

# Economics of New Music

**Tim Benjamin**

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non-involvement, but can immediately share his ideas with others anywhere in the world, then it seems to me that specialism and the individuation of the artist's work will thrive and not wither.

Perhaps a reluctance to embrace the future, even a fear of the future, is symptomatic of a successful composer in his prime; consider Wagner, writing to Liszt in 1850:

I have felt the pulse of modern art and know that it will die! This knowledge, however, fills me not with despondency but with joy ... The monumental character of our art will disappear, we shall abandon our habit of clinging firmly to the past, our egotistical concern for permanence and immortality at any price: we shall let the past remain the past, the future – the future, and we shall live only in the present, in the here and now and create works for the present age alone.<sup>56</sup>

This proto-modernist angst echoes the fear of Walter Benjamin almost a century later that the future would bring destruction; however, unlike Benjamin but like Adams, Wagner's prescription is simply to live in and compose for the present. That the established artist should be nervous of the future, sure to bring new destructive machinery and an end to traditional craft, is a common theme in art (including literature) from the beginning of the Industrial Revolution, and is symptomatic of a teleological view of history.

The art of the past will not cease to exist, but the art of the future will build upon it (as it always has done) and use the principle of mass connection in unforeseeable ways. Unhindered connection will enable both mainstream and *avant-garde* movements to thrive.

## IV. The Composer as Economic Agent

Having surveyed the cultural impact of a new “Age of Mass Connection”, I now return to a theme of economics and the industry of music. Rather than examine the industry as a whole (as in earlier chapters), in the following chapter I will reflect on the composer as an individual economic agent in the marketplace, and conclude by considering a number of models which allow the composer to take advantage of this new Age.

### Composers and Utility

Few composers are able to write in artistic isolation, having independent means, able to compose freely without any concern to making a living, particularly early in their career. Therefore it is reasonable to examine the ways in which the need to “make a living” might affect

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<sup>56</sup> Spencer and Millington (1988), 210

the productivity of a composer. After considering the case of an individual (and strictly hypothetical) model composer, I will widen the discussion to composers in general. There are probably as many different approaches to living as a composer as there have been composers in history<sup>57</sup>, but in widening to the general case from a hypothetical model I hope to show how the new landscape might affect composers of the near future.

It is important to note that in the following analysis, as elsewhere in this thesis, I do not propose to judge the work of composers (both in the theoretical case and the work of named composers). Some composers may thrive on independent means, able to compose freely without concern for income, while others may need relationships with (and the pressures of) the “real world” to spur their creativity. Indeed, both situations may apply to the same composer at different stages of his artistic career, but what effectively comes down to the amount of time available to write does not, in my analysis, necessarily have anything to do with the quality of work produced, however measured.

The cultural circumstances of composers throughout history are very varied, and the notion of the professional composer or free-willed craftsman (at least, as free as any other artisan) has only existed for perhaps two centuries. Earlier composers were essentially indentured servants, dependent on the court or the church (or both), and are therefore not an object of this study. The argument that follows is strictly an economic and not a cultural analysis, and the intention is to examine the variety of economic drivers for real composers (as opposed to hypothetical economic agents) in the light of an hypothetical economic model constructed from first principles, independently of a particular cultural circumstance beyond that described above. Examples from history, therefore, are drawn from the 19<sup>th</sup> and 20<sup>th</sup> centuries, with one exception from the late 18<sup>th</sup> century.

In the case of a hypothetical composer – let his name, for the sake of clarity and distinction from non-fictional examples, be Leverkühn<sup>58</sup> – productive time will be considered as devoted solely to two activities: “making a living”, (**L**) and “composing” (**C**). The two are, for the purposes of this argument, mutually exclusive. **L** does not include composing activities, and the extent to which **C** contributes toward an income for Leverkühn will reduce the time he needs to spend generating an income from **L**.

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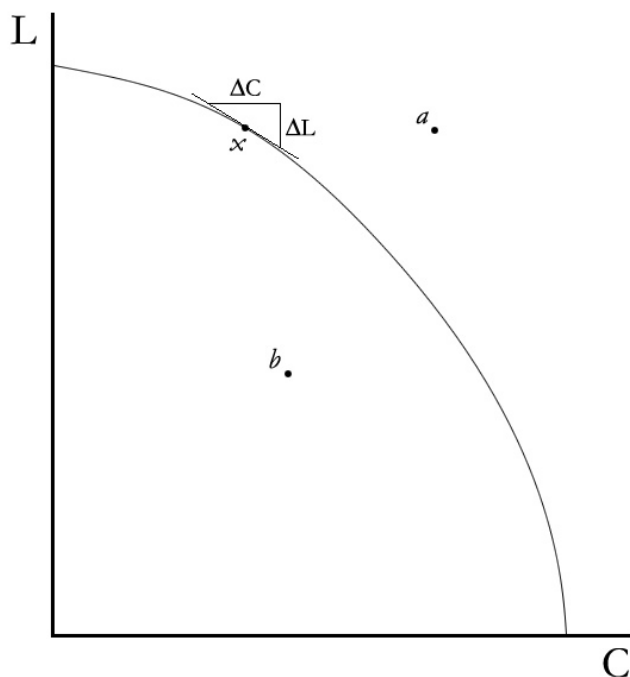
<sup>57</sup> Scherer (2004), 53–116 covers numerous fascinating examples from past centuries.

<sup>58</sup> After the hero of Thomas Mann’s *Doktor Faustus*; the name suggests, appropriately, “living audaciously”.

There are two tools from economics which can be used to express this relationship between **C** and **L**, and the choices facing Leverkühn: the production possibility curve (giving a “supply price”), and indifference curves (giving a “demand price”). Equilibrium between the two indicates that Leverkühn is as well off as he can be given the time and technology available to him.

Leverkühn has a finite amount of productive time to spend on his two activities, and he can choose to divide the time available in many different ways. If he devotes all his time to **L**, he will not be able to compose, and likewise if he spends all his time on **C**, he will have none to spend on activities represented by **L**. The “production possibility curve”, Figure 17, illustrates the trade-off between the two, with the gradient at any given point (shown at  $x$  as the tangent  $\Delta C/\Delta L$ ) indicating the “supply price” of **C** in terms of **L** foregone:

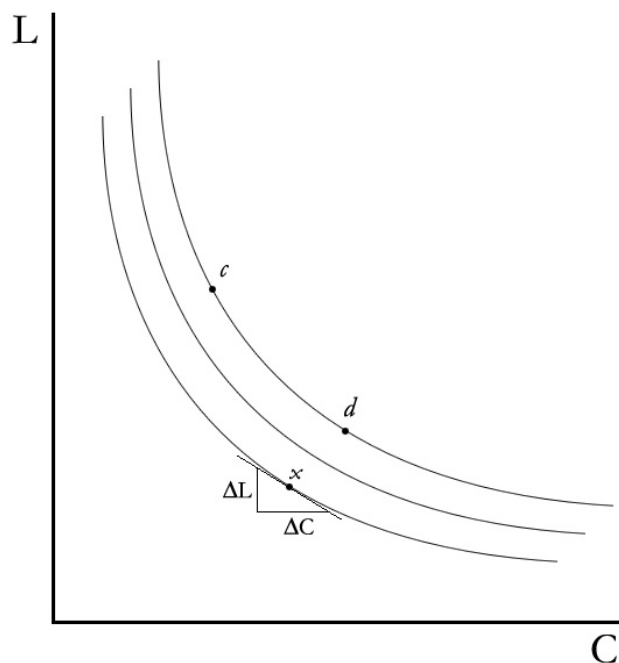
**Figure 17: Leverkühn’s Production Possibility Curve**



All points on the curve are efficient combinations of **L** and **C**; Leverkühn could produce at points below the curve (e.g., at  $b$ ) but such a combination would require time spent doing nothing, which it is assumed that as a “rational” (i.e., an “economic”) man, he will not voluntarily do. Leverkühn cannot produce outside the curve (e.g., at  $a$ ), because to do so would require extra productive time, or some form of technology allowing an increase in productivity for the same time invested, neither of which is available in this example.

The exact combination of **L** and **C** for Leverkühn depends on how much time he wants to spend on **C**, which is as yet unknown; this is the purpose of the “indifference curve”, or curves:

**Figure 18: Leverkühn’s Indifference Curves**



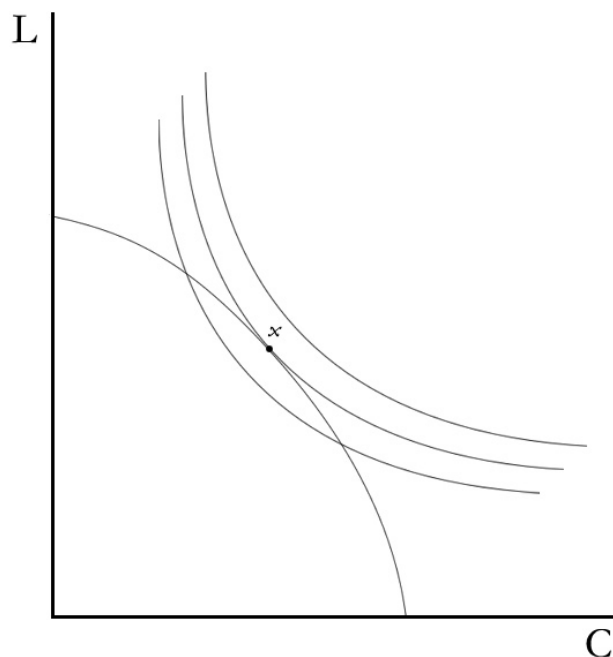
Any point on this curve represents a combination of **L** and **C** to which Leverkühn is indifferent. For example, the points *c* and *d* represent combinations which are equally favourable. One can draw many such curves (three are shown in Figure 18), each representing sets of combinations of **L** and **C** to which Leverkühn is equally indifferent<sup>59</sup>, with curves that are further away from the origin representing more favourable combinations than those closer to the origin. The gradient at any point (shown as  $\Delta L/\Delta C$ , at the tangent at *x*) represents the trade-off between **L** and **C**, that is, the “demand price” of **C** in terms of **L**. The more time is devoted to **C**, the less **L** Leverkühn is willing to give up for a little more time for **C**.

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<sup>59</sup> Indifference curves are normally illustrated as convex, as shown here. This is based on the assumption that successively larger amounts of one quantity are required to compensate (or substitute) for successive reductions in the other quantity, and that averages are preferred over extremes. Consider points *c* and *d* in Figure 18, in which respectively more **L** (at *c*) and more **C** (at *d*) are combined: a point *e* (not shown) representing equal amounts of **L** and **C** could be added between *c* and *d*. The combination at point *e* would represent a more favourable combination of **L** and **C**, because of the assumption that averages are preferred over extremes, and would therefore have to lie on a higher indifference curve. Geometrically, all three points must lie together on a straight line, and therefore the indifference curve containing *c* and *d*, but not *e*, must sag away from *e*, toward the origin.

Combining the indifference curves (Figure 18) with Leverkühn's production possibility curve (Figure 17) immediately shows that, while some combinations of L and C (on indifference curves) are preferable to others, only some indifference curves are attainable given the production possibility curve:

**Figure 19: Leverkühn's Production Possibility Curve combined with his Indifference Curves**



There will be one point of coincidence, at the meeting of the concave production possibility curve with the convex indifference curves, which satisfies Leverkühn on both fronts: his time is spent as efficiently as possible, and he gains the most satisfaction from the allocation of his time between **L** and **C**. This point is shown at *x* in Figure 19.

The “satisfaction” mentioned above is more formally known in economics as “utility”; when one talks of the “greater utility” offered by X over Y, one means that X is more satisfying – in the sense that it satisfies more needs – than Y. Utility for our hypothetical Leverkühn can be expressed as:

$$U = LC \quad (i)$$

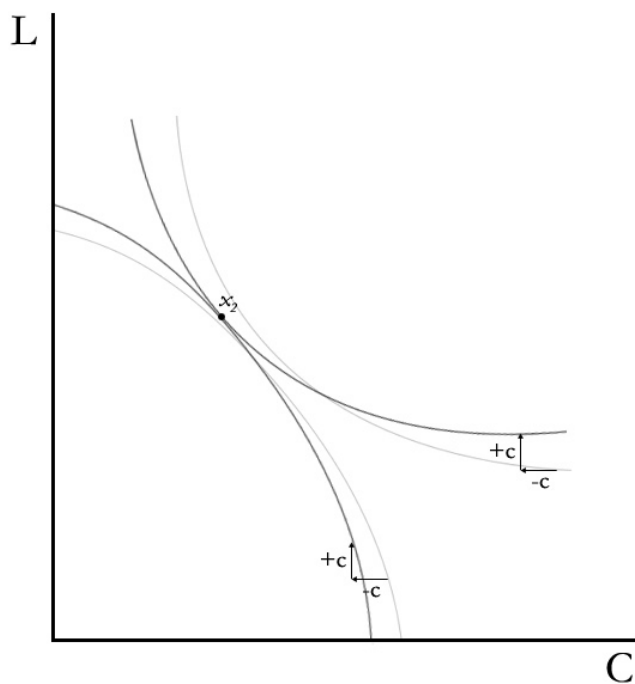
Until now, Leverkühn has produced compositions guided entirely by his muse (or perhaps Mephistopheles), and independently of his composing, he has made a living doing something else. In reality, a composer might be able to offset a certain amount of this “something else”, this **L**, through his composing, but he might be required to somehow tailor his musical work to

this aim. This compromise (meant entirely as an *a priori* deviation from an independent muse, and not an *a posteriori* deviation in the quality of work) may result from the specification of a patron's commission, the desire to satisfy some perceived popular request, or in some other way from the simple need to commercialise his output. Modifying (i) above, allowing for a transfer,  $c$ , of some or all of  $C$  to an increase in  $L$ :

$$U = (L+c)(C - c) \quad \text{(ii), } c \leq C$$

This modification has an effect on the production possibility and indifference curves, tilting them in favour of  $L$  as shown in Figure 20 which the previous curves (of Figure 19) are shown in grey:

**Figure 20: Leverkühn's modified Production Possibility Curve and Indifference Curves**



That  $U$  is a measure of an artist's sense of utility, and not a businessman's, becomes evident if one considers what happens if Leverkühn expends all his compositional energies transferring  $c$  to  $L$  instead of producing any  $C$ ; the term in (ii) of  $(C - c)$  becomes zero, and therefore no matter how much  $c$ -boosted  $L$  he produces, his utility  $U$  will always also be zero. If on the other hand there is no transfer (i.e.  $c$  is zero) – that is, he makes no compromise because his  $C$  is sufficiently “commercial” for his needs – then (i) holds. The conclusion of (ii) is therefore that while there may be some value (or a range of values) for  $c$  that allow  $U$  to remain maximised,  $c$  itself cannot be maximised (that is, transferring all  $C$  to  $L$ ) without a total loss of utility. If

Leverkühn were not a composer, then **C** would have no utility for him in the first place, and (trivially) his utility would be a simple function of **L**.

### Real-World Examples

Leverkühn is a theoretical invention, but there are many and diverse examples in the real world of composers having reached some equilibrium between **C**, **L**, and **c**. The extent to which commissions have involved an extent of artistic compromise is often unknown, but I am reminded of Stravinsky, who is reported to have claimed:

The trick, of course, is to choose one's commission, to compose what one wants to compose and to get it commissioned afterwards, and I myself have had the luck to do this in many instances.<sup>60</sup>

The distinction between compromise and “muse” has sometimes been more obvious, such as in the case of C.P.E. Bach's *Sonatas for Ladies*, or (with a very different motivation) in Prokofiev's *Zdravitsa (Toast to Stalin)*. Others were not keen to compromise, for example Berlioz:

With this passion [for music] love of money has never, under any circumstances, anything to do; on the contrary, I had never any difficulty in making any kind of sacrifice in pursuit of the beautiful, or in keeping clear of the miserable commonplaces which are the delight of the crowd. Offer me a fortune to compose some of the most popular works of the day, and I should refuse it angrily.<sup>61</sup>

Closer to the present day, Charles Ives earned a good income in the insurance business while penning some of the most radical and uncompromising works of the early 20<sup>th</sup> century; Puccini was eager to satisfy his new American public in such works as *The Golden Girl of the West*, but Schoenberg would refuse to countenance a compromise, it was one or the other (**c** = 0 or **C** = **c** and nothing else):

[The real artist] is never in the position to create anything other than what he is urged by his nature and development. Unfortunately, here and there some believe themselves able to adapt to the public, but the betrayal is definitely avenged later. For those who do not bear within themselves in some way the nature of the public will not succeed in pleasing it entirely. One soon notices the falsehood, so the betrayal is mostly pointless anyway.<sup>62</sup>

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<sup>60</sup> Stravinsky and Craft (1960), 92

<sup>61</sup> Quoted in Newmann (1966), 486

<sup>62</sup> Auner (2003), 59–60

In the present day, Maxwell Davies has been so successful in earning an income from his music that, according to *The Times*<sup>63</sup>, he had amassed sufficient wealth to become the victim of an alleged £500,000 fraud, but (if critics are to be believed) he has compromised the spirit of his earlier works in his commissioned *Naxos Quartets*.

Opportunities in the UK today for composers to earn money from writing to order are probably easier to come by than in earlier centuries, given that the institutional context is undoubtedly very different, but public funding (the most likely source of commission funds today) comes with extra-musical strings attached. In addition to the expected questions on the nature of the work for which funds are being applied, Arts Council England ask for detailed profiles of both writer and audience, in terms of age, race, disability, and sexual orientation; moreover, the commissioning organisation is also required to reveal the sexual preferences of its board members<sup>64</sup>. Arts Council England do not describe how this information is used in deciding the success or failure of applications, but given that the Department for Culture, Media and Sport (the Government department which funds Arts Council England) do not require this information to be passed on<sup>65</sup>, and given the proportion of the application form given over to such questions, it appears that it must have some bearing on commissioning policy, despite the lack of obvious relevance to the nature of the work.

In my own situation, described here for context, I attempt – like all composers – to balance **L** and **C**, which I am able (and prefer) to keep entirely apart. I do not consciously work towards **c**, either by writing music for television (or otherwise “commercially”) or by applying for commission funds such as those offered by Arts Council England, and I view my **L** as purchasing a kind of liberty for my **C**. There may be, however, an unconscious **c** gravity that pulls at **C**; it would take a strong-willed composer to entirely ignore the presence of the public when writing for the concert hall, and even the conscious act of “ignoring” may effect a compromise. I am reminded of Boulez who, when asked in 1999 why so few of the radical

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<sup>63</sup> *The Times*, “Composer’s friend arrested ‘after £500,000 disappears’”, 21 May 2007.

<sup>64</sup> See: Arts Council of England, *Grants for the Arts*, application form as of 20 May 2008, questions 21, 22, 28, 29, 30, 31, 33, 34, 35, and 36 (of 36 questions in total).

<sup>65</sup> According to “a spokesman” for the DCMS, in *The Times*, “Arts Funding Row Over Sexual Orientation Demands”, 2 April 2008.

works of the mid-twentieth century had been adopted into the repertoire, responded:

Well, perhaps we did not take sufficiently into account the way music is perceived by the listener.<sup>66</sup>

## Supply and Demand

The derivations of **L** and **C** above lead on to broader questions of supply and demand; the “production possibility curve” corresponding to the “supply price” and the indifference curves to a “demand price” of a composer’s work. This work can be thought of as a very special kind of commodity, produced in finite amounts by just one producer, and then more generally “composition work”, a kind of commodity produced by a set of producers, i.e. composers.

### Introduction

In economics, supply and demand diagrams are used to describe these relations, and to illustrate an equilibrium between these two competing forces. Importantly, supply and demand are thought of in *marginal* terms; on the supply side, the marginal cost is the cost of supplying *one more* unit, and on the demand side, the marginal utility is the satisfaction granted by consuming *one more* unit. The idea of utility and cost at the margin are important because supply and demand change at different rates according to existing conditions; in the simplest terms, if I have just £5, then an extra £1 will be of substantial utility to me, whereas if I have £1m, then that extra £1 is of greatly diminished marginal utility. Likewise on the supply side, if the market consumes just a few widgets, then those widgets may be expensive for suppliers to produce, but if the market consumes a large quantity, economies of scale will force the unit price down: the marginal cost decreases. Developing these concepts, an economist might then examine the sensitivity of a market to a change in marginal cost or utility. A marginal cost that changes rapidly in response to a change in demand indicates *elastic* supply, and marginal utility that is slow to change in response to a change in supply indicates *inelastic* demand.

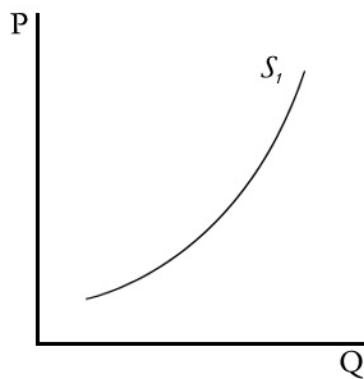
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<sup>66</sup> Stephen Johnson (2002)

## Supply

The supply curve is typically an upward sloping curve, indicating that the quantity produced by suppliers (on the horizontal axis) increases with the available price (on the vertical axis). The line is curved because initially there are economies of scale and small changes in price will cause large changes in quantity supplied, but gradually the changes in quantity will diminish until even large changes in price produce only a small change in quantity. This typical situation is illustrated in Figure 21, the supply curve marked  $S_1$ , in which  $P$  and  $Q$  refer to “price” and “quantity” respectively (a convention followed in subsequent figures):

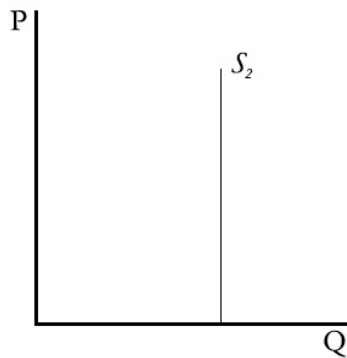
**Figure 21: A Typical Supply Curve**



For an individual composer, is this an accurate illustration? Implicit in the shape of the curve is the possibility for increased production; *can* a composer somehow produce more, and will he do so in response to the price available for his work? For some composers, this may be possible, particularly if they depend upon some  $L$  for income (hourly-paid teaching commitments, for example), and if they can reduce this to focus on the now-more-lucrative  $C$ . There is likely to be a certain amount of resistance to this change, and therefore the supply curve is expected to be inelastic (i.e., it will have a shallow slope). An analogy to this kind of supply would be complex products that involve large factories or lengthy construction processes: a new, higher price will be desirable to suppliers but their ability to increase production is limited.

For other composers,  $C$  may be a very fixed quantity, and have more in common with land: no matter how much people are willing to pay, there comes a point when there is no more land. Likewise, if people will not pay anything for land, the land is still there. This situation is known as “perfectly inelastic supply” and is illustrated in Figure 22:

**Figure 22: Perfectly Inelastic Supply**



In the case of perfectly inelastic supply, a composer would carry on composing at the same rate regardless of the price available; if no-one at all were willing to pay him to compose, he would carry on (surely a familiar situation to many composers); conversely, if his music was in such demand that people were willing to pay vast amounts for it, he would still compose at the same unchanged rate. This scenario is reminiscent of the occasion on which Stravinsky is reported to have been offered \$100,000<sup>67</sup> for a film soundtrack by MGM co-founder Louis B. Mayer. Stravinsky responded that he would require a year to write that much music, whereupon the offer fell through.<sup>68</sup>

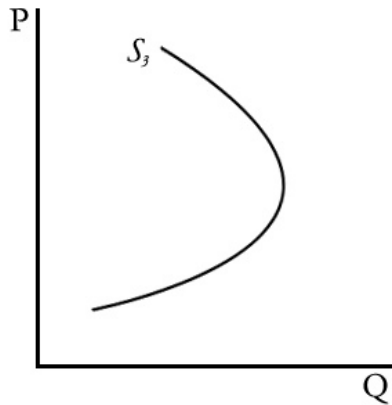
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<sup>67</sup> This translates to well over \$1m in today’s US dollars. By comparison, today’s best-paid film composers receive lower fees – up to \$400,000 for a blockbuster – but can earn much more in soundtrack royalties (an extreme example being a reported \$50m, in the case of James Horner’s *Titanic* score). See Clemmensen (1998).

<sup>68</sup> Joseph (2001), 108–111

One further scenario is more unusual than the previous examples, but is proposed as a theoretical model for a worker facing an increasing wage. The backwards-sloping supply curve is illustrated in Figure 23:

**Figure 23: A Backwards-Sloping Supply Curve**



In this scenario, as the composer receives an increasing price for his efforts, his work-rate initially increases with the price. However, after a certain point, he receives plenty of money, and further money is of little marginal value, and therefore the amount of time devoted to composition declines. This scenario has precedent in history; consider Verdi, relatively early in his career in 1846:

They enjoy themselves; I work from eight o'clock in the morning until twelve o'clock at night and kill myself with work. What a perfidious destiny is mine.<sup>69</sup>

This contrasts with a much later stage in his career, after great success, and after a decline in his output, in 1874:

If I had wanted to be a business man, no one could have stopped me, after *la Traviata* [1853], from writing an opera a year and making myself a fortune three times as big as I have.<sup>70</sup>

Rossini effectively retired from composing at around the age of 37, and stopped composing for money; Donizetti, at the age of 41, wrote:

There are ways of earning a living in a thousand places, but I, used to little, to desiring little, cannot at all adapt myself to earning money. I am not Rossini and haven't his fortune, but

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<sup>69</sup> Quoted in Scherer (2004), 90.

<sup>70</sup> *Ibid.*

when a man has enough to live on and to amuse himself enough, I think he ought to retire and be satisfied.<sup>71</sup>

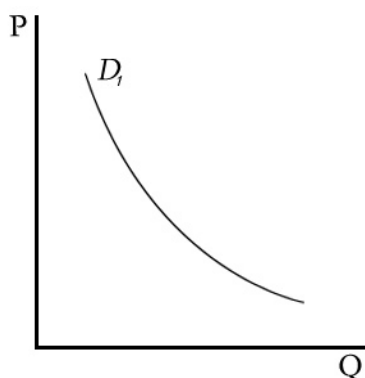
As will be seen when demand curves are introduced below, it is possible for two equilibrium states to exist for a backwards-sloping supply curve, at a high price / low quantity and at a low price / high quantity.

In general, when considering a collective marketplace of composers rather than just one, I will use the shape in Figure 21. Even if individual curves are different, the case for the market in general should follow the typical shape, for the reason that as the price offered increases, more “composing” in total is expected to take place. This is likely to be due to an increased number of individual composers, as well as the effects discussed above upon existing individual composers.

## Demand

The demand curve is simpler to analyse than the supply curve, and is marked  $D_1$  in Figure 24.

**Figure 24: A Typical Demand Curve**



This curve drops off on a steep slope, implying that relatively large changes in price will correspond to relatively small changes in quantity demanded, that is, demand is inelastic. Normally, one would expect the ability of a consumer to substitute one item for another to increase elasticity, but in this case, substitution is much harder (or impossible) to accomplish and therefore demand is inelastic: how many other composers will be producing work that can plausibly act as a substitute, and how many other works by the same composer will provide an effective substitute?

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<sup>71</sup> Scherer (2004), 90

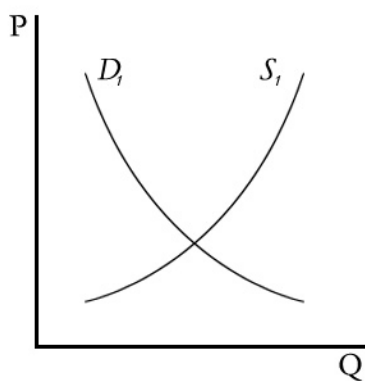
This inelasticity can be contrasted with the case for recordings of classical music, where there is much more elasticity due to substitution in the marketplace. A new recording of a Beethoven symphony faces competition in the form of the great number of pre-existing recordings, therefore the potential for substitution is higher. This explains the trend for CDs to be released and re-released at progressively lower (“full”, “mid”, and “budget”) price-points; a CD will only usually be released at “full” price if some element of novelty is involved (a great conductor, a prodigious performance, etc.). Naxos has taken advantage of this effect, in setting low prices for recordings of standard repertoire performed by unremarkable orchestras. More obscure works, or new works recorded for the first time, are also expected to be relatively more expensive because there are fewer alternatives available for substitution (or none at all, realistically, in the case of new works).

This inelasticity of demand could be described as an “enthusiast effect”, especially in the case of new music. An enthusiastic supporter of either a specific composer, or of a specific group of composers or works, would be unlikely to withdraw his support because of a small increase in price, and he would be unable to substitute cheaper alternatives. It is in the nature of new music, increasingly fractured into ever more specific niches, that it will attract groups of loyal enthusiasts to each niche, reinforcing inelasticity of demand.

### Changes in Supply and Demand

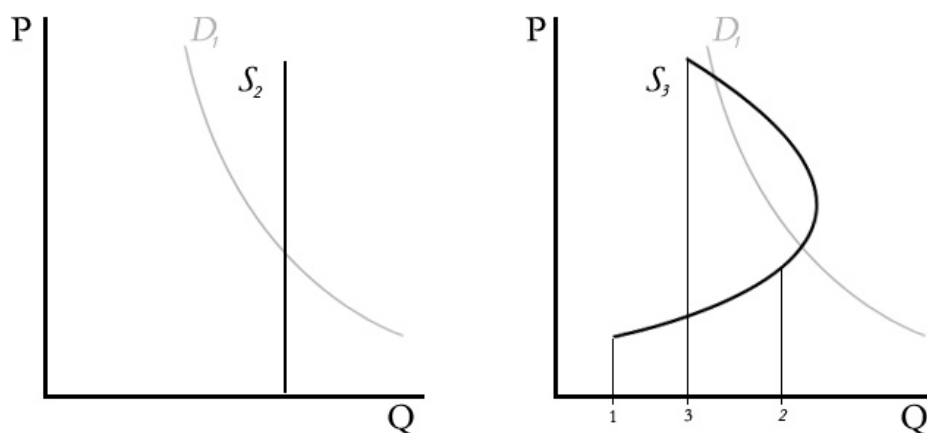
The typical supply and demand curves are combined in Figure 25:

**Figure 25: Equilibrium of Supply and Demand**



The point at which the curves  $D_t$  and  $S_t$  cross is the equilibrium point, and indicates the expected price and quantity for given scenarios of supply and demand. Depending on the shape of the supply curve, the equilibrium point will vary; the two special cases discussed above (perfectly inelastic supply and a backward-sloping supply curve) are shown in Figure 26:

**Figure 26: Equilibrium of Supply and Demand in Special Cases of Supply**



The equilibrium points in the second of these curves require a little explanation; unusually, there are two equilibrium points. Initially (at the point 1),  $Q$  grows normally in line with  $P$ . Between point 2 and point 3, however, marginal cost begins to increase rapidly, supply becomes increasingly inelastic, briefly reaches a point of perfect inelasticity, and then marginal cost becomes negative, the supply curve turns back upon itself, and  $Q$  actually decreases with increasing  $P$ . The two points of equilibrium represent a situation of high productivity but low price (for example Verdi in 1846), and then lower productivity but high price (Verdi in 1874).

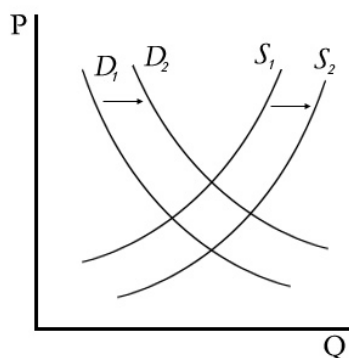
The relative positions of supply and demand curves will affect equilibrium points, and there are several situations in which one or both of the curves will move, also moving this point.

### **New Technology**

A common cause of a shift in a supply curve is the introduction of new technology that affects the marketplace, usually by causing a reduction in the cost of production. This benefits suppliers as initially, they can either produce a larger quantity of the product for the same effort, or they can produce the same quantity for a reduced effort (and therefore a greater profit). Equilibrium is reached as overall product availability (quantity) increases, causing a surplus of the product, which causes a reduction in the price of the product, and therefore an increase in demand.

In some circumstances the demand curve can also shift; both shifts are illustrated in Figure 27, and described below:

**Figure 27: Shifts in the Supply and Demand Curves**



In terms of the composers under discussion, three changes have had (or are currently having) a significant impact:

- 1) Software that aids the composer, notably score-writing software such as Finale or Sibelius: less time is required to prepare scores and parts, and it is easier to prepare performance materials. Music which does not require traditional notation is also affected, notably electronic music, for which the software tools are now much more readily available. The effects are greater productivity among composers, and increased number of composers overall due to the reduced “barrier to entry” to the marketplace; the result in supply-and-demand curves is a shift in supply (from  $S_1$  to  $S_2$  in Figure 27).
- 2) Increased access to the public, and increased ease with which the public can find the composer, through the development of web services. This is the effect described in the previous chapter, associated with the “Long Tail” graph; a greater range of music is now available to the market, which is equivalent to an increase in quantity caused by increased production (again, a shift from  $S_1$  to  $S_2$  in Figure 27). The demand curve may also be affected, as greater awareness of music available might cause a rightwards shift in the demand curve (from  $D_1$  to  $D_2$  in Figure 27).  $Q$  always increases, and depending on the extent of the shifts in both curves,  $P$  may either rise (if the supply shift is greater) or fall (if the demand shift is greater).
- 3) Digital file formats which do not require a physical existence, e.g. the MP3 format. Coupled with distribution networks such as iTunes, this is a similar effect to that described in (2); the reduction in production costs and the corresponding increase in supply will cause a drop in price (as before, a shift from  $S_1$  to  $S_2$  in Figure 27). However,

the product is digital and, once in existence, there is no additional cost of production, so the supply is essentially infinite. This should theoretically cause a drop in price to zero (which would correspond to an equilibrium point lying on the Q-axis, not shown in Figure 27). In reality, this has begun to happen in the form of subscription-based services (such as Rhapsody and Naxos Music Library), in which a fee is charged for unlimited access to the “infinite supply”.

### **Subsidies**

There are two subsidies which have a direct effect on these supply and demand curves:

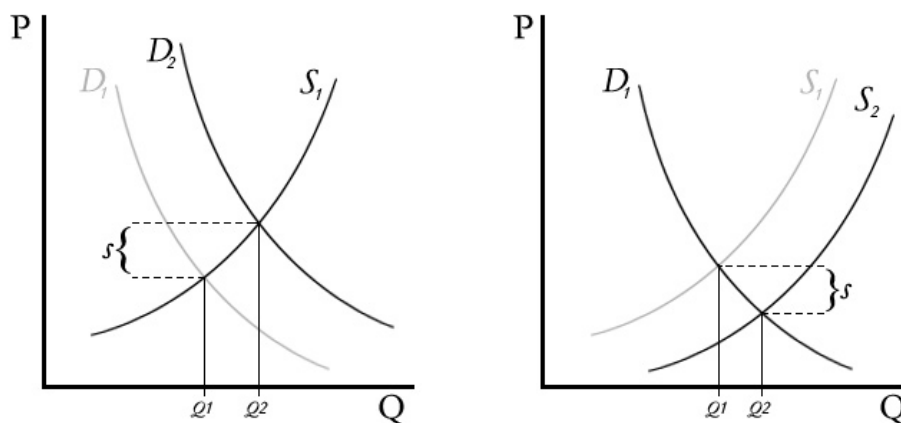
- 1) Subsidies to the composer (e.g. in the form of grants or publicly-funded commissions)
- 2) Subsidies to the public / audience (e.g. ticket price reductions due to publicly-funded concert halls)

For the individual composer, as already discussed, a subsidy may cause an increase in productivity (a greater **C** and smaller **L**) and therefore a rightward shift in the individual supply curve. For the market in general, an upward (equivalent to rightward) shift is also expected, but it is limited by the amount of subsidy available. The shift may come from increased productivity from existing composers or from new composers entering the market (or equivalently, previously out-of-work composers returning to the market).

Subsidies to the audience, i.e. a reduction in the price paid, will result in an upwards (or rightwards) shift in the demand curve, up to the limit of the subsidy, increasing the quantity consumed.

Both subsidy scenarios are illustrated in Figure 28; in both of these diagrams the subsidy is marked  $s$  and the corresponding increase in quantity is from  $Q_1$  to  $Q_2$ :

**Figure 28: Effects of Subsidies (a) on Demand and (b) on Production**



### Another Look at the Long Tail

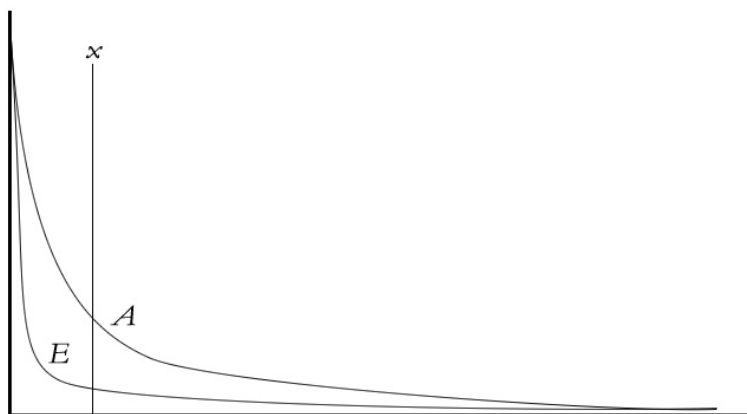
Of the effects on supply and demand listed above, the effect of a “Long Tail” scenario (coupled with digital formats, such as MP3 for sound or PDF for printable material) is the most significant to the idea of a new “Age of Mass Connection”. The argument as described by Anderson appears straightforwardly to imply a bright future for activity at the tail, such as the tail of new music in the context of all classical music. However, Anita Elberse, writing in *Harvard Business Review*<sup>72</sup>, has conducted analysis to determine more precisely the shape of the “Long Tail”. Elberse believes that sales are very concentrated in the “head” of the distribution curve, and that the “tail” is so long and thin as to be nearly worthless; moreover, she asks whether the tail is getting longer and fatter with the arrival of new online channels, or if the opposite is happening (i.e. the new channels are boosting sales at the head, and not the tail).

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<sup>72</sup> Elberse (2008)

Figure 29 shows the shape of the “Long Tail” as described by Anderson (marked **A**) against that described by Elberse (marked **E**):

**Figure 29: Two "Long Tail" Shapes**



Essentially, Elberse claims that when considering digital goods against physical goods, the “head” accounts for a greater market share in a market of digital goods than in a market of purely physical goods, which appears to directly contradict Anderson’s theory. Elberse does not however take into account the effect of stock-holding, which (q.v.) prevents the tail from being sold in the first place, or rather, she compares a similar number and range of physical and digital products, and concludes that the tail is thinner for the latter. Anderson’s contention (which Elberse’s data supports) is that in the new, stockless digital world the number and range of products is vastly increased, that the tail accounts for the majority of the increase, and is therefore a genuinely significant part of the market.

Elberse provides some figures which actually support Anderson’s hypothesis, she refers to the example of online music streaming firm Rhapsody. In a three-month period of 2006, of 32 million customer transactions (i.e. streaming downloads or “plays”), “the top 10% accounted for 78% of all plays, and the top 1% of titles for 32% of all plays”. This statistic is intended to support the idea of a thin, meagre tail; but there were 1 million tracks to select from, and therefore 1% represents 10,000 tracks, which is “far more than the number of titles most US radio stations play in a given year, and ... equal to the entire inventory of a typical Wal-Mart store”<sup>73</sup>. This example supports Anderson’s hypothesis: the top 1% of titles and 32% of sales for the digital retailer accounts for 100% of the typical inventory (and therefore 100% of the

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<sup>73</sup> Elberse (2008)

sales) of a retailer of physical goods. This implies that 99% of the digital titles on sale are now available, and otherwise would not be, and that they account for 68% of the digital retailer's sales.

Anderson does not claim that the new era signals the end of the blockbuster; if that were true, then there would be only "tail", and no "head". The value of the "Long Tail" is in the amount of music which is now easily available and in demand, and that was not available before. Elberse quotes another example, as part of her advice to producers to allocate resources to blockbusters and not to the promotion of obscure products, from Nielsen SoundScan: "of the 3.9 million tracks sold in 2007 (the large majority for 99 cents each through Apple iTunes), an astonishing 24% sold only one copy, and 91% – 3.6 million tracks – sold fewer than 100 copies"<sup>74</sup>. Elberse offers this example in support of the advice that blockbusters will still exist, and that digital distribution is a valuable source of revenue for blockbusters and that they should not be neglected in favour of supporting obscure tracks. This is true; however the "astonishing" aspect of Elberse's SoundScan statistic is that, as tracks are all sold for the same amount (at least on iTunes), 91% of sales (as well as tracks downloaded) are accounted for by tracks that sold fewer than 100 copies each. No physical retailer would be able to hold stock on that basis, but it is straightforward for a retailer of digital goods to meet this demand; it is also profitable, as the cost of sale is virtually eliminated, and the marginal supply cost is zero. Regardless of the lesson for producers of blockbusters, the producer of relatively obscure new music can surely draw comfort from this analysis of the Long Tail.

Elberse also examines the customers themselves, in order to investigate the effect of a longer tail on customer behaviour. On one hand is the claim that increased diversity of available choice will lead to more diversity in selection, as people recommend their obscure finds and explore the tail. On the other hand, Elberse claims that in the Long Tail world, the "head" grows, and actually sucks in customers from the "tail". This is investigated by examining the recommendations and ratings given by users of Quickflix, a large online library of (physical) DVDs<sup>75</sup>. Two of Elberse's findings that are of great relevance to the effect of the Long Tail on new music are as follows:

- 1) Customers regularly taking items from the obscure "tail" end tend to give lower ratings to obscure items than customers who rarely take obscure items.

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<sup>74</sup> Elberse (2008)

<sup>75</sup> Although these products are not digital, "Long Tail" effects should still apply, because the range of items available is very large in comparison to a bricks-and-mortar rental library (such as Blockbuster Video).

- 2) These same customers – those who regularly take obscure items – give higher ratings to “blockbusters” than the infrequent customer, or customers who only take blockbusters.

The frequent customers could be described as “connoisseur”, the infrequent customers as “casual” or “marginal”. These intriguing findings seem to suggest that the connoisseurs, although the main customers of the “tail”, are also those most likely to put off the casual, marginal customer from exploring obscure items, which contradicts the proposal that the Long Tail is a vehicle for driving uptake of the obscure. Indeed, if casual customers tended to heed the advice of the connoisseur (not a hypothesis that Elberse tests), then they would tend towards blockbusters and away from the obscure, which would result in the large head and ultra-thin tail that Elberse suggests is the reality. In new music (anecdotally), I have often witnessed this effect; contrast the previously-discussed “hits” of new music (such as Birtwistle’s sell-out *The Minotaur*) with the obscure “anti-hit” typical concert of new music.

The Long Tail may therefore be good for the diversity of music, and new technology may increase the ease of access to new music, but this combination may also create more connoisseurs, who in turn are not necessarily very healthy for the development of large audiences. The connoisseur knows “quality” (at least, objective quality of production, if not subjective quality of creation) when he sees it, and makes his recommendations accordingly. With new music, the objective quality of production (whether this is the staging and presentation, level of musicianship, or the craftsmanship of the composer) is often all the information with which the listener can form a judgement. The quality of production is usually linked to price (a Hollywood blockbuster typically costs far more to produce than a European art-house movie; a Royal Opera House production is much more expensive than an Edinburgh Fringe show, both to mount and to attend), and therefore price or cost becomes the only objective metric. In the behaviour of the customer, the logic then reverses: the blockbuster *must* be better, because of the millions spent on production. This “logic” bears out Elberse’s advice to the producer to focus on the blockbuster; even big-budget flops usually make far more than the small-time production.

If this measure of “quality” is the means by which customers decide on their purchases, then it follows that Elberse is correct, and the head will grow at the expense of the tail. However, another key part of Anderson’s argument is the importance of search filters. Aspiring connoisseurs and adventurous “casuals” do not usually pick selections from obscurity by random; instead, there are search filters to assist in finding selections that are relevant to the tastes of customers. Relevance (a product of search filters) is therefore of much greater importance than the amount of money spent on production, or the recommendations of

unknown “connoisseurs”. Relevance also drives groups to form; these groups – or “social networks”<sup>76</sup> – share distinctive features with the Long Tail.

### Group-Forming Networks

If markets are viewed as a type of network – and several markets, such as for telephony, literally are a network – and the source of value in a market is the potential for a transaction to occur, then the value in a network-market is the potential for connection between points. There are essentially three types of connection, and hence three types of network:

- 1) One-to-many: for example a TV or radio broadcast network.
- 2) One-to-one: for example a telephone or fax network.
- 3) Many-to-many: a “group-forming network”, for example a social network or the World Wide Web.

For very small network sizes – beginning with the smallest possible, of just two points – the number of connections, that is potential transactions (which I am considering as a proxy for “value”), will be similar for each type of network. However, the three types grow very differently. In the first case, the only possible connection is between the broadcaster and those who choose to tune in; growth in value is directly proportional to the number of participants, and is known as Sarnoff’s law<sup>77</sup>:

$$\text{Value} \propto N$$

In the second case, growth is faster; the number of potential connections for each user is equal to  $N - 1$ , and so the total for the whole population is:

$$\frac{N(N-1)}{2} = \frac{N^2 - N}{2}$$

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<sup>76</sup> Despite the popular use of the term “social network” to mean purely an online network (Facebook, YouTube, MySpace, etc.), such networks also evidently exist in the physical world, and can be as simple as a network of friends, colleagues at a workplace, or a church congregation. The key difference is that online, a personal acquaintance or physical meeting is not required, whereby the potential for a network connection to exist, and a transaction to take place, is enhanced.

<sup>77</sup> After David Sarnoff, founder of NBC and a pioneer of American commercial radio and television.

In this type of network, value is therefore proportional to the square of the number of participants; this is known as Metcalfe's law<sup>78</sup>:

$$\text{Value} \propto N^2$$

In the case of a many-to-many network, subsets of  $N$  can be formed by taking each member of the network in turn, and either including them or not including them. This leads to a total of  $2^N$  possible subsets, but this includes  $N$  sets of just one member, and the case of one set of *no* members at all. Therefore, the number of possible sets of more than one member is:

$$2^N - N - 1$$

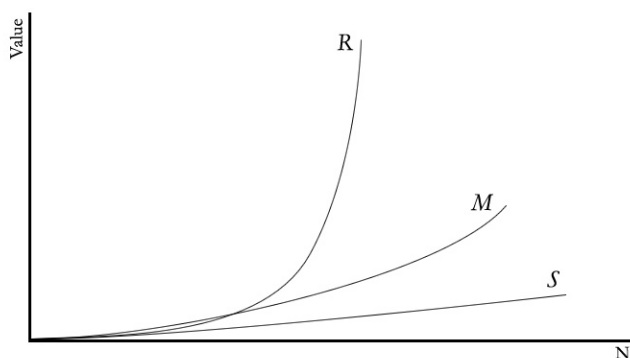
This leads to the assertion of Reed's law<sup>79</sup> that value scales exponentially with the size of the network:

$$\text{Value} \propto 2^N$$

Although this is mathematically a true description of the potential value of a many-to-many network, many of the possible subsets have a near-total overlap, rendering the additional value of a large set that has just one extra member questionable in reality, although large mathematically.

For comparison, these three laws can be represented graphically, as in Figure 30 (in which Reed's law is indicated **R**, Metcalfe **M**, and Sarnoff **S**):

**Figure 30: Sarnoff's law, Metcalfe's law, and Reed's law**



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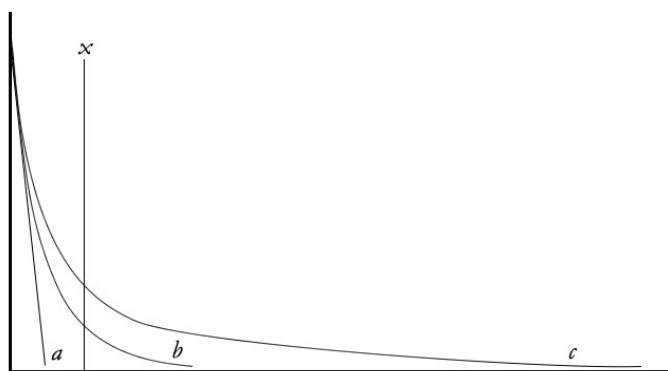
<sup>78</sup> After Robert Metcalfe, inventor of Ethernet; he formulated his law to describe Ethernet but it applies to all such one-to-one networks.

<sup>79</sup> After David P. Reed, a pioneer in the development of TCP/IP (the protocol used by the Internet). Reed's law was first asserted in "The Law of the Pack", *Harvard Business Review*, February 2001.

Initially, as already stated, all three grow at similar rates, but soon Reed’s law grows extremely rapidly (Metcalf’s law yields greater value for very small networks, until  $2^N > N^2$ , which occurs at  $N = 4$ ). The effect of these growth rates on the world of classical music is evident in the relative success of – and potential for – classical music (and specifically new music) on the radio and the Internet, discussed in earlier chapters.

The three curves in Figure 30 can be re-drawn as demand curves of a given population, in order to illustrate the relative potential for demand in network-markets of the three types, as shown in Figure 31<sup>80</sup>, with Sarnoff corresponding to *a*, Metcalfe to *b* and Reed to *c*.

**Figure 31: Demand Distribution for Different Networks**



It will immediately be noticed that curve *c* resembles a “Long Tail” curve; the line at *x* indicates a notional “head”. The value of a network of a given size is equivalent to the area under the network’s curve between the origin and any point on the horizontal axis. The three curves are not necessarily drawn to scale; if, as Elberse argues, the correct shape of a Long Tail is very skewed towards the head – more so than traditional “networks” (such as retailers of physical goods, in my analogy of networks with markets) – then curve *c* would not provide a larger area until progressively further along the horizontal axis (as was shown in Figure 30, in which *R* is initially of lower value than *M*). The horizontal axis represents marginal value, that is, the extra value which one additional member of the network-base adds. It is therefore consistent with Anderson’s theory of the Long Tail that a group-forming network will add significant value as it grows. Anderson’s theory is thus reconciled with Elberse’s work; large values of *N* may be required before a group-forming network outperforms other types of network-market.

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<sup>80</sup> This graph is derived by taking Figure 30 at a given value of  $N = P$ , and drawing the vertical axis in Figure 31 as the range 0 to  $P$  where  $P$  lies at the origin. The horizontal axis in Figure 31 represents the marginal value added by each extra population member.

## What Kind of “Good” is New Music?

The discussion of the “Long Tail”, as described by Anderson, is particularly valuable for digital consumer products, such as MP3s, and also for large online retailers of physical goods such as CDs and books. It may also provide valuable insights for many other types of good, but in investigating the economics of *new music*, it will be helpful to understand what type of good, precisely, new music *is*. Is it a special kind of good, subject to different rules?

When considering the supply and demand curves for the “market” of composers’ music, as I have shown in Figure 26, the type of good that is produced by the market can have a dramatic effect on the shape of these curves and the location of equilibrium points. Implicit in the interpretation of demand, until now, has been the idea that as the price of the good falls, demand will rise. This is the standard case for demand, much as the standard case for supply (as in Figure 21) argues that supply will increase as the price available in the market increases. As I have shown, this is not necessarily the case for the supply of new music from the individual composer.

Various categories of goods have been proposed by economists, and I will now consider some of these as candidates for a description of new music. The following four types of good all differ on the perception of the *quality* of the good, which is usually essential to establish in order to know whether the price is reasonable or not. The difficulty of objectively judging the quality of new music is the problem addressed by considering different types of good.

- 1) Search Good: the quality of the good is known to all beforehand, and therefore price competition is keen. This is a good description of many mass-produced commodities, but does not, almost by definition, describe new music.
- 2) Experience Good: the quality of the good is initially unknown, and is established during the experience of consumption of the good. Typically, experience goods have a low price elasticity, because a low or discounted price (which would be expected in the case of high price elasticity) could cause a perception of low quality. That is, if the quality is unknown beforehand, but the price is low, then that is interpreted as indicating that the quality will be low. As a description of new music, “quality” is certainly unknown before experience, but quality is still very debatable even after the experience.
- 3) Credence Good, also known as a Post-Experience Good: if the quality is unknown or difficult to ascertain both before *and* after consumption (or experience), then the good is referred to as a credence good, a typical example being “education”. Consumers of credence goods may rely on third-party information to establish the quality, or

consumers may take the price itself to be the only possible indicator of quality. Third-party information, in the context of new music, could be the seal of approval offered by government subsidy, for example Arts Council support, which offers an explanation for the emergence of a perceived “establishment” in many artistic fields. Higher prices for both credence and experience goods rely on the reputation of the producers of the good; this is also true for new music, where a composer’s reputation for quality (perhaps merely equivalent to the length of time he has been able to sustain a career) can lead to a higher price for commissions, a higher ticket price at the concert hall, or a larger audience.

- 4) Veblen Good: a theoretical class of good, a Veblen good describes a good that experiences a *rise* in demand as price rises, as opposed to the expected fall. This could be the case where price is considered an indicator of quality, and therefore high price equates to high desirability (as is the case, for example, with luxury goods). Veblen goods are related to the phenomenon of conspicuous consumption, a preference for “exclusive” (i.e. expensive) goods, or a “bandwagon” effect in which people will buy a good simply because other people are buying it, even if the price rises in line with scarcity of the good. In the past, commissions of new works by fashionable composers could certainly have qualified as Veblen goods, and this may also be true today in particular cases, but it is unlikely that new compositions could in general be considered Veblen goods.

New music may not be a type of good that can be thought of in terms of *quality* at all. There are types of good, examples of which include water, air, national defence, and street lights, which do not easily fit into the aforementioned categories. One system for defining the type of good is to consider the extent to which it is *rivalrous*, and the extent to which it is *excludable*. The rivalrousness of a good is the extent to which the use of it by one person reduces the availability of that good for another person, and the excludability of a good is the extent to which people can effectively be excluded from using the good.

Figure 32 shows how these concepts can describe a range of goods:

**Figure 32: Rivalrousness and Excludability**

	<b>EXCLUDABLE:</b>	<b>NON-EXCLUDABLE:</b>
<b>RIVALROUS:</b>	<b>Private Goods:</b> food, cars, toys	<b>Common Goods:</b> water, fish
<b>NON-RIVALROUS:</b>	<b>Club Goods:</b> cable / pay TV; <u>new music?</u>	<b>Public Goods:</b> national defence, air, lighthouses, street lights; <u>classical music?</u>

Classical music (or at least the well-known and widely circulated art-music of the past), when taken as an abstract concept, can be considered a public good. As soon as it takes on a concrete form (for example a published score, a professional performance, or a commercial recording), it is no longer non-excludable. New music, when freshly composed, is excludable, because the composer is able to control the work, not only through copyright (which grants a short-term monopoly on the good to the composer), but until the work becomes widely circulated, he has the option to actively prevent performance or publication, to keep the work secret, or more drastically to destroy the work utterly in an *auto-da-fé*. As with the public good interpretation of classical music, as soon as the composer allows the new composition to take concrete form, then that concrete form is a private good. However, both classical music as a public good, and new music as a “club good”, are non-rivalrous (except in concrete, tangible forms such as scores or CDs), i.e., one person “consuming” or experiencing the good does not in itself prevent another person from doing the same. This is a significant point of similarity with digital goods.

The effect of the proposed new Age, or the effect of Long Tail economics, could be to enhance the non-excludability of new music. For a composer’s work to be truly non-excludable in the past would have required that work to be widely circulated, and (additionally) easily accessible in the sense that a painting in a public gallery is easily accessible, which would not have been a straightforward accomplishment. With group-forming networks, digital distribution, and globalisation, however, the ability for any one person to add to the collective sum of human knowledge – the “global public good” – is significantly enhanced, and if that person is willing to make his efforts available freely (as in, for example, contributions to Wikipedia), then there is no conflict (or at least reduced potential for conflict) between individual moral rights and the work as a public good.

Problems arise with public goods when those goods, inevitably, must be paid for in some way, usually (such as in the case of national defence or street lights) by the taxes levied by the state. New music has – at least since the New Deal in the US and the rise of social welfare in Europe, to say nothing of the artistic policies of the Nazi and Communist regimes – been paid for, or

subsidised, by the state. Unlike in the case of national defence, the public have a choice in whether to participate in the products of state subsidy for new music, and this aspect, along with the inconsistency in output for the same financial input, results in certain consequences for new music.

Public financing of new music inevitably leads to an “establishment” of new music performers and composers, membership of which is increasingly hard to attain for newer artists. The quality of outcomes of public investment (i.e. new compositions) is hard or impossible to measure by funding bodies; therefore these outcomes resemble the “credence goods” discussed above. In common with other credence goods, if public funding is not present, then a new work is considered somehow suspect, because the alleged experts responsible for public funding have apparently not seen fit to fund it. However, once a set of artists receives funding, they must continue to receive funding, otherwise it will reflect poorly on the initial “investment decision” and may lead to allegations of the misuse of public funds. New artists are therefore crowded out, because the pool of funding available is naturally not limitless.

The construction of an establishment will then inevitably lead to conservatism. The “credence” aspect encourages artists to seek public funding as the path to a successful career, and they may feel that they will be more likely to receive this funding if they emulate established artists, or otherwise tick whichever boxes are in current vogue with the establishment. This pattern arises not only from the petty sexual politics and utilitarianism of Britain’s Arts Council and Department for Culture, Media and Sport, but was also evident in the unpredictable favours of the Nazi regime, and in the ideology of Soviet communism. New music itself is likely to become bland and conservative; public funding of controversial art tends to cause an outcry – which may indeed be the artist’s intention – but will also make the commissioning of further controversial art more difficult, either because of popular pressure on a democratic government, or the perception of transgressions against the ideology of a totalitarian regime.

Those who have received funding the longest are the most senior members of the establishment, and the fact that they have received public funding for a long time – again, because of the “credence good” aspect – is taken as an indicator of the great quality of their output. The funding bodies have a vested interest in these senior members (to admit a poor investment over a great period of time would be a terrible failure), and these members naturally have a vested interest in the continuation of their funding. The system, which initially brought security to new artists, becomes stale and perpetuates itself, and new art becomes harder to come by, except for the occasional faddish trend or trendy fad.

Despite the existence of such a conservative establishment, there are practical models which are available to composers unwilling or unable to take part in public funding, and which – because of the opportunities offered by the new Age of Mass Connection – may prove to be both successful and sufficiently lucrative.

## **Suggested Models for New Music**

I will conclude my analysis of the economics of new music by considering a number of different models for financing new music. These models follow directly from the previous discussion of the type of good that new music represents, and from the idea that copyright will be harder to enforce in the new Age of Mass Connection. The same technology that makes the new Age a great opportunity also threatens traditional revenue streams. Once released, a digital artwork can be easily copied and distributed by anyone; in this sense, digital art is a *de facto* public good.

One typical problem associated with the introduction of a public good is the “free rider”. If a public good is to be supplied by the government (for example national defence), then it is used by everyone equally, and everyone is assumed to have paid for it in the form of taxes. However, some may withhold their taxes (either illegally, or legally, through tax loopholes or subtle accounting), and will benefit from the public good without having paid for it. It follows that if one rational person is more willing to endure the consequences of avoiding paying for a public good (e.g. to pay his accountant, or run the risk of prosecution) than to pay their fair share in the first place, then many rational people might choose to do the same thing. In the case of national defence, the nation must still be defended, and the government will still finance defence in some other way (such as borrowing), or run the risk of an invasion.

Either way – through free riders or copyright infringement – I have argued above that new music, once created, can become a form of non-rivalrous, non-excludable public good. Once released to the public – i.e. once it is in the form of a public good – some members of the public may pay for the new art, and some may choose to free-ride and benefit from the payments of others (illegally, by copying, or legally, by offering free performances, or even by playing from memory rather than from a bought score). If too many choose not to pay, then the artist will lose money and may choose not to allow his work to become a public good in future, or even not to compose or perform any more at all. To take the extreme (but plausible) case, the artist may only be paid for the work once, after which the work will be copied and distributed freely. However, the very fact that many choose to ride free ensures that the artist’s work is ever more widely spread, and so the artist can potentially become more successful. This is the “free rider” dilemma as faced by the artist: allow the music to spread freely, but receive only minimal

payment; or receive full entitlement of pay, but encumber the free spread of the music. The dilemma is especially acute in the new Age, in which one (paid-for) digital product can be copied and spread at no cost by everyone: it is very easy to be a free rider, and conversely it is very easy for one artist to deliberately offer free rides, adversely affecting the chances of another artist to offer “rides” at full fare. The more free riding that takes place, the less easy it is to charge, and the less easy it is to earn an income by creating new music as a public good.

A number of solutions have been suggested to the typical “free rider” problem which can be applied to the composer’s specific dilemma<sup>81</sup>.

### **The Tip-Jar and Micropatronage**

The simplest solution is to offer the work free of charge to all, but to allow those who are willing to offer a payment of their choice. This, the “Tip-Jar” model is the model that was used by Radiohead (q.v.), and is the same as that used by buskers, bar-workers, and taxi drivers around the world on a daily basis. It is straightforward to set up an online, virtual “tip-jar”, allowing those who come across the composer’s work to make their contribution at a time of their choosing.

“Micropatronage” works on essentially the same principle as a tip-jar, but micropatrons might contribute small amounts on a regular basis, and might support the composer prospectively rather than support individual works, retrospectively. Clearly, neither of these models is designed to absolutely prevent free riders from making use of the composer and his work, but they do allow those who might otherwise have taken the work for free to make a small contribution. In other words, they match demand to supply to find an equilibrium price for every individual transaction, rather than for the market overall.

### **The Assurance Contract**

The “assurance contract” has seen recently renewed interest as a model, but it is not new; it is essentially the same as that used by Mozart, for example, in funding new works by public subscription. In an assurance contract, a certain amount must be pledged (to the composer, or alternatively to the publisher or promoter) before the score is released (or the performance takes place). Once the work is released, it can be made available to everyone free. This form of contract prevents many of the problems associated with free riders, and ensures that everyone who wants to be paid has been paid a sum with which they are *a priori* satisfied.

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<sup>81</sup> Some of these schemes are discussed under the collective term, the “Street Performer Protocol”, in Kelsey and Schneier (1999).

Contemporary examples of assurance contracts include the software firm Blender 3D, which produced software that was in great demand in a specialist area, but had to charge a hefty license fee in order to sustain their operations and recoup their investment in the software. Their solution was to enter into an assurance contract to raise \$100,000 (which they raised successfully from the online community), in exchange for which they made the software available under the GNU license, essentially making the software freely available while protecting the intellectual property of the owner. There is no reason why the GNU license (and its relations, for example the Creative Commons license) cannot with small semantic modifications be used for compositions, which differ from software only in the apparatus (musician or microchip) executing the instruction set. Such licenses have proved highly successful in software, and seem to foster great innovation through the huge diversity of variants and derivations which are simply not possible under a straightforward commercial model. One need only consider the Linux operating system, which is freely available (under GNU) but which has spawned a valuable industry and which dominates the market for Internet servers, out-competing such ultra-commercial firms as IBM and Microsoft, themselves firmly wedded to traditional licensing models.

I have made my compositions available freely online, in sets of scores and parts in PDF format, under the Creative Commons license; the “credence good” caveats remain, and the proof for potential performers lies in playing my works, but the fact that there is no barrier (technical, logistical, or financial) to accessing the music seems in my experience to be a great encouragement to musicians. The use of a well-known license, and a list of previous performers for each work, counters some of the fears associated with a “credence good”, and serve to further eliminate any potential barriers.

### **The Threshold Pledge / Fund-and-Release**

One problem with the assurance contract is that, for someone willing to pay towards it, there is no guarantee that others are also paying towards it. The fear might be that if I pay towards the work, but few others do, then my investment will be in limbo forever, and that the work will never be completed as a result. The “threshold pledge” (also known as “fund-and-release”) scheme is a variant on the assurance contract, in which a trusted third party either holds the funds or administers pledges on behalf of the investors, and then once a pre-agreed threshold is exceeded, the contract is signed with the artist and the funds are released in accordance to a pre-agreed schedule. If the threshold is not exceeded by a given date, the funds are returned or the pledges are revoked. Such a scheme will almost inevitably incur administration costs, but could

prove more attractive to investors, many of which (in an online world) will not have a personal relationship with the artist.

One variant on this scheme was devised by (perhaps unexpectedly) Cliff Richard, who offered his 2007 album *Love* for download at £7.99, initially. For each person that pre-ordered the album, the price dropped by a penny to a floor of £3.99. The album was then sold to everyone (including those who registered first) at the floor price when released. Although this only required the commitment of 400 people before the price was fixed at a budget £3.99, the scheme cleverly avoids the perception of cheapening the music in the way that a “half price” offer could.