the assumptions, is expected to create shareholder value in the medium-term, as the results in this study show.

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