

Google GCar: The Ten Essential Components (each worth a point)

<i>Component</i>	<i>What needs to be done...</i>	<i>Comments</i>	<i>Grading template</i>
Cost of equity	<ul style="list-style-type: none"> • Compute the unlevered beta for auto companies and lever using Google's debt to equity ratio. • Use an equity risk premium that has a component for country risk in it. 	<ul style="list-style-type: none"> • Most groups did the right thing, though the bottom-up beta did vary depending upon how the debt to equity ratio for comparable firms was computed. (If you used the simple average of the D/E ratio, you got a lower beta... That is fine) • You cannot use Google's beta or a weighted average of Google's beta and the fitness beta to evaluate this project. 	1a. Used beta for company, instead of beta for project (-1 point) 1b. Used wrong debt ratio for leveraging (for Google) (-0.5 point) 1c. Did not adjust ERP for global exposure (-0.5 point) 1d. Other: _____
Debt Ratio	Convert operating lease commitments into debt (Will yield about \$13-\$14 billion, depending upon assumption made about lump sum in year 6) by taking the present value of leases, using the pre-tax cost of debt.	Since you are doing cash flows to the firm (pre-debt), there is no need to forecast lease or interest expenses for this project.	2a. Used wrong discount rate in computing present value of leases (-0.5 point) 2b. Other (-0.5 point)
Distribution capacity.	By investing in this project, you find yourself running out of capacity in year 4 instead of just year 9 (give or take a year). The opportunity cost is therefore the present value of spending in year 3 versus year 8.	If you do not show the savings in year 8, you are considering the incremental cost but not the incremental benefit. (You can also show the present value difference in year 3, instead of the total investment)	3a. Did not show savings from not having to invest in year 6 (-0.5 point) 3b. Other (-0.5 point)
Sunk Costs	The money that has already been spent is not only a sunk cost, but it should not be part of capital invested, since it was expensed before you did the analysis.	If you did not consider sunk costs as part of your investment, don't net it out of the initial investment.	4. Counted sunk cost in cash flows, either directly or as a tax benefit (-0.5 point)
Allocated G&A	You should add back the portion of G&A that is allocated. However, remember to multiply it by (1- tax rate) since you are working with after-tax numbers.	Adding back allocated G&A makes sense only if subtracted it out to get to operating income in the first place. If you used only incremental G&A to get to operating income, don't add back the allocated G&A.	5. Did not neutralize non-incremental or fixed G&A costs (-0.5 point)
Non-cash Working Capital	The non-cash working capital investment is the change in working capital each year. It begins right now (year 0) and affects cash flows each year, as it increases with revenues. At the end of the project lifetime (only in the finite life case), don't forget to get it back.	Non-cash working capital = Accounts Receivable plus Inventory minus Accounts Payable. It is only the change that should affect your cash flow, not the total working capital.	6. Change in working capital computed incorrectly (-0.5 point)
Salvage value in finite life case	This should include the book value of the fixed assets that have not been depreciated by year 10 plus the working	If you don't salvage working capital and recover book value of assets, you should at least show the tax benefits from having a	7a. Did not salvage working capital or book assets in finite life case (-0.5 point) 7b. Salvaged working capital and book

	capital salvage. You can also add in the salvage value of the distribution, though it is unlikely that Google will actually sell them.	capital loss.	assets in perpetual life case (-0.5 point)
Terminal value in longer life case	The terminal value should be estimated using the inflation rate as the growth rate. It should also reflect reasonable assumptions about capital maintenance in perpetuity. You can even assume a finite period (rather than a perpetuity) and compute the terminal value as the cashflows over that period.	You cannot keep a project going without investing in it. In fact, here is a very simple test. If you look at your cashflow in year 10, it includes a cash inflow from depreciation. If you assume that this cashflow will grow in perpetuity, and you have no capital investment, you will run out of capital to depreciation very soon. In other words, that cashflow cannot be sustained. If you set your terminal growth rate $> 1\%$, you will need new capacity to meet the additional real demand.	8. Set growth rate $>$ inflation rate, without adding to capacity (-0.5 point)
Capital Maintenance	Consistency and common sense demand that there should be more capital maintenance (even over the next 10 years and not just after), if you are trying to run this as an longer life project. What is a reasonable cap ex? If depreciation represents depletion in the assets, capital maintenance should make it up.	If you just extend the life of the project without allowing for capital maintenance, projects will always look better with longer lives than shorter ones. The key, though, is to match the capital maintenance assumptions to assumptions about project life. With the finite life scenario, it makes little sense to pump huge amounts into capital maintenance, especially as you wind the project down.	9a. Capital maintenance assumptions same for finite and infinite life (-1 point). 9b. Inadequate capital maintenance (-1 point). <i>I am not looking for a specific number or numbers, just that you are thinking about the two cases differently.</i>
Synergy (Google Entertainment)	The increased earnings at the Google Devices are also incremental cash flows. They have to be discounted back at the cost of capital for the Google Device	You should generally not use the same cost of capital that you did for the GCar cashflows.	10. Used Google GCar cost of capital to value synergy (No points off)