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The U.S. Tax Aspects of Innovation

Michael F. Solomon*

We have heard a lot about R&D and innovation, how it is affected by environmental laws, how it is affected by financing, and how it is affected by GATT rules. It is obviously also very much affected by tax. We have heard a lot from the Canadian side. Hopefully it is not too much of a surprise to know that the Canadian rules are much more favorable than the U.S. rules.

I thought that it would be good at least to try to develop an understanding of what the U.S. rules are, and to see how tax credits and tax deductions will give certain incentives to U.S. companies to do R&D here. I will also go over a number of general rules that seem to be out there in the world of R&D, answer a couple of questions, or at least pose a couple of questions that seem to be often asked of U.S. tax professionals in the R&D area. Then I will probably go into what I think is most interesting topic for this group: a discussion of R&D as it relates to the proposals that are currently going to be pursued by Congress, notably the flat tax, the consumption tax.

It is my prediction that we are going to have a major overhaul of our tax system in the next three to five-year period. So when understanding innovation and credits and deductions for R&D, we really ought to ask, what do these proposals hold, and what can we do to make them more palatable to the extent we want to continue to provide incentives for R&D?

Let us start with what is in the Internal Revenue Code today, so we know what to compare it against when we ask what is coming down the road. The tax rules in the United States are pretty simple. A business operates and gets a lot in the way of revenues. It also sends a lot of expenses out in the way of payments for capital and for other property, for wages, for interest, and all kinds of things. If we just pay tax once in a business, it would be pretty easy. We would take in all the inflows and subtract out all the out-flows, and it would be a one-time calculation. Unfortunately, or fortunately for tax professionals, there are tax windows, generally, twelve months long, in which you have to place all of these items of income and expense and pay tax to the government in order to allow it to function and to run the country.

R&D is generally an expense. It is an expense that is made up of

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lots of different components. There are labor components, material components, overhead components, but they are all expenses of the entity. And the question is, when does the taxpayer get to deduct those expenses in calculating its U.S. federal income tax? Under the Code, there is basically one section that deals with this. It is Section 174. That section of the Code is fairly favorable at least with respect to taxpayers, because it gives them a current deduction for their R&D expense to the extent that they make an election.

This is somewhat surprising, at least for me as a tax professional, because so much of the Internal Revenue Code is designed to match expenses with associated revenues. Normally when you are performing R&D, you have money going out on day one, and you hope to get benefits back from that at some indefinite time in the future when the R&D proves successful and the products or the technologies you develop basically start to bear fruit.

So the ability to take a current deduction today for outlays that should be associated with future revenues is something that is the exception under the Internal Revenue Code, not the rule. This is not to overstate the rule under 174, it does say that R&D expenses can be subject to capitalization and, in fact, are subject to capitalization unless you make the election to expense. And if you do, in fact, capitalize your R&D, then it is recoverable over a period of not less than sixty months in the form of amortization starting when the results of the research prove successful and you start getting some benefit back from it in the form of product sales, royalties, or other types of income.

Under the umbrella of 174, there are a number of tax issues that need to be kept in mind. Not all engineering and development expenses constitute R&D. Accordingly, we usually start our analysis by asking, "what is R&D for federal income tax purposes?" This is something that one would think is such an easy question. Are there not really specific rules there? Unfortunately, the answer is no. The provision 174 came in with the 1954 code, and basically there were regulations that were promulgated then, in addition to regulations that were proposed in 1983 and 1989, all of which are designed to try to define R&D. Is it something that you can touch or feel or define precisely?

By the time the 1989 provisions came out, people ended up defining R&D along with something called the "time line." The time line said that everything that you do prior to the time you have a commercial product developed is R&D. Once you reach the state of having a commercially exploitable product, then everything that you do after that is not R&D. It is product development, but of a non-R&D state for purposes of federal income tax.

In 1993 there were new regulations proposed, which became final in 1994 that basically dropped this time line approach in favor of what taxpayers long — at least as long as I have been practicing — used as
the standard. And that is an identification of whether your work, your engineering work, was designed to address technological uncertainty of any type, not whether it was before, during, or after commercial production.

So you now have moved into a state, taking away from this time line approach, that really is looking to the uncertainties that are involved. Now, I could spend my entire time trying to discuss these rules of R&D, but I think that it is enough to say that at least there has been a change, and the change has been to a more subjective standard. But I would say that the one area of concern that I and certainly a number of policy people have is the limitation in the United States to R&D for tax purposes constituting research and development in the natural and physical sciences. So if you have a humanity-type of research project or a historical-type of research project, something that does not involve an engineer with green eye shades tinkering in a laboratory, the U.S. tax rule says that that is not qualifying research.

That might have been fine fifty years ago when we were trying to build a widget better, or to make steel harder, or to make planes and missiles. But our economy has changed over the course of the years. We do a lot more now with service and with things of that nature, and so I think that how we do research in education, in learning, in teaching, and all of those things, that is good research. And maybe it is something that the tax system ought to recognize now as research. I will have to see whether or not anything is pursued on that basis.

The Internal Revenue Code has another major section that deals with R&D, and it is called Section 41. That is the section that gives a tax credit for something called incremental research expenses. Our credit provisions are not nearly as beneficial as the Canadian provisions, and that, I think, is one of the problems that many companies have started waving banners about.

The big problem with respect to our system is effectively that if you have flat R&D expenses based on your sales for a number of years, you end up getting no R&D credit. So you may still spend a considerable amount of money with respect to your R&D, but you are not going to get credit for it.

I guess Congress felt that they wanted to give businesses incentives to spend more on R&D, and not to maintain a specific level. If a business is spending a certain flat percentage of their sales revenue as R&D, then they do not need an incentive. But the nature of an incentive, at least in my understanding of tax law, is that it has to be something that people realize that they are going to get. Unfortunately in our system, you really do not have that target as well-defined. Most of the people that I represent in the R&D area are so uncertain about their getting a credit for certain work they are doing that it does not work right. And the reason they have that is multi-fold. First, the
R&D credit is not a permanent credit. It is something in the U.S. rules that is provided for a three-year window, or a two-year window, or a one-year window. In fact, the credit has expired five times in the last fourteen years only to be reenacted in the subsequent tax bill, sometimes with retroactive application.

It does not make much sense when you have this type of re-extending credit. Because somebody who is going to enter into a ten-year research project does not really have any idea about how to analyze undertaking the research and whether it is going to get a credit. That is the way the system works, and it generally works that way because tax legislation in this country is undertaken on the basis of what is called "pay as you go." If the government were to introduce a permanent R&D credit, it would have to pay for that on a permanent basis, meaning fully offsetting the cost of the credit by some tax that is coming in or on a full basis out incrementally over the future. If you have a two-year R&D credit provision, you only have to pay for it with two years worth of offsetting revenue. So, it is much easier to develop a one or two-year response to an incremental credit than it is for a permanent credit. That is a big problem with respect to the credit here. We do have a bill that is pending. It was introduced very recently to extend the credit on a permanent basis. But those types of bills have been introduced time and time again without success.

President Clinton, when he gave his State of the Union address, suggested he wanted a permanent R&D credit. Unfortunately, in his budget bill, there was not even a provision to extend the current credit. And that expired in June of 1995. But do not start blaming the Democrats, because the Republicans in their Contract with America also did not have a provision to do anything with respect to R&D. There are, however, in terms of scheduling, hearings that just recently were completed on R&D. And Congressman Archer, who runs the House Ways and Means Committee, has promised that the Extension Bill will, in fact, contain an extension with respect to R&D.

The next thing with respect to the R&D credit that I would like to mention — and I think that you said the same thing with respect to Canada — is that we do not give credit unless you perform the research in the United States. I have never really understood why the credit is localized only to U.S.-performed R&D. Because if you are trying to get your companies out there to make the U.S. pie, tax pie, grow, and the U.S. productivity base grow, you should not care whether the U.S. companies do the research, as long as they own the results of the research here. So I have never really understood exactly why the credit is limited only to research performed in the United States, but that is what the rule states. So even though you have a U.S. company, if you are doing research offshore, in another jurisdiction because you have your scientists over there, or if you have good people
over there, or if you are doing the research in space or other types of areas, you may not be able to take the expenses of that and claim a credit. Again, I am not exactly sure what the rationale is.

The last point that I would like to mention is that credit does not apply to all research and development, as with Section 174, but is only available with respect to labor expense, wage expense, and supply expense. There is also a credit available for sixty-five percent of something called "contract research." That is when you go out and hire somebody else to do research for you. You can take sixty-five percent of the amount you pay and claim the credit on that. That limitation constricts to a great degree what is subject to the credit since everything outside of the United States now, which may be R&D, does not qualify for the credit. You cannot have overheads qualify for the credit, and you cannot have certain types of other R&D expenses qualify.

But these rules do tell you that it is possible to double dip. One of the things we found out, particularly in the Canada/U.S. situation, is that you can go and have research done in Canada, and under the Canadian rules, have that research qualify for credit in Canada, and as part of that research, develop a component you can then take the component and get it shipped into the United States where it is integrated with other components that together form widget A. And widget A is a prototype to see how high it can fly or how fast it can go or something else of that nature. The component that moves from Canada into the United States is treated as a supply in the United States credit rules, because it is a material that is consumed in the research effort. Then you test the prototype, put the prototype together, do what you need to do with respect to the prototype, because prototype costs are qualifying credit costs. So in that situation, the Canadian company gets a full credit with respect to all of its research activities, and one hundred percent of the cost of that component as it comes across into the United States also qualifies for credit here. So you have one Canadian affiliate doing research there, selling the component into the United States to the parent or to the sister, and basically the full amount of that is also creditable here. The full amount of that includes all of the research expenses, plus labor, plus overhead, plus profit that is derived by the Canadian company in its outbound sale to the United States.

So there are double dipping possibilities. There are, you know, intricate ways that you can try to get a better shake in the United States, but generally our credit is not as favorable as doing the research in another jurisdiction such as Canada.

The last major rule that I would like to mention is Section 864(f), which is a provision in the Internal Revenue Code that takes your research expense and allocates it between foreign and domestic source income. It is well beyond the scope of this discussion to explain why that is entirely relevant, but it goes to the heart of something called
"foreign tax credit calculation" in the United States. If you are a U.S. multinational, and you pay taxes in a foreign jurisdiction, you would like to credit those taxes against your U.S. tax liability. If you cannot, it is obviously an immediate down side on your financial statements. Section 864(f) is a rule that tells you how much of the research that you perform in the United States is subject to expensing against U.S. income. U.S. taxpayers would like to expense one hundred percent of it, but unfortunately, that section does not allow you that much.

What kind of questions do we get asked? What are the issues that taxpayers seem to want to understand? If you do all of your research here, and you sell all of your products here in the United States, there is not much in the way of questions. But as a business becomes international, the number of questions that must be answered increases. For example, should I manufacture only in the United States, or should I manufacture in foreign and other local jurisdictions? If I locate abroad, should I license the technology to the foreign affiliate, or should I have the foreign affiliate own that technology?

These questions cannot really be answered on a simple basis. It makes sense to try to maximize your tax advantage, get full deductions in jurisdictions that have high rates, and give maximum credit to the extent that you can, but in many instances you will find that your quick, intuitive answer is not really the best one. Many times you will want to forego a deduction in a high tax jurisdiction with respect to research and development if the underlying intangible right can be owned in a jurisdiction that imposes low taxes on all of the receipts from the royalties — or from the technology.

You would not usually enter into an R&D effort if you did not think the present value of the return that you will get from it will far exceed the cost. So you might be willing in these instances to take no deduction with respect to the cost, where that will save you, say, forty percent in the United States if you can get a stream of income that is ten times the present value of the cost of that where that stream of income, whether it be through sales or royalty receipts is, in fact, subject to a ten percent tax rate.

So in any event, there is no clear-cut answer. So much depends on every individual company. But normally you will find that, at least for tax purposes, you have to ask the question of whether or not the research should be done here and then licensed out, or whether all members or certain members of an affiliated group worldwide should enter into something called a cost sharing arrangement. Under cost sharing, the research can still be performed in one place for U.S. purposes, but each individual company that shares in the cost sharing arrangement will, in fact, own a piece of that research result in its own jurisdiction. Just the legal people here understand this. Lots of companies say they only want their intangibles to be owned in a U.S. company. They do
not want them to be subject to capture by other jurisdictions. While for legal purposes that may work, you can still have foreign companies own, for tax purposes, rights and intangible assets to the extent they have entered into the right kind of cost sharing arrangement. The legal interest will still be in the United States, but the tax interest will be shared.

What is the future going to hold for R&D incentives in the U.S. tax system once we move our tax system to something called a flat tax, or consumption tax? Is it something that we are still going to have incentives for, at least as favorable as what we have in the current Code?

There is a story that says that when civilization first started, somebody put a box in the middle of the square and said every time someone would pass it, they would drop a couple of coins in there. And that was the way it went for a long time. Then the people who were tall said they did not like to stoop down and bend over to put the coins in, so they made the box taller so they did not have to stoop. Then they put a handle on it so they could pull it down for the people who were shorter. Then the people out in the suburbs said, why do we have to come downtown to put our coins in? Let us put wheels on the box, and we will take it out to the suburbs every once in a while so we can drop our coins in. Well, that was fine, except when they pulled the box down with the wheels on it, it started sliding around. So they said, gee, we better put some brakes on it, and they put tax brakes on it. And then eventually they decided that this thing did not quite work right. It needed this, it needed that, and they put porches on it, and they put tax shelters on it, and the whole thing got to be just enormous. Eventually, the only people that ever seemed to pay any attention to it and to really like it were the tax lawyers and the tax accountants. They were the only ones that came by and polished it up and shined it up every day. Would it not be a shame if this box were flat?

That is kind of where we are today. We basically have come to the point where the tax system is absolutely outlandish, and nobody is going to say otherwise. But what about these proposals that are really on the plate? The flat tax proposals and the consumption tax proposals make a fundamental change in the way that we would be paying tax. Currently, the U.S. tax rules generally tax what is called income. And income is all of the receipts, less certain expenses. But within taxable income is everything that is consumed and everything that is saved. Everything you get in either has to go to one of those two places. You either have to save it, or you have to consume it. And the big difference between an income tax and a consumption tax is that the consumption tax only taxes the element that is consumed. It does not tax the element that is saved. And the general feeling, at least with respect to tax economists, is that the low productivity rates this country has, its in-
ability in certain instances to compete in foreign markets, and all kinds of other things up and down the line, are a result of our failure to have enough incentives to save.

So as Congress gets more and more into this, something along the lines of giving a benefit or a deduction for savings will, in fact, materialize. That is not to say we have not done that in the past. We had IRA's before. We had accelerated depreciation, which is essentially a form of a consumption provision. Anything that encourages savings at the expense of consumption is really one of the understatements of the consumption tax.

How does this come along in the R&D area? I am not going to tell you that consumption taxes or flat taxes are good, although I think they are, but how does it work with respect to R&D? Now, the flat tax, whether it be the Armey proposal, which is kicking around, or Spector's flat tax bill, or that of the two economists that seem to be most notable, Hall and Rabushka, what do they all do? Well, they basically say that we are going to tax business income and labor income, and we are going to wholly exempt savings and investment income. So you split the world into three pieces: you have business income, labor income, and investment income. And investment income is totally outside of the tax base, and only business income and labor income are subject to tax.

Now, on the business side, gross revenues or gross receipts are the starting point of the tax system, and then you get expense treatment for certain items. And one of the things under the flat tax proposal that you get expensing for is basically the cost of labor, wages, and other business inputs. So at least from a theoretical basis, you would think that, if 174 is available under the current Code for expensing R&D, that a similar concept ought to apply under the flat tax proposals, so we ought not to be too concerned in terms of R&D incentives if a flat tax proposal comes along. But if you get deeper into the flat tax proposals, you also realize a couple things. It gives businesses an incentive to save by giving them a deduction for property, plant, and equipment. So it is not like you have to capitalize it under current law and amortize it. You physically get to deduct your land and your structures. You get to deduct your machinery and everything else. But one of the things that is suggested in the proposals is that the flat tax much less refined than the consumption tax proposals, but they apparently do not give taxpayers a deduction for purchased intangible assets. So purchased tangibles get deducted under the flat tax, and purchased intangibles are not.

Now, that is consistent with the way they treat lease income, too, because if I buy a machine, I get to deduct it, but if I lease a machine it is not so clear under the proposal that you get a deduction for your lease payments. If I pay a royalty rather than a license or a rental, do I get a deduction for my royalty? Well, if I did not get to deduct the cost
of the intangibles, should I also not get a deduction for the intangible royalty expense? I think all of those rules will change as the flat tax provisions become further refined, because there does not seem to be any reason not to allow deductions for intangibles, not to allow lease payments to be expensed provided that those payments are made to other businesses in the same tax system that we are in. So at least you will get a single unified tax at one point on the entire business income or the entire GDP of the country.

The consumption tax proposals are basically a little more troublesome, in fact, much more troublesome to me, and that is because they basically tax the value of all consumed property and services in the economy.

I compared two quick overheads here that show what a normal income tax calculation looks like. We have receipts of domestic sales and foreign sales, and then we have all of our expenses leaving aside interest expense for the minute. The cost of goods sold built up with purchased inventory for the domestic purchasing, purchased inventory for the foreign sales, labor, PP&E purchases, R&D labor, and legal fees based on outside law firms. For purposes of income tax, everything on the left gets added up. Everything on the right gets added up except for the PP&E purchase, and we have to pay a single tax on our net income. That net income in this case, assuming I get $90,000.00 worth of appreciation out of my $390,000.00 PP&E expense means I pay tax on $600,000.00 worth of income.

Everything in red is not taken into account for purposes of consumption tax. So consumption tax, as it has been deposited here, excludes foreign sales. There is a border adjustment with respect to the consumption tax. So in my tax base there are no revenues for foreign sales. And in addition, and most notably, I get no deduction for the cost of labor that I pay. So all of my labor expense and my inventory, and all of my R&D labor expense is basically nondeductable. Those two pieces have a huge affect with respect to taxpayers that are labor intensive or have significant labor expense.

Now, it is also true that if I had interest expense here, the interest expense would be deductible for the regular income tax, but not deductible with respect to the consumption tax.

We saw the taxable income $600,000.00 down here for an income tax. Under the consumption tax related slide, the tax base is $900,000.00. The tax base has grown, which is what you would think since they are telling us our rates are going to drop ten points, but obviously they have dropped down because we no longer get to deduct labor. To the extent that that R&D effort is labor intensive, which in my experience it is, it seems to me that we are going to have a big disincentive in this situation to do our own R&D because nobody is going to get a deduction for that, nor a credit for all of that work.
I have been told that I ought to end here, and, you know, I would say that all of these proposals are certainly in a start-up phase. We have been talking about consumption taxes and flat taxes in this country for probably thirty to thirty-five years, but only in the past three or four years have we found that these proposals are really getting the attention in Congress and in the media that they deserve in terms of the possibility of getting enacted.

But, as I said, I think that there is enough of a movement now to try to do something along these lines that it will be important to keep them in mind, and particularly if we want to continue with incentives with respect to R&D to see how we can develop these systems in a way that does not prejudice U.S. companies from performing their R&D here.

I have not seen anything in any of the write-ups with respect to these two proposals that suggest this is a disincentive for R&D, or dictate how R&D should be handled in these types of proposals. So far people have not focussed on that. As I said, if you look at the consumption tax provision, it is a real disincentive relative to where we are today, and it may clearly be a reason that some of this would then move offshore.